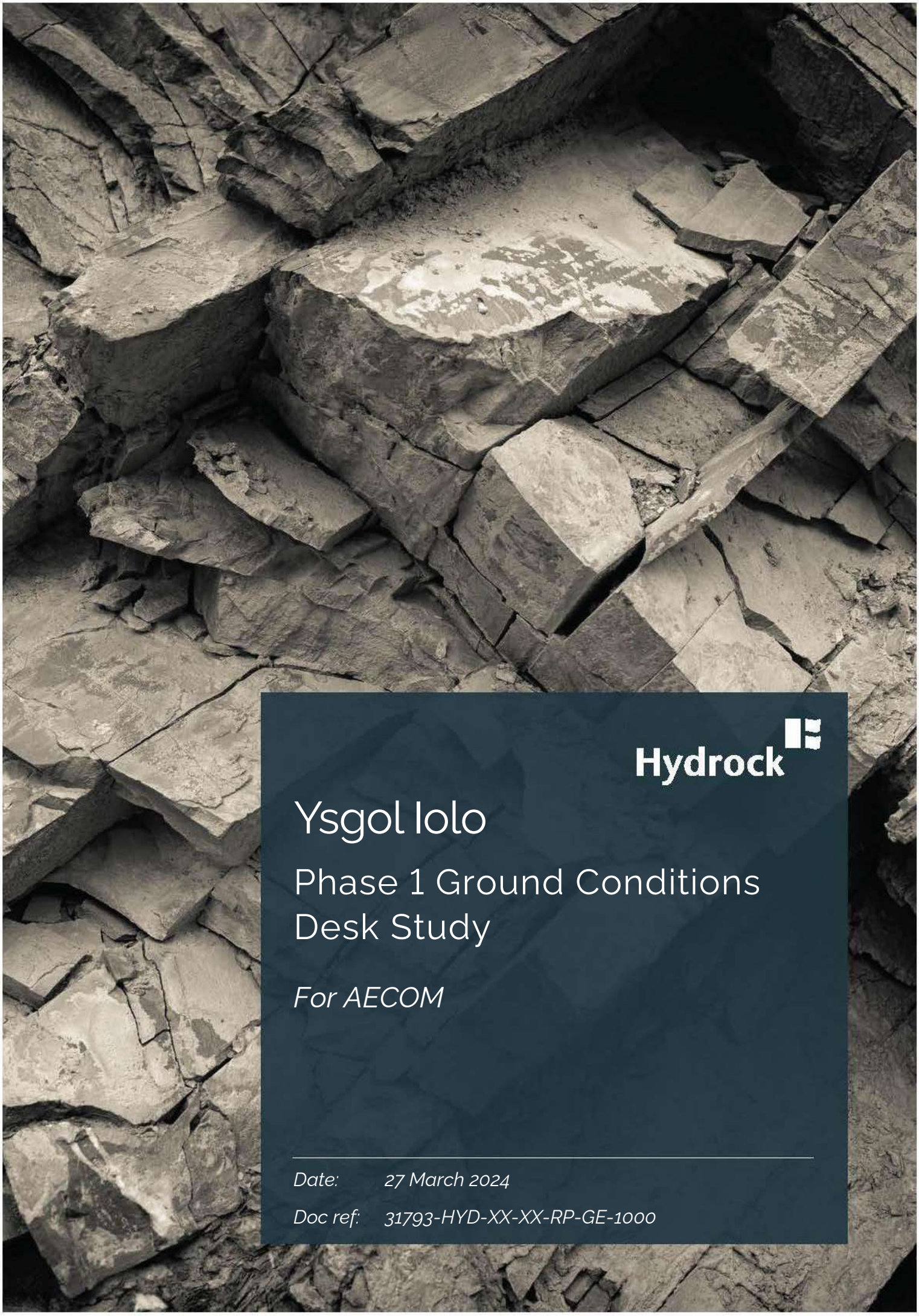

Hydrock

Ysgol Iolo

Phase 1 Ground Conditions Desk Study

For AECOM

Date: *27 March 2024*

Doc ref: *31793-HYD-XX-XX-RP-GE-1000*

Document control sheet

Issued by	Hydrock Consultants Limited Wharton Place 13 Wharton Street Cardiff CF10 1GS United Kingdom	T +44 (0)2920 023 665 E cardiff@hydrock.com hydrock.com
Client	AECOM	
Project name	Ysgol Iolo	
Project title	Phase 1 Ground Conditions Desk Study	
BIM reference	31793-HYD-XX-XX-RP-GE-1000	
Project reference	31793	
Date	27/03/2024	

Document production record

Issue Number	S2 P1	*Name*
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Document revision record

Issue Number	*Status*	*Date*	*Revision Details*
P1	S2	27.03.24	First issue.

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Executive summary

Site information and setting	
Objectives	The objectives of the Phase 1 Desk Study are to formulate a preliminary Ground Model, and an initial Conceptual Site Model to identify and make a preliminary assessment of any potential geo-environmental and geotechnical risks to the proposed plans for development.
Client	AECOM
Site name and location	Ysgol Iolo, Cowbridge. The nearest address for the site is opposite 31 Dunraven Close, Cowbridge, CF71 7FJ.
Proposed development	The site development proposals are understood to comprise a two-storey primary school with associated soft and hard social areas, car parking and associated infrastructure.
Site description	The site currently comprises open ground, and previously, until recently was utilised by local contractors as an access route, compound, car park and materials storage area during construction of the adjacent housing estate to the north and west.
Desk study summary	
Topography	The site and surrounding area slopes gently to the northeast.
Hydrology	The nearest identified surface water features are a number of drains c. 200-250m east of the site. Beyond this, the nearest major surface water feature is the River Thaw c. 460m south-east of the site.
Site History	The site has remained undeveloped open fields until late 2010s where it was utilised to provide access and storage space for materials for the development of the surrounding housing estate. Numerous potentially contaminative activities were located in the immediate surrounding area including quarries, residential construction, electricity substation and sewage pumping station.
Geology	Solid: Blue Lias Formation (Marginal Facies) and Porthkerry Member.
Hydrogeology	Principal Aquifer: Blue Lias Formation (Marginal Facies). Secondary A Aquifer: Porthkerry Member.
UXO risk	A non-specialist UXO assessment indicates a low bomb risk.
Initial Conceptual Site Model based on desk study	
Potential contaminant sources	» Made Ground, associated with historical construction activities and imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, and PAH (S01). » Ground gases (carbon dioxide and methane) from organic materials in the Made Ground (S02). » Radon (S03). » Petroleum hydrocarbons and mineral oil associated with vehicle maintenance, fuel storage and possible localised spillages in the contractor's compound (S04).

Potential contaminant linkages (for receptors for which there is or will be a pathway)	» Site end users (R01) via direct contact and ingestion (P01), inhalation of dusts indoors and outdoors (P02), asphyxiation from ground gas ingress via permeable soils and/or construction gaps (P03), vapour inhalation indoors and outdoors (P04) and radon inhalation via ingress from permeable strata/construction gaps. » Neighbouring properties (R02) via inhalation of dusts outdoors (P02) and vapour inhalation outdoors (P04). » Development end use (buildings, utilities and landscaping) (R03) via radon or ground gas ingress through permeable strata and construction gaps (P05 and P03). » Groundwater: Blue Lias Formation (Principal Aquifer) and Porthkerry Member (Secondary A Aquifer) (R04) via vertical and lateral migration of contamination within leachate through the unsaturated zone (P07). » Surface water: River Thaw (R05) via baseflow from groundwater (P06).
Assessment and conclusions	
Preliminary geotechnical hazards	» Uncontrolled Made Ground (variable strength and compressibility). » Soft / loose compressible ground (low strength and high settlement potential). » Shrinkage / swelling of the clay fraction of soils under the influence of vegetation. » High sulfates present in soils. » Variable lateral and vertical changes in ground conditions. » Loose Made Ground, leading to difficulty with excavation and collapse of side walls. » Earthworks – poor bearing capacity of new fill/unsuitability of site won material to be reused as fill. » Expansive slag within Made Ground.
Preliminary geo-environmental hazards	The possible pollutant linkages (for risk levels of moderate or greater) on an un-remediated redeveloped site, as determined by the desk study and walkover are summarised below: » Made ground (metals, metalloids, PAH, and asbestos) via direct contact, ingestion and inhalation of dust to the end site users » Radon gas via inhalation from ingress via permeable strata and construction gaps to site end users and buildings.
Future considerations	
Further work	Following the works undertaken to date, the following further works will be required: » Intrusive investigation to confirm the presence, depth and composition of any Made Ground across the site; » Intrusive investigation to confirm the depth, soil strength, density profile and composition of natural strata across the site; » Geophysical investigation to assess likelihood of shallow solution features being present at the site; » Determine depth to groundwater beneath the site; » Monitor ground gases for methane and carbon dioxide if organic material is found to be present within the Made Ground across the site;

	» Assess trench stability; » Obtain information on soil sulphate conditions in terms of Aggressive Chemical Environment for Concrete Class (ACEC Class); and, » Undertake soil and water sampling to be subjected to laboratory testing. Following the investigation, assessment will be required to: » Update the Ground Model; » Update the Geotechnical Risk Register; » Provide Geotechnical Design recommendations; » Update the initial CSM including identification of plausible pollution linkages; » Undertake GQRA of potential chemical contaminants to establish 'suitability for use' under the current planning regime: and » Discuss potential environmental liabilities associated with land contamination (soil, water and gas).

This Executive Summary forms part of Hydrock Consultants Limited report number 31793-HYD-XX-XX-RP-GE-1000 and should not be used as a separate document.

1. Introduction

1.1 Terms of reference

In February 2024, Hydrock Consultants Limited (Hydrock) was commissioned by AECOM (the Client) to undertake a Phase 1 Ground Conditions Desk Study. The site is located opposite 31 Dunraven Close, Cowbridge, CF71 7FJ.

The site is currently open ground, previously used as a contactor's compound during construction of the adjacent housing developments.

Hydrock understands that the proposed development is to comprise a new 2-form entry primary school. Hydrock has not had sight of any formal development layout plans at the time of writing but have assumed it to likely comprise a 2-storey building with soft and hard social areas, car parking, roadways and associated infrastructure.

The investigation works have been undertaken in accordance with Hydrock's proposal referenced (Geo Fee proposal, 22 November 2023) and the Client's instructions to proceed (email from Coner Berner of AECOM dated 26 February 2024).

1.2 Objectives

The works have been commissioned to support the planning application.

The objectives of the Phase 1 Desk Study are to formulate a preliminary Ground Model and an Initial Conceptual Site Model of the site to identify and make a preliminary assessment of any potential geo-environmental and geotechnical risks to the proposed development.

1.3 Scope

The scope of the Phase 1 Desk Study comprises:

- a field reconnaissance (walkover) to determine the nature of the site and its surroundings including current and former land uses, topography and hydrology;
- acquisition and review of:
  - historical Ordnance Survey maps, to identify any; former potentially contaminative uses shown at the site and immediately surrounding it, and an assessment of the associated contamination risks;
  - a third-party environmental report to identify any; flooding warning areas, local landfills, pollution incidents, abstractions, environmental permits etc. All of which may have had the potential to have environmental impact on the site;
  - topographical, geological and hydrogeological maps;
  - a site-specific BGS Radon Report;
  - a site-specific BGS SuDS Report:
- development of a preliminary Ground Model representing ground conditions at the site;
- development of an initial Conceptual Site Model (CSM), including identification of potential contaminant linkages;
- a qualitative assessment of any geo-environmental risks identified; and
- identification of any plausible geotechnical hazards.

1.4 Available information

Hydrock have been provided with the following documents for review as part of this desk study commission. Hydrock have not formally been assigned reliance on these reports, and therefore these sources are for information only;

» Geotechnology Ltd, Clare Garden Housing Development Cowbridge, Land Quality in Proposed School Area, Report Number: 2363r1v10723, dated July 2023.

1.5 Regulatory context and guidance

The investigation work has been carried out in general compliance with recognised best practice, including (but not limited to) BS 5930:2015+A1:2020, BS 10175:2011+A2:2017 and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The geo-environmental section of this report is written in broad accordance with BS 10175:2011+A2:2017, EA LCRM (2023) and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The methods used follow a risk-based approach, the first stage of which is a Phase 1 desk study and field reconnaissance, with any potential geo-environmental risks assessed qualitatively. This is done using the 'source-pathway-receptor contaminant linkage' concept to assess risk as introduced in the Environmental Protection Act 1990 (EPA, 1990). Any potential geotechnical risks are also assessed from the Phase 1 desk study and site reconnaissance stage.

The geo-environmental and geotechnical aspects are discussed in separate sections. Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. Designers should take all aspects of the investigation into account.

Remaining uncertainties and recommendations for further work are listed in Section 5 and Section 6.

2. Desk study (and field reconnaissance)

2.1 Data

A number of desk study sources have been used to assemble the following information. These are presented in Appendix D where possible and include:

- Third-party environmental report (Envirocheck report, reference: 337639253_1_1);
- Historical Ordnance Survey mapping;
- BGS Archive Records
- BGS Map Sheet 262 Bridgend Solid and Drift edition 1:50,000, 1990;
- Zetica UXO Risk Maps (https://zeticauxo.com/downloads-and-resources/risk-maps/);
- BGS Radon Report (Reference: BGS_337360_52650); and
- BGS SuDS Report (Reference: BGS_33760_52651).

2.2 Site referencing

Table 2.1: Site referencing information

Item	Brief Description
Site name	Ysgol Iolo.
Site address	Land opposite 31 Dunraven Close, Cowbridge, CF71 7FJ.
Site location and grid reference	The site is located 260m south of the A48, and lies in the west of Cowbridge. The National Grid Reference of the approximate centre of the site is 298430E, 1774660N. The site is approximately 2.05 Ha.
Site boundaries	The site boundaries on all sides are demarcated by heras fencing. Beyond the fencing to the north, east and west of the site are residential dwellings. To the south of the site is Llantwit Major Road (B4270), which runs in a north-east to south-west orientation, with an open field and woodland beyond.

Figure 2.1: Site location

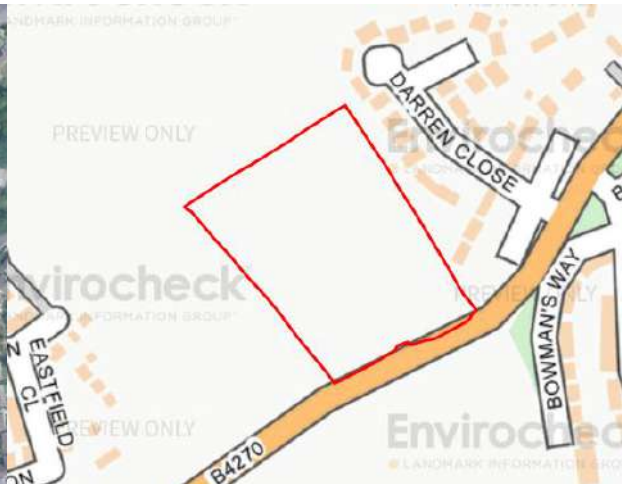


Figure 2.2: Extract from the Ordnance Survey Map.

A site location plan (Hydrock Drawing 31793-HYD-XX-XX-DR-GE-1000) is presented in Appendix A.

2.3 Site description and field reconnaissance survey

A field reconnaissance survey was undertaken on 6 March 2024 to visually identify assess potential geotechnical hazards, contaminant sources for future investigation and identification of possible source-pathway-receptor linkages. The weather during the field reconnaissance survey was dry, clear and cool.

A description of the site is presented in .

Table 2.2 and selected photographs are presented in Figure 2.3 to Figure 2.6. Additional photographs are presented in Appendix B.

Table 2.2: Site description

Item	Brief Description
Site access	The site was accessed from Llantwit Major Road in the south of the site. The site could also be accessed from Dunraven Close, although concrete blocks currently prevent access.
Site area	The site is rectangular in shape and has an area of approximately 2.05 ha.
Elevation, topography and any geomorphic features	The site slopes slightly towards the northeast by c. 4m. Llantwit Major Road adjacent to the southeastern site boundary is situated approximately 0.5m to 1m lower than the site level. The surrounding area generally slopes to the northeast, with a large escarpment from a fault c. 170m to the east with a drop in level of c. 20m with a slope of c. 12 degrees.
Site boundaries and surrounding land	The site is bound by heras fencing on all sides, secured with wooden fence posts. A 2m high hedge line abuts the eastern and western site boundary beyond the heras fencing. Llantwit Major Road lies immediately south of the site, linking the development with the centre of Cowbridge to the north-east. An open field with woodland beyond lies to the south of the site with residential properties to the west, north and east. Immediately adjacent to the western corner of the site is a children's playground, with an electricity substation to the west of the southern corner of the site. To the north beyond Cae Wyndham road is a large development site currently undergoing construction.
Present land use	The site comprises an open grassed field with areas of made ground evident at surface, particularly adjacent to the access/egress gate in the southeastern corner of the site. Various signage can be observed along the site perimeter relating to previous construction traffic and activities on the site. A French drain (gravel strip) is present along the northern perimeter of the site, in an east to west orientation. Various rubble consisting of bricks, tarmac, concrete fragments and stone are found across the site. A faint access track that would have formed part of the former construction compound can be viewed in a north-west to south-east orientation shown by disturbance to the grass in this area of the site.
Vegetation	The site is covered by grass and small shrubs/brambles are located along the eastern site boundary.
General site sensitivity	The site is within a generally residential area.

A site walkover plan (Hydrock Drawing 31793-HYD-XX-XX-DR-GE-1001) is presented in Appendix A.

Figure 2.3: Access to site from Dunraven Close.

Figure 2.4: Access to site from Llantwit Major Road.

Figure 2.5: French drain spanning the north of the site.

Figure 2.6: Remains of former track in central site.

2.4 Site history

A study of historical Ordnance Survey maps (Appendix DC) has been undertaken to identify any former land uses at the site and surrounding areas which may have geotechnical or geo-environmental implications for the proposed development. The key findings are summarised in Table 2.3.

Table 2.3: Site history review

Reference	Key features on site	Key features off-site
OS Map[1] 1877-1880: 1:2,500 and OS Map 1885: 1:10,560	Site forms the southern part of an open field with deciduous trees along the eastern and western site boundary.	An unnamed road lies immediately south of the site. The site is immediately surrounded by open fields on all sides with Cowbridge c. 500m east. Eye well (possible spring) is located some 250m south of the site leading to Dan-y-graig stream which drains south into the Afon Dawen c. 520m southeast of the site Two old quarries are located some 200m and 450m northeast of the site with a third active quarry c. 750m to the southwest. An old limekiln lies some 825m northeast. A single active quarry is mapped 725m south-west of the site. St Brynnach's Church and associated graveyard are present c. 300m west of the site. A flour mill lies c. 500m east of the site and a woollen factory c. 750m south of the site. A gas works lies circa 1km east of the site.
OS Map 1899: 1:2,500 and OS Map 1900: 1:10,560,	No significant change.	Two old quarries are present c. 150m east and 200m southwest of the site. An active quarry is present c. 200m north-east of the site. A spring is now labelled adjacent to Eye Well c. 250m southeast of the site. White Well (pump) lies some 500m northeast of the site. A smithy is located in Cowbridge c. 750m east of the site.
OS Map 1919: 1:2,500, and OS Map 1921: 1:10,560	No significant change.	The flour mill c. 500m east is now labelled disused. A waterway flowing northwest is located c. 300m west of the site beyond St. Brynach's Church.
OS Map 1938-1951 and 1947: 1:10,560	No significant change	The smithy is no longer present in Cowbridge.

[1] Ordnance Survey Historical Map Information provided by Envirocheck

Aerial Photograph[2] 1947		The old quarries to the northeast and southwest appear to be infilled.
OS Map 1964: 1:10,000	No significant change.	The woollen mill c. 500m to the south is now labelled Factory House. White Well c. 500m east is no longer labelled as a pump. A depot is located c. 1km southwest of the site.
OS Map 1970-1971: 1:2,500 and OS Map 1972-1973: 1:10,000	No significant change.	Two houses constructed within 5m east of the site near to the site boundary. An electricity substation is located c. 100m northeast of the site. Previously unnamed road to the south is now wider and labelled Llantwit Major Road. Pond located c. 200m southwest. Afon Ddawen is now labelled River Thaw. The disused mill and factory are no longer shown. Residential expansion of Cowbridge to the south and west.
OS Map 1978: 1:2,500	No significant change.	Further residential expansion of Cowbridge, and construction of a new housing estate to the immediate east of the site.
OS Map 1986 and 1987: 1:2,500	No significant change.	No significant change.
OS Map 1993: 1:2,500 and OS Map 1999: 1:10,000	No significant change.	No significant change.
Aerial Photograph 2000, OS Map 2003: 1:10,000, OS Map 2006: 1:10,000 and OS Map 2009: 1:10,000	No significant change.	No significant change.
OS Map 2013: 1:10,000 and OS Map 2016: 1:10,000	No significant change.	No significant change.
OS Map 2023: 1:10,000	No significant change.	New residential roads and properties constructed immediately north and west of the site. With a sewage pumping station c. 100m north of the site

[2] Historical Aerial photograph, provided as part of the historical map information provided by Envirocheck

Aerial Photograph 2024	Car park and site compound in the southern corner of the site with an access road oriented east-west with material storage in the northern half of the site associated with the housing development construction to the west and north of the site.	Construction of additional houses is underway 100m north and immediately west of the site.

2.5 Geology

The geology of the site area is shown on the 1:10,000 British Geological Survey (BGS) map extract reproduced as part of the Envirocheck report and is summarised below:

Table 2.4: Geology

Ref. for Figures	Location	Stratigraphic Name	Description
Superficial Deposits (Figure 2.7)			
Not present at this site.			
Solid Geology (**Error! Reference source not found.**)			
MRGF-SHLST	On site.	Blue Lias Formation (Marginal Facies)	Interbedded bioclastic (shelly) limestone, calcareous mudstone and siltstones.
PO-LSMD	On site.	Porthkerry Member	Interbedded mudstone and limestone.

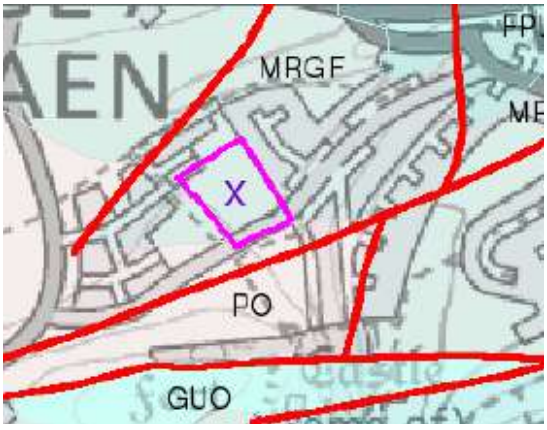


Figure 2.7: Solid geology.

It should be noted that the Blue Lias Formation (Marginal Facies) and the Porthkerry Member were both deposited simultaneously, with the Marginal Facies forming part of the Porthkerry Member. Facies are described due to changes in depositional environment. Therefore, the boundary between the two is likely to be gradual, with the units likely to be difficult to differentiate.

The site is surrounded by a series of faults to the south, northwest and east. The faults have a general west-southwest alignment and dip to the south.

2.6 Hydrogeology

2.6.1 Aquifer designations

Based on the inferred geological sequence presented in Section 0 the aquifer system presented in Table 2.5 applies.

Table 2.5: Aquifer system

Stratum	Aquifer Designation	Comments
Superficial Deposits		
Not present at this site.		
Solid Geology		
Blue Lias Formation (Marginal Facies)	Principal Aquifer.	The Blue Lias Formation is both highly porous and permeable due to joint sets within the strata and potential voids within soluble limestone, which will have developed along joint sets.
Porthkerry Member	Secondary A Aquifer.	The Porthkerry Member is a child unit of the Blue Lias Formation, and therefore has similar transmissivity characteristics. Flow is likely to be impeded within this unit due to mudstone sequences which disrupt the flow rate within the limestone as these are less permeable.

2.6.2 Groundwater abstraction

There is one active licensed groundwater abstraction within 1000m of the site. This abstraction point is 507m east of the site, for use in construction (dewatering). The nearest potable water supply is c. 1360m northeast of the site and is likely supplied by groundwater within the Tongwynlais Formation Carboniferous limestones.

2.6.3 Groundwater source protection zones and groundwater vulnerability

The site is not within a groundwater Source Protection Zone (SPZ) however a Zone 1 (Inner Protection Zone) is located c. 760m north of the site associated with the potable water supply above.

2.6.4 Groundwater levels, recharge, and flow

The BGS SuDS Report commissioned indicates groundwater is likely to be more than 5m below ground level all year round within the Blue Lias Formation Marginal Facies (shell limestone).

On a local scale, groundwater is anticipated to be flowing to the southeast following the wider river valley. On a regional scale, groundwater is expected to flow to the south towards the Severn Estuary.

2.6.5 Groundwater quality

The groundwater body beneath the site (Thaw and Cadoxtan Jurassic Lias) is currently (2021 Cycle 3) classified under the Water Framework Directive as 'good'.

2.6.6 Groundwater flooding

The environmental data report indicates a limited risk of groundwater flooding on site.

2.7 Hydrology

2.7.1 Surface water system and drainage

The surface water features in the vicinity of the site are listed in Table 2.6.

Table 2.6: Surface water features

Feature	Location Relative to Site
Drainage network.	214m west.
Drainage network.	251m south-east.
Drainage network.	475m north-east.
River Thaw.	460m south-east.

2.7.2 Surface water abstractions and discharges

There are no active licensed surface water abstractions within 1km of the site.

There are 3 records (at one location) for active licensed surface water discharges within 1km of the site. This licence relates to a pumping station within the sewerage network, operated by Welsh Water (Dwr Cymru) 837m south-east of site. Discharge is to the River Thaw.

2.7.3 Surface water quality

Reference to the Natural Resource Wales web site shows the site is located within the catchment known as the Tawe to Cadoxton; the specific river water body being the River Thaw. The current (2021 Cycle 3) overall status under the Water Framework Directive is described as 'moderate'.

The reason for the water body currently having a 'moderate' status is due to eel populations and phosphate concentrations.

2.7.4 Surface water flooding

The desk study information indicates the proposed development is not noted to be in a flood risk area.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regard to drainage and flooding.

2.8 Mining and mineral extraction

The site is not within an area of recorded mining and mining risk is not considered further in this report.

2.9 Natural ground instability

The site is underlain at shallow depth by potentially soluble strata (Blue Lias Limestone), with a potentially deep water table. There is a risk of voids being present due to the dissolution of the limestone. This is discussed in more detail below (Section **Error! Reference source not found.**).

2.10 Dissolution Features

No dissolution features are mapped within 1km of the site. It is therefore considered that although the Porthkerry Formation and Blue Lias Marginal Facies comprise limestone, the presence of mudstone interbeds reduces the potential for the formation of such features as the impermeable mudstone will inhibit the percolation of water through the strata. It is more likely that smaller features will be present such as dolines (surface depressions) as opposed to larger and deeper features. No visual evidence of solution features was observed at the time of site reconnaissance.

2.11 Waste management

There are no current or historical waste management sites recorded within 250m of the site.

2.12 Regulatory information

Information in the Envirocheck Report (Appendix D), relating to various regulatory controls has been reviewed, with a summary presented below in Table 2.7.

Table 2.7: Regulatory information within 500m of the site

Regulatory Data	Distance from Site	Details	Potential Risk	Comment
Discharge Consents	N/A	No entries on discharge consents within 500m of the site.	No.	-
Substantiated Pollution Incidents	426m north.	August 2012, Category 2 – Significant Incident (air). General biodegradable composted material.	No.	Due to the time since event and immobile nature of the pollutant.
Trade Directory Entries	494m east.	Inactive. Car body repair shop.	No.	Due to the distance from the site, and inactive status.
Fuel Station Entries	N/A	No entries on petrol stations were recorded within 500m of the site.	No.	-
Control of major accident hazards sites (COMAH)	N/A	No entries on COMAH sites were recorded within 500m of the site.	No.	-
Registered radioactive substances	N/A	No entries on registered radioactive substances were recorded within 500m of the site.	No.	-
Notification of installations handling hazardous substances	93m east.	Dalgety Agriculture Ltd, liquified extremely flammable gas (including LPG) and natural gas (whether liquified or not). Reference: 05801/Haz,	No.	If the licence was granted, it is likely that all activities relating to the consent would be strictly controlled,

		dated 25th November 1992. Decision unknown.		and therefore it is unlikely to pose a risk to the development.

2.13 Natural soil chemistry

Information contained within the environmental report (Appendix D) gives indicative (estimated) concentration values for the natural soils at the site for a selection of Contaminants of Potential Concern (CoPC). These have been reproduced in Table 2.8.

Table 2.8: Natural soil chemistry

Element	Arsenic	Cadmium	Chromium	Lead	Nickel
Concentration (mg/kg)	<15	<1.8	40 - 60	<100	15 - 30

The data in Table 2.8 has been screened against Hydrock's Generic Assessment Criteria (GAC), which found there to be no exceedances for the intended conservative end use scenario (residential without plant uptake).

2.14 Radon

The radon risk is reported in a Radon Report obtained from the British Geological Survey. The guidance indicates that the site is in a Radon Affected Area where recorded radon levels in 10% to 30% of homes are above the action level and full radon protection measures are required for new buildings at this location in line with current guidance.

2.15 Unexploded ordnance (UXO)

In general accordance with CIRIA Report C681 (Stone et al 2009) a non-specialist UXO screening exercise has been undertaken for the purposes of ground investigation and is presented in Table 2.9.

Table 2.9: Non-specialist UXO screening (for the purposes of ground investigation)

Data	Comment	Further Assessment Required
Site History	There is no indication of former military use from the desk study.	No.
Post War Development	There is no indication of bomb damage to property visible on the historical maps for this site.	No.
Geology Type	There are understood to be no superficial deposits on site, and therefore it is unlikely UXOs would be embedded at depth due to shallow rockhead.	No.
Surface Cover during WWII	The surface cover during WWII comprised open fields. However, it is unlikely that UXOs would have remained undetected during the	No.

	construction of the neighbouring housing estates.	
Indicator of Aerial Delivered UXO	Screening against the bomb risk map (Appendix D) indicates the site to be in an area where the bombing density and subsequent risk is low.	No.

The non-specialist UXO screening exercise has indicated no further assessment is required with regard to UXO in relation to ground investigation. Further assessment may be considered prudent for construction activities.

2.16 Previous reports

2.16.1 Geotechnology Ltd, Clare Garden Housing Development Cowbridge, Land Quality in Proposed School Area, Report Number: 2363r1v10723, dated July 2023

This report by Geotechnology was instructed by Taylor Wimpey South Wales Ltd to make a preliminary assessment of land quality prior to handing over the site to the Local Authority for the construction of a school. Geotechnology's report comprised a brief overview of the strata present and the site history.

Geotechnology highlight that the south-west of the site has been used for access, parking and storage of materials (bricks etc.) whilst the adjacent housing estate has undergone construction. Through the site was an access road orientated northwest to southeast, which was stripped of topsoil, and replaced with a sub-base of slag aggregate imported from Tarmac and Port Talbot. Geotechnology state that this has largely been removed from site.

Geotechnology completed a supplementary ground investigation following previous works undertaken by Geo Environmental Group Ltd (GEG) in 2016. Geotechnology undertook 6 trial pits to a maximum depth of 0.6m bgl across the site, and collected samples for laboratory testing.

Generally, the ground conditions encountered by Geotechnology comprised 'topsoil' of silty slightly sandy clay, underlain by limestone bedrock at circa 0.5m bgl. The limestone bedrock was noted as difficult to excavate.

The findings of the chemical laboratory analysis were compared to the laboratory findings reported by GEG in 2016 (included in the Geotechnology report), and were largely consistent with the findings of the previous investigation. Geotechnology deemed that there were no exceedances of their Generic Assessment Criteria for a residential end use scenario, and concluded that the soil quality would not pose a risk to future site users or workers.

3. Initial conceptual site model

3.1 Introduction

The initial Conceptual Site Model (CSM) incorporates evidence from the site walkover, the Desk Study and previous investigations carried out at the site. The formulation of an initial CSM is a key component of the LCRM methodology, and incorporates: a ground model of the site physical conditions; and an exposure model of the possible contaminant linkages. It forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines.

3.2 Ground model

The preliminary ground model provides an understanding of the ground conditions and is the basis for preparing the preliminary geotechnical hazard assessment (Section 3.3) and the preliminary geo-environmental exposure model (Section 3.4).

3.3 Geotechnical hazard identification

3.3.1 Context

The preliminary geotechnical hazard identification has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents CS 641 and CD 622.

The following section sets out the identified geotechnical hazards and the development elements potentially affected (see Table E.1 in Appendix E for further information).

3.3.2 Plausible geotechnical hazards

Plausible geotechnical hazards identified at the site are:

- Uncontrolled Made Ground (variable strength and compressibility).
- Soft / loose compressible ground (low strength and high settlement potential).
- Shrinkage / swelling of the clay fraction of soils (weathered mudstone) under the influence of vegetation.
- High sulfates present in soils.
- Variable lateral and vertical changes in ground conditions.
- Loose Made Ground, leading to difficulty with excavation and collapse of side walls.
- Expansive slag.

3.3.3 Potential development elements affected

Development elements potentially affected by geotechnical hazards are:

- Buildings – foundations.
- Buildings – floor Slabs
- Roads and pavements.
- Services.
- Construction staff, vehicles and plant operators.

Health and safety risks to site Contractors and maintenance workers have not been assessed during these works and will need to be considered separately during design.

The above plausible geotechnical hazards and development elements affected have been carried forward for investigation and assessment.

3.4 Geo-environmental exposure model

3.4.1 Context

The preliminary exposure model is used to identify geo-environmental hazards and to establish potential contaminant linkages, based on the source-pathway-receptor (SPR) approach.

A viable contaminant linkage requires all the components of an SPR to be present. If only one or two are present, there is no linkage and no further assessment is required.

3.4.2 Potential contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from an on-site or off-site source.

3.4.2.1 Potential on-site sources of contamination

- Made Ground, associated with historical construction related activities (construction materials and vehicle storage) and imported fill from the construction of a haulage road through the centre of the site, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, and PAH (S01).
- Ground gases (carbon dioxide and methane) from organic materials in the Made Ground (S02).
- Radon (S03).
- Petroleum hydrocarbons and mineral oil associated with vehicle maintenance, fuel storage and possible localised spillages in the contractor's compound (S04).

3.4.2.2 Potential off-site sources of contamination

All potential off-site sources of contamination (largely associated with historical land use within the surrounding area) have been discounted from the CSM at this stage due to distance from the site, age of potential contamination and location down-gradient of the site and will not be considered further in this report.

3.4.3 Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- Site end users (R01).
- Neighbouring properties (R02)
- Development end use (buildings, utilities and landscaping) (R03).
- Groundwater: Principal Aquifer status of the Blue Lias Formation and Secondary A Aquifer status of the Porthkerry Member (R04).
- Surface water: River Thaw (R05).

3.4.4 Potential pathways

The following potential pathways have been identified.

- Ingestion and direct skin contact (P01)
- Inhalation of dust indoors and outdoors (P02).
- Asphyxiation/ explosive risk from ground gas ingress via permeable soils and/or construction gaps (P03).
- Vapour inhalation indoors and outdoors (P04)
- Radon ingress via permeable soils and/or construction gaps (P05).
- Surface water via base flow from groundwater (P06).

» Vertical and lateral migration of contaminant via leachate migration through the unsaturated zone in the Blue Lias Formation/Porthkerry Member Groundwater Body (P07).

Health and safety risks to site development contractors and maintenance workers have not been assessed as part of this study and will need to be considered separately.

The above sources, pathways and receptors have been considered as part of the Preliminary Risk Assessment in accordance with LCRM (2023), are considered to be plausible in the context of this site and have been carried forward for investigation and assessment. An assessment of the Source – Pathway – Receptor linkages is presented in Appendix F (Table F.1).

A summary of the plausible linkages is presented on the Initial Conceptual Model provided in Appendix A. (Hydrock Drawing 31793-HYD-XX-XX-DR-GE-1002).

A number of potential pathways have been discounted from the exposure model and will not be taken further in this report, as these are not considered to be plausible. Abstraction and consumption by people (or other utilisation) of groundwater is not anticipated due to the limited connectivity of the aquifer on site with areas of active abstraction and presence of low permeability mudstone interbeds within the Blue Lias Formation. Surface water via overland flow and drainage discharge have also been discounted as locally it is anticipated that groundwater flow is to the southeast in line with topography and dip of the underlying Blue Lias Formation and Porthkerry Member bedrock. The nearest surface water feature down-gradient of the site is c. 400m from the site boundary with a number of housing estates which will prevent overland flow and limit drainage discharge. Further to this, the presence of a fault immediately southeast of the site will inhibit the flow from the site to the surface water.

3.4.5 *Potential implications of climate change*

Climate change has the potential to change the risk profile for conceptual site models and associated contaminant linkages. The impact of climate change on the CSM is site-specific, and a qualitative assessment of the potential impact of climate change on the CSM for this site is summarised below. The assessment has primarily utilised the guidance in Environment Agency (2010)[3] and SoBRA (2022)[4] which set out the UK context to climate change and land contamination. Both guidance documents advocate a "what if" scenario approach in the context of changes in ambient temperatures, an increase in the frequency of extreme rainfall/storm events and heatwaves/droughts, and long-term changes in groundwater and sea levels.

Those "what if" scenarios that are relevant to this CSM are:

» Increased long-term rainfall leading to increased infiltration and seasonally higher groundwater and water levels in surface waters.

» Increased frequency and/or magnitude of extreme rainfall events leading to short-term surface flooding, surface water run-off, groundwater flooding, and/or land-based erosion.

» Increased frequency and/or magnitude of storm events leading to short-term drops in barometric pressure and/or high winds.

» Occurrence of extreme cold and hot weather events leading to changes in ground conditions such as soil temperature, evapo(trans)piration, and soil moisture (for example freeze-thaw effects and desiccation), decreased infiltration and fall in groundwater and surface water levels.

[3] *Environment Agency, 2010. Guiding Principles for Land Contamination. Part 2. FAQs, technical information, detailed advice and references, March 2010.*

[4] *SoBRA, 2022. Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, Society of Brownfield Risk Assessment, August 2022.*

4. Desk study conclusions

4.1 Geotechnical conclusions

The following plausible geotechnical risks are identified:

- Variable Made Ground - settlement or differential settlement of foundations, floor slabs, roads and infrastructure elements.
- Low strength, compressible ground – risk of shear failure and excessive settlement of foundations, roads and infrastructure elements.
- Expansive slag within material imported to site by Geotechnology.
- Attack of buried concrete by aggressive ground conditions – the development site may contain Made Ground and potentially sulfate bearing soils.
- Loose Made Ground leading to difficulty with excavation due to trench instability.
- Risk of instability of excavations with the impact on construction staff, vehicles and plant operators.
- Potential for unforeseen ground conditions and the risks associated with limited data.

These plausible risks require further investigation and assessment.

4.2 Geo-environmental conclusions

Based on historical and current land uses it is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.

The possible pollutant linkages (for risk levels of moderate or greater) on an un-remediated redeveloped site, as determined by the desk study and walk-over, are summarised in Table 4.1:

Table 4.1: Possible Pollutant Linkages (for Risk Levels of Moderate or Greater)

Source(s)	◄ potential Impact on ►	Receptor(s)
Metals, metalloids, PAH, and asbestos in Made Ground below the site.	Direct contact, ingestion and inhalation of dusts indoors and outdoors.	Site users
Radon.	Ingress via permeable soils and/or construction gaps.	Site Users Buildings

These possible pollutant linkages require further investigation and assessment.

5. Uncertainties and limitations

5.1 Site-specific comments

At the time of writing, Hydrock have not had sight of a development layout for the site or details of the construction proposed. Hydrock do not believe that this will impact the findings of this report, however, more detail on the type and size/location of development should be submitted prior to commencement of intrusive ground investigation works.

5.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of AECOM (the Client), by e-mail email from Coner Berner, dated 26 February 2024 under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

This report details the findings of work carried out in March 2024. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, not all potential environmental constraints or liabilities associated with the site may have been revealed.

Unless otherwise stated, the recommendations in this report assume that ground levels will remain as existing. If there is to be any re-profiling (e.g. to create development platforms or for flood alleviation) then the recommendations may not apply.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

The work has been carried out in general accordance with recognised best practice. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance. Where the phrase 'suitable for use' is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

Whilst the preliminary risk assessment process has identified potential risks to construction workers, consideration of occupational health and safety issues is beyond the scope of this report.

The non-specialist UXO screening has been undertaken for the purposes of ground investigation only (i.e. low risk activity in accordance with CIRIA Report C681). Further assessment should be undertaken with regards to other higher risk activities e.g. construction.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds, this report does not constitute a formal survey of these potential constraints and specialist advice should be sought.

Any site boundary line depicted on plans does not imply legal ownership of land.

6. Recommendations for further work

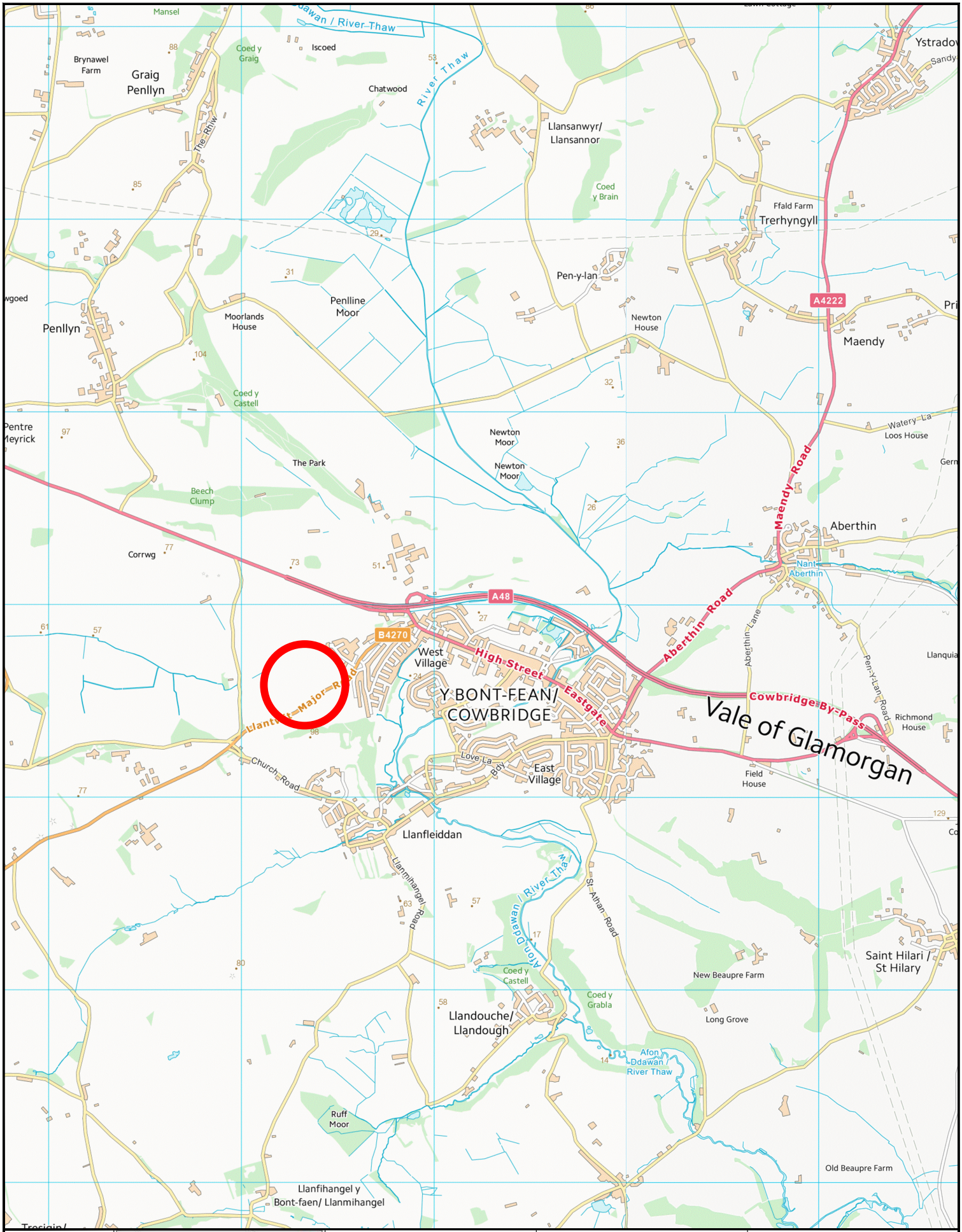
Following the works undertaken to date, the following further works will be required:

- Intrusive investigation to confirm the presence, depth and composition of Made Ground across the site;
- Intrusive investigation to confirm the depth, soil strength, density profile and composition of natural strata across the site;
- Geophysical investigation to assess likelihood of shallow solution features being present at the site;
- Determine depth to groundwater beneath the site;
- Monitor ground gases for methane and carbon dioxide only if organic material is found to be present within the Made Ground across the site;
- Assess trench stability;
- Obtain information on soil sulphate conditions in terms of Aggressive Chemical Environment for Concrete Class (ACEC Class); and,
- Undertake soil and water sampling to be subjected to laboratory testing.

Following the investigation, assessment will be required to:

- Update the Ground Model;
- Update the Geotechnical Risk Register;
- Provide Geotechnical Design recommendations;
- Update the initial CSM including identification of plausible pollution linkages;
- Undertake GQRA of potential chemical contaminants to establish 'suitability for use' under the current planning regime: and
- Discuss potential environmental liabilities associated with land contamination (soil, water and gas).

Appendix A Drawings



OS NORTH

Site Ref: SS97

0 500 Metres

P1	FIRST ISSUE					
	EP	07/03/24	RP	07/03/24	AE	07/03/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT: AECOM

PROJECT: YSGOL IOLO

TITLE: SITE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A4
31793	1:25,000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
31793-HYD-XX-XX-DR-GE-1000	P1

KEY

Site Investigation Boundary

Photo location and reference

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

REV.						
P1	FIRST ISSUE					
	EP	07/03/24	RP	07/03/24	AE	07/03/24
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT

AECOM

PROJECT

YSGOL IOLO

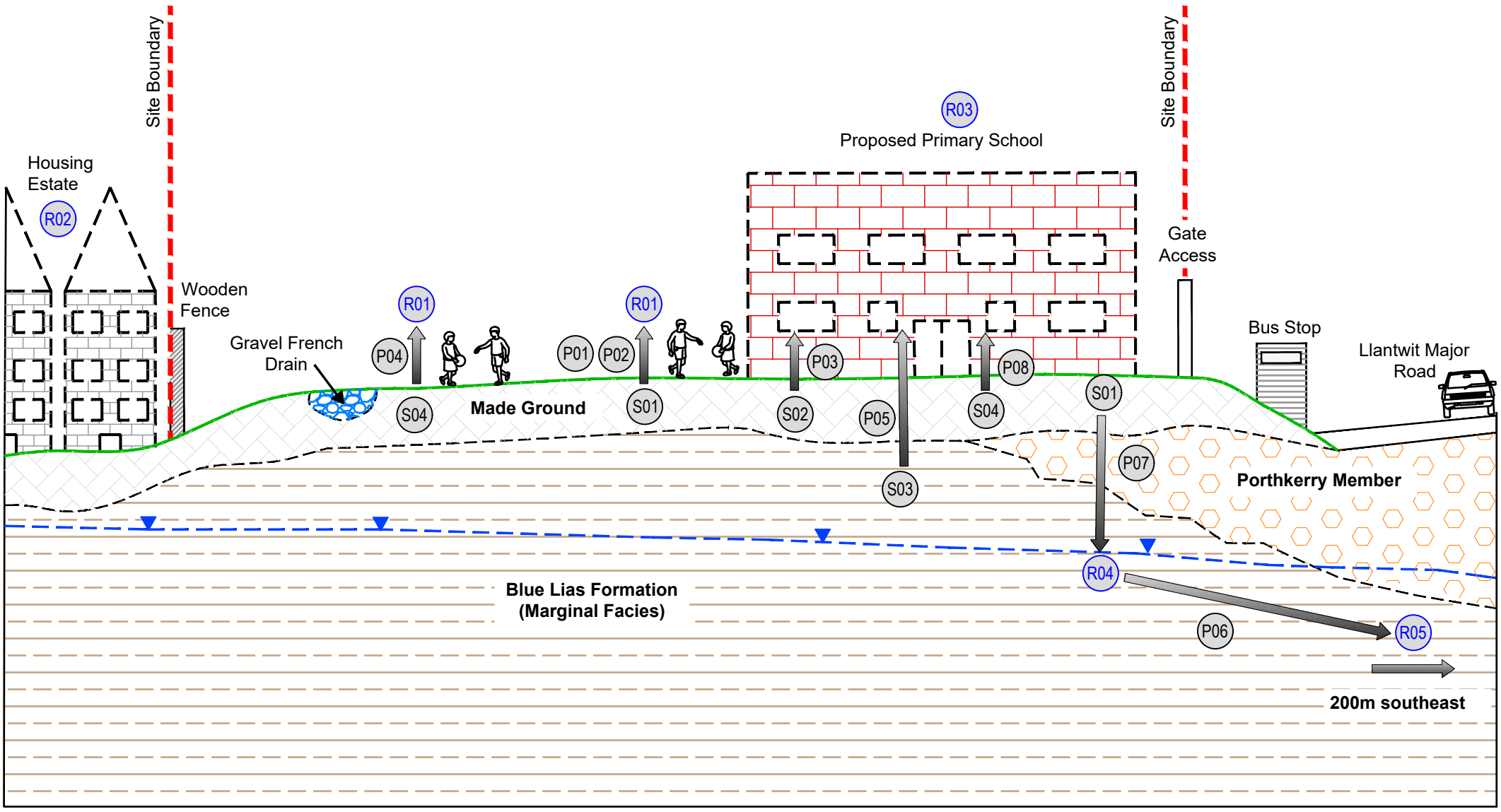
TITLE

SITE WALKOVER PLAN

HYDROCK PROJECT NO.	SCALE @ A3
31793	1:2000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
31793-HYD-XX-XX-DR-GE-1001	P1



Potential on-site sources of contamination

S01. Made Ground, associated with historical construction related activities (construction materials and vehicle storage) and imported fill from construction of access road, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, and PAH

S02. Ground gases (carbon dioxide and methane) from organic materials in the Made Ground.

S03. Radon from underlying geology

S04. Petroleum hydrocarbons and mineral oil associated with vehicle maintenance, fuel storage and possible localised spillages in the contractor's compound.

Potential off-site sources of contamination

No potential off-site sources of contamination have been identified.

Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

R01. People (neighbours, site end users).

R02. Neighbouring Properties

R03: Development end use (buildings, utilities and landscaping).

R04. Groundwater: Principal Aquifer status of the Blue Lias Formation and Secondary A Aquifer status of the Porthkerry Member.

R05. Surface water: River Thaw.

Potential pathways

The following potential pathways have been identified.

P01. Ingestion of and direct skin contact with contaminated soil and dust.

P02. Inhalation of dust indoors and outdoors

P03. Asphyxiation/ explosive risk from ground gas ingress via permeable soils and/or construction gaps.

P04. Vapour inhalation indoors and outdoors

P05. Radon ingress via permeable soils and/or construction gaps.

P06. Surface water, via base flow from groundwater.

P07. Vertical and lateral migration of contaminant via leachate through the unsaturated zone in the Blue Lias Formation/Porthkerry Member.

P08. Ingress via incoming water supplu pipes.

KEY

- Existing ground profile
- Conjectural geological boundary
- Groundwater elevation
- Made Ground
- Porthkerry Member
- Blue Lias Formation (Marginal Facies)

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	EP	07/03/24	RP	07/03/24	AE	21/03/24

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CLIENT: AECOM

PROJECT: YSGOL IOLO

TITLE: INITIAL CONCEPTUAL SITE MODEL

HYDROCK PROJECT NO.: 31793

SCALE @ A3: NTS

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 31793-HYD-XX-XX-DR-GE-1002

REVISION: P1

Appendix B Field reconnaissance photographs

Desk Study Photograph 1	
Date: 06/03/24	
Direction Photograph Taken: East.	
Description: Access to site from Dunraven Close.	
Desk Study Photograph 2	
Date: 06/03/24	
Direction Photograph Taken: North-east.	
Description: Electricity substation off-site.	

Desk Study Photograph 3	
Date: 06/03/24	
Direction Photograph Taken: East.	
Description: Fence line along the southern site perimeter.	
Desk Study Photograph 4	
Date: 06/03/24	
Direction Photograph Taken: North.	
Description: Access to site from Llantwit Major Road.	

Desk Study Photograph 5	
Date: 06/03/24	
Direction Photograph Taken: South.	
Description: View from site towards Llantwit Major Road.	
Desk Study Photograph 6	
Date: 06/03/24	
Direction Photograph Taken: North-west.	
Description: Rubble near to the site entrance.	

Desk Study Photograph 7	
Date: 06/03/24	
Direction Photograph Taken: South-east.	
Description: Fence line in east of site to the rear of residential property.	
Desk Study Photograph 8	
Date: 06/03/24	
Direction Photograph Taken: North-west.	
Description: View across site.	

Desk Study Photograph 9	
Date: 06/03/24	
Direction Photograph Taken: North.	
Description: Change in levels (reducing by circa 1m) in the north-east corner of the site.	
Desk Study Photograph 10	
Date: 06/03/24	
Direction Photograph Taken: West.	
Description: Drainage ditch (gravel) running across north of site.	

Desk Study Photograph 11	
Date: 06/03/24	
Direction Photograph Taken: East.	
Description: View in north of site, looking east.	
Desk Study Photograph 12	
Date: 06/03/24	
Direction Photograph Taken: West.	
Description: Signage associated with previous construction activities.	

Desk Study Photograph 13	
Date: 06/03/24	
Direction Photograph Taken: South.	
Description: Looking over the western site boundary towards Dunraven Close.	
Desk Study Photograph 14	
Date: 06/03/24	
Direction Photograph Taken: South.	
Description: Gravel and rubble in the north of the site.	

Desk Study Photograph 15	
Date: 06/03/24	
Direction Photograph Taken: East.	
Description: View across site looking east.	
Desk Study Photograph 16	
Date: 06/03/24	
Direction Photograph Taken: South-west.	
Description: View over western site boundary towards electricity substation.	

Desk Study Photograph 17	
Date: 06/03/24	
Direction Photograph Taken: West.	
Description: Fencing in the south of the site.	
Desk Study Photograph 18	
Date: 06/03/24	
Direction Photograph Taken: North.	
Description: rubble in the south of the site comprising stone and gravel.	

Desk Study Photograph 19	
Date: 06/03/24	
Direction Photograph Taken: South-east.	
Description: View across site looking south-east towards Llantwit Major Road.	
Desk Study Photograph 20	
Date: 06/03/24	
Direction Photograph Taken: North-west.	
Description: Former track through the centre of the site assumed to be associated with previous construction activities.	

Appendix C Historical ordnance survey maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

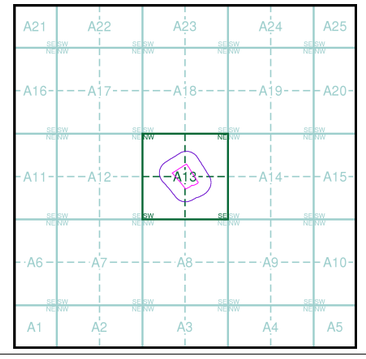
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1885	2
Glamorganshire	1:10,560	1900	3
Glamorganshire	1:10,560	1921	4
Glamorganshire	1:10,560	1921	5
Glamorganshire	1:10,560	1938 - 1951	6
Glamorganshire	1:10,560	1947	7
Historical Aerial Photography	1:10,560	1947	8
Ordnance Survey Plan	1:10,000	1964	9
Ordnance Survey Plan	1:10,000	1972 - 1973	10
10K Raster Mapping	1:10,000	1999	11
10K Raster Mapping	1:10,000	2006	12
VectorMap Local	1:10,000	2023	13

Historical Map - Slice A



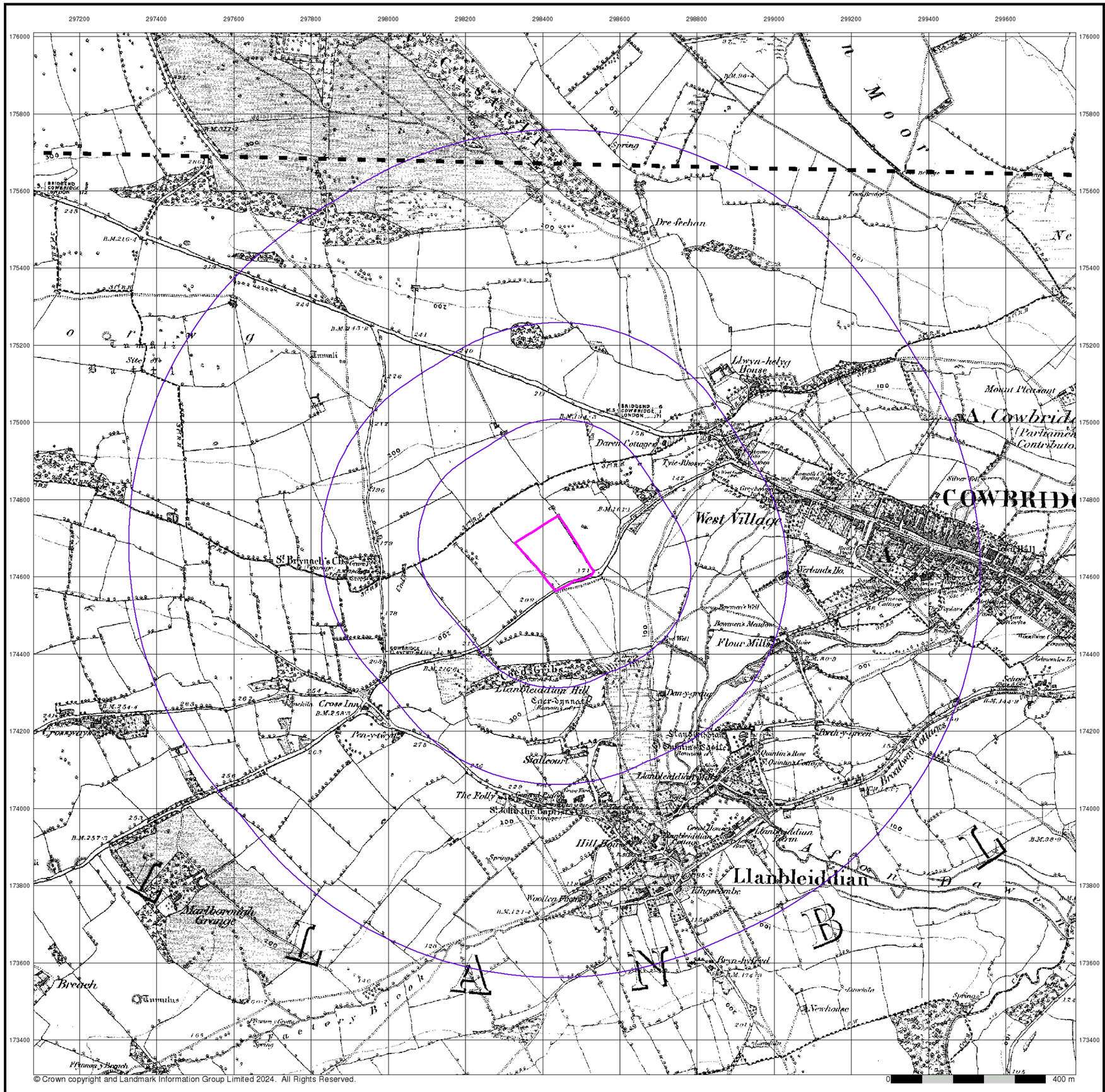
Order Details

Order Number: 337639253_1_1
Customer Ref: 31793
National Grid Reference: 298430, 174660
Slice: A
Site Area (Ha): 2.05
Search Buffer (m): 1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Glamorganshire

Published 1885

Source map scale - 1:10,560

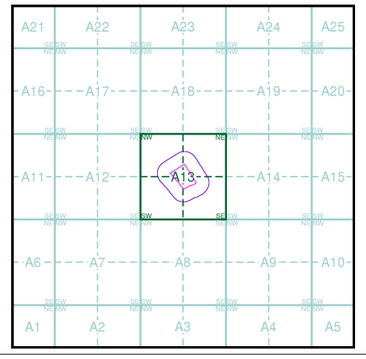
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

04100
1885
1:10,560

04500
1885
1:10,560

Historical Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

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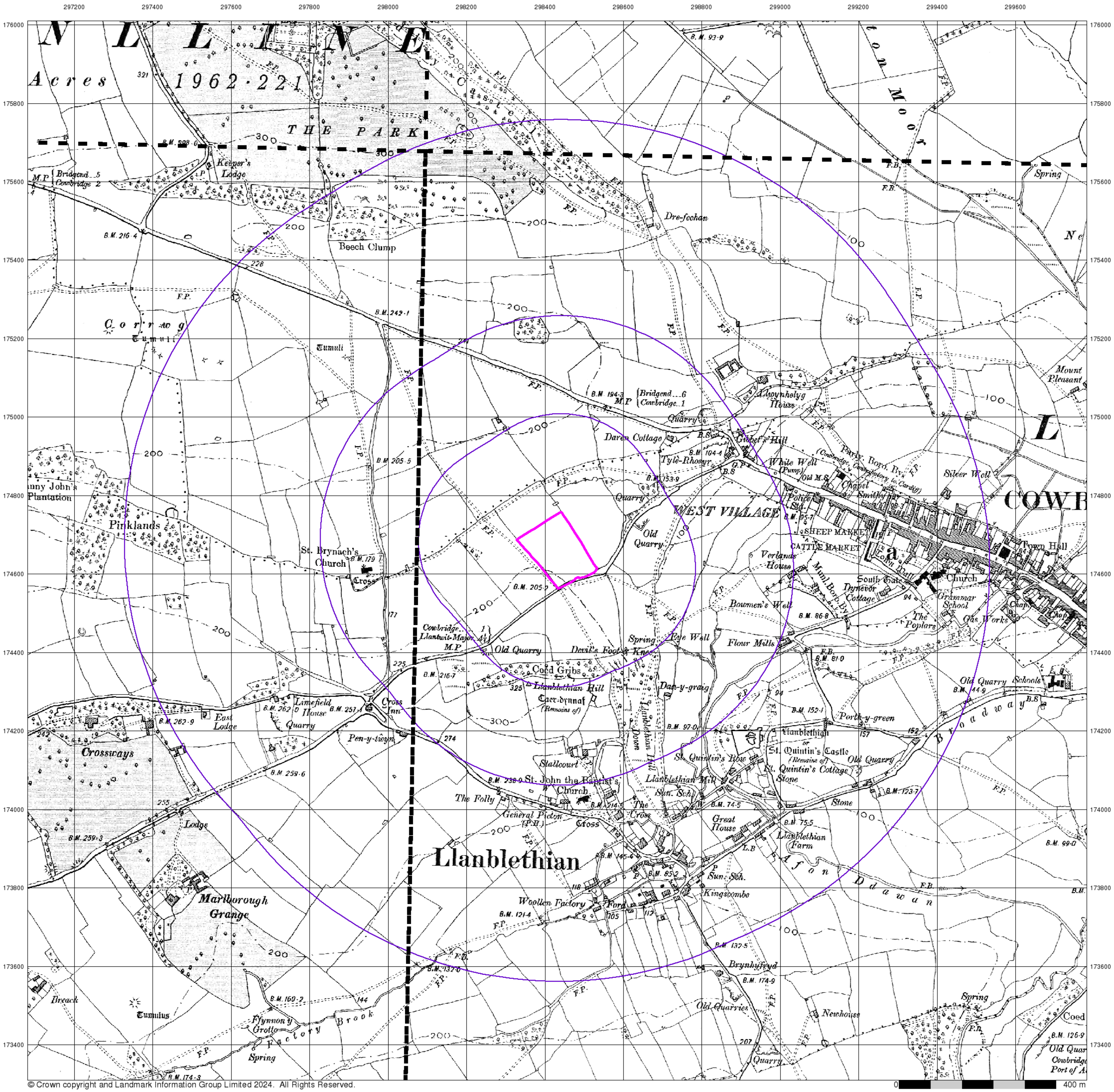

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Hydrock

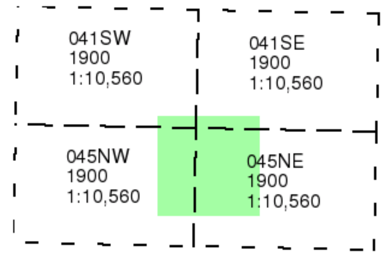
Glamorganshire

Published 1900

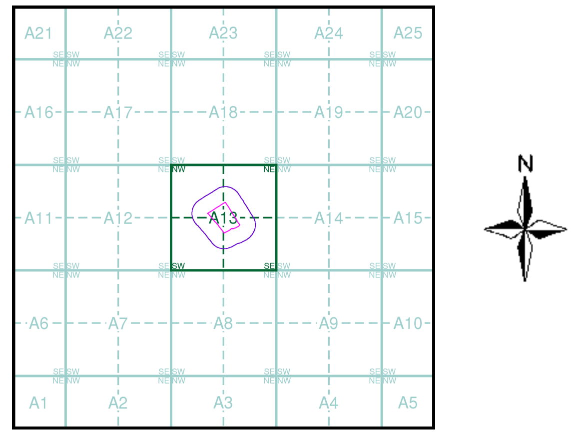
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

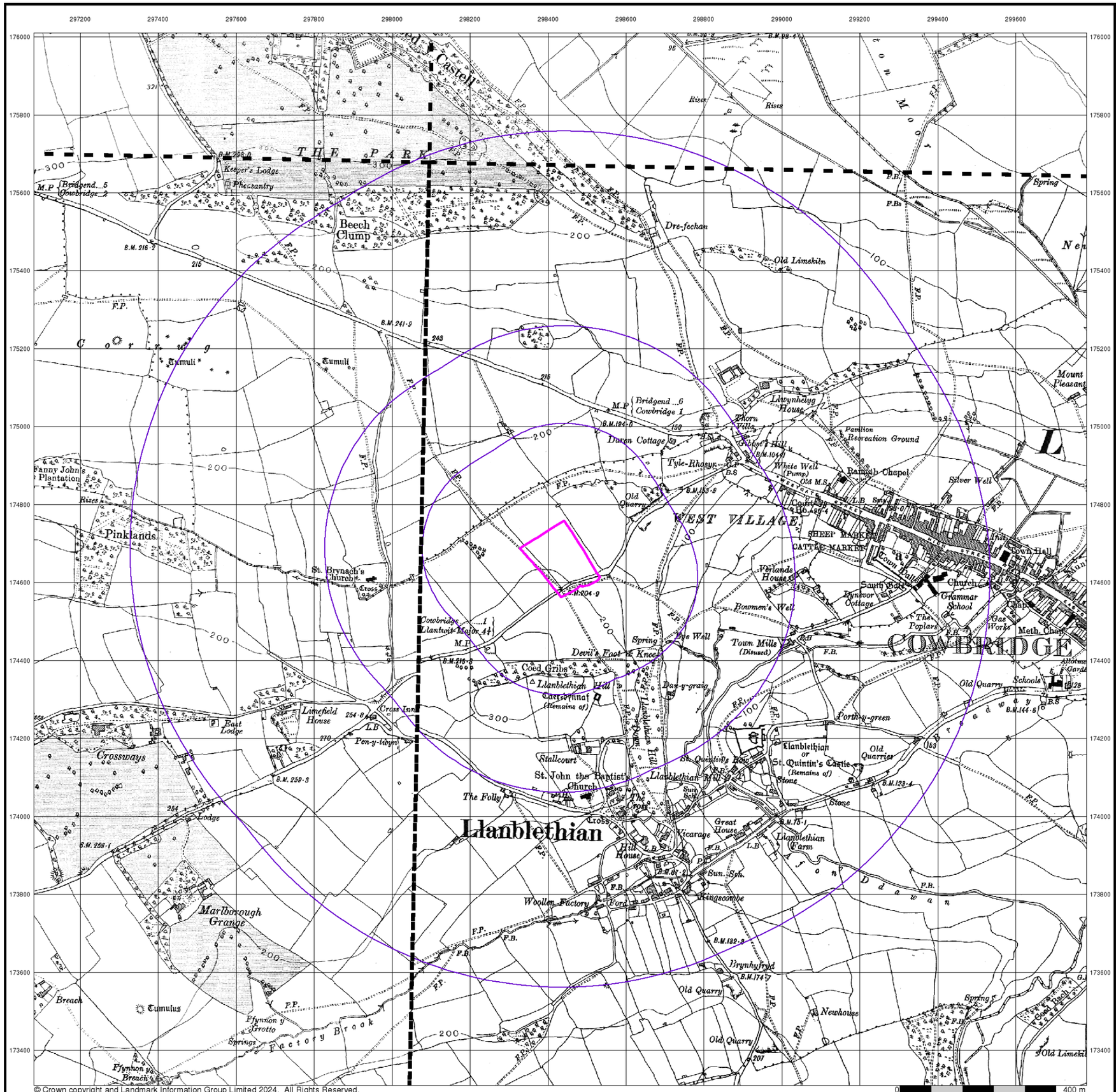
Order Number: 337639253_1_1
Customer Ref: 31793
National Grid Reference: 298430, 174660
Slice: A
Site Area (Ha): 2.05
Search Buffer (m): 1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Glamorganshire

Published 1921

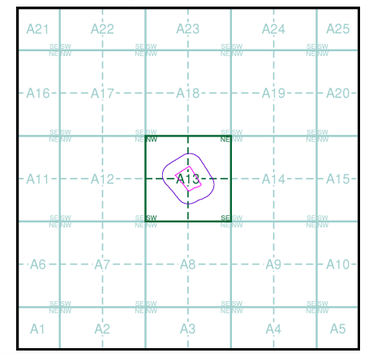
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

041SW 1921 1:10,560	041SE 1921 1:10,560
045NW 1921 1:10,560	045NE 1921 1:10,560

Historical Map - Slice A



Order Details

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Glamorganshire

Published 1921

Source map scale - 1:10,560

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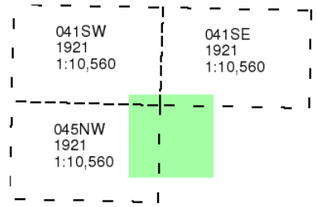
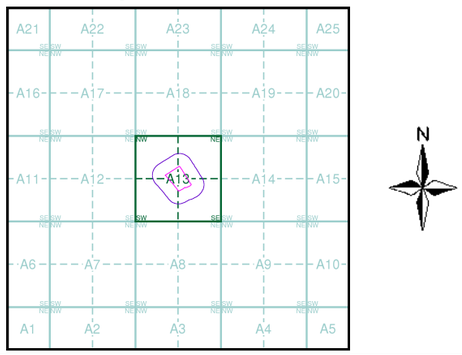
Map Name(s) and Date(s)



Historical Map - Slice A



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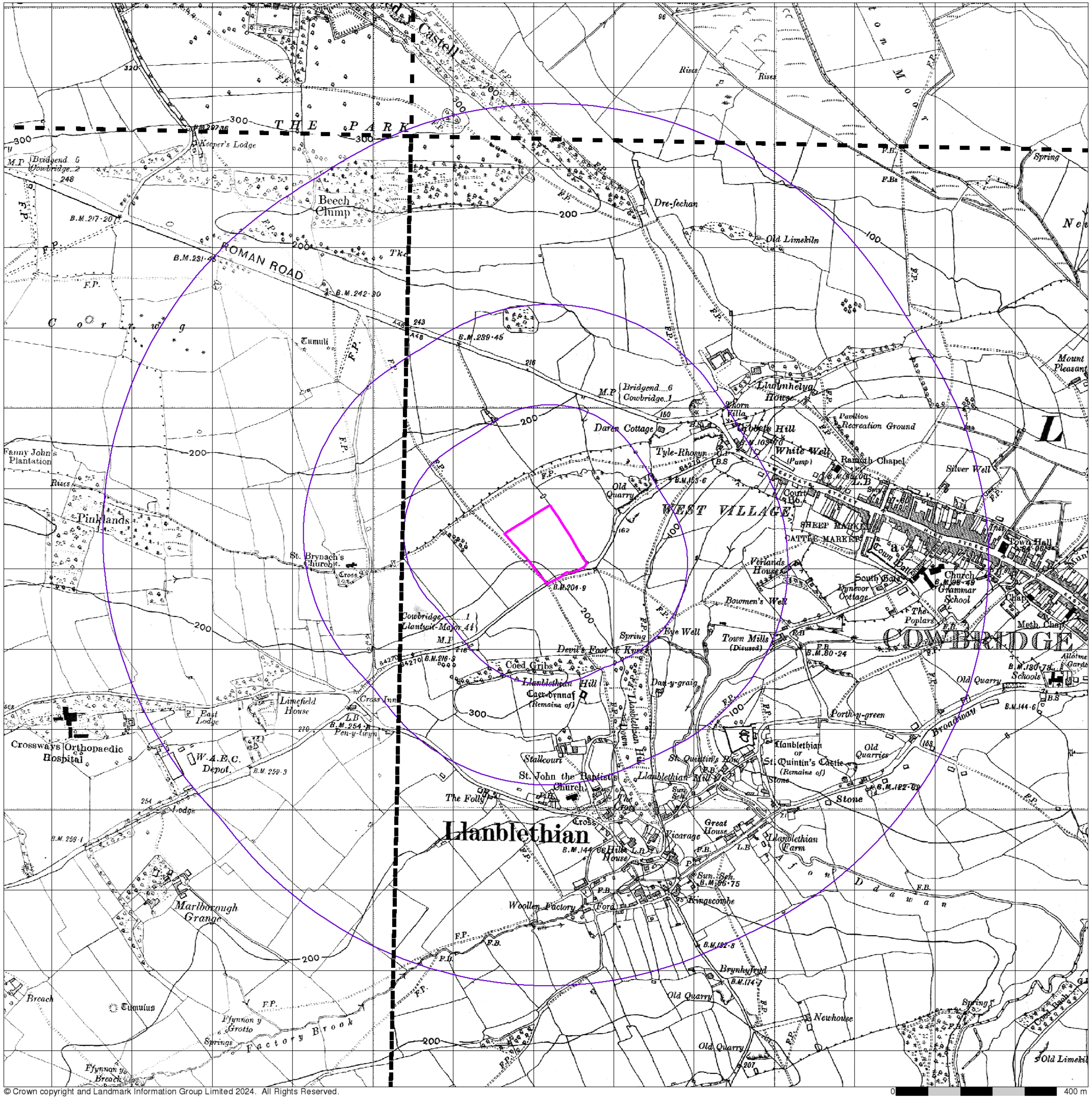

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Hydrock

Glamorganshire

Published 1938 - 1951

Source map scale - 1:10,560

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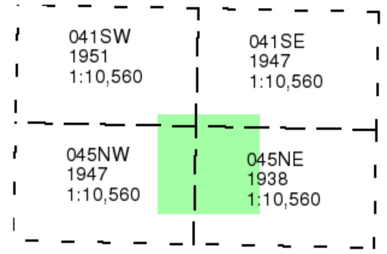
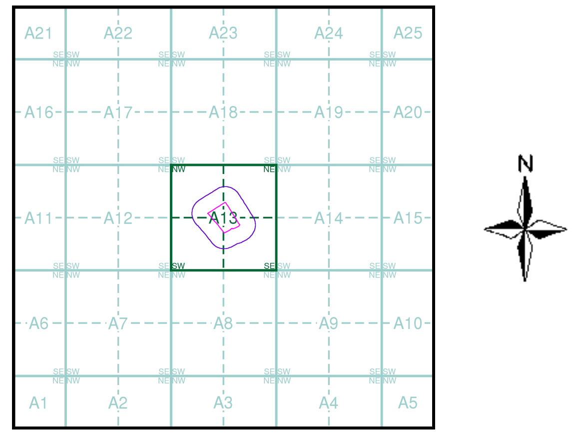


Historical Map - Slice A



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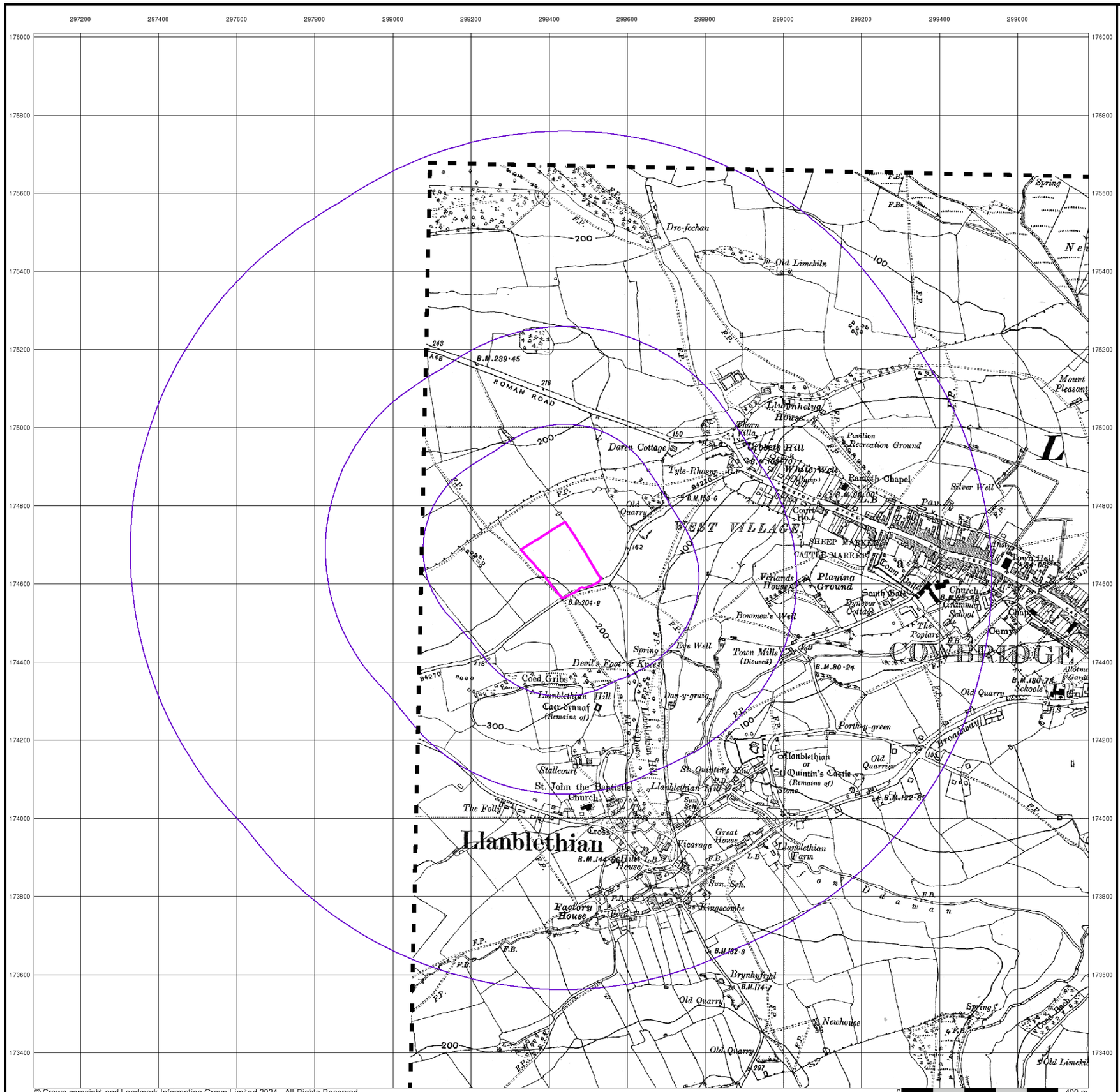

Hydrock

Glamorganshire

Published 1947

Source map scale - 1:10,560

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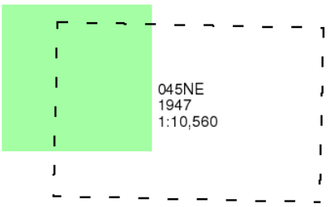
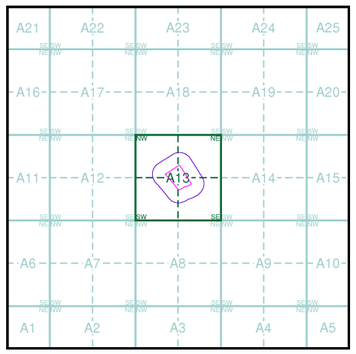
Map Name(s) and Date(s)



Historical Map - Slice A



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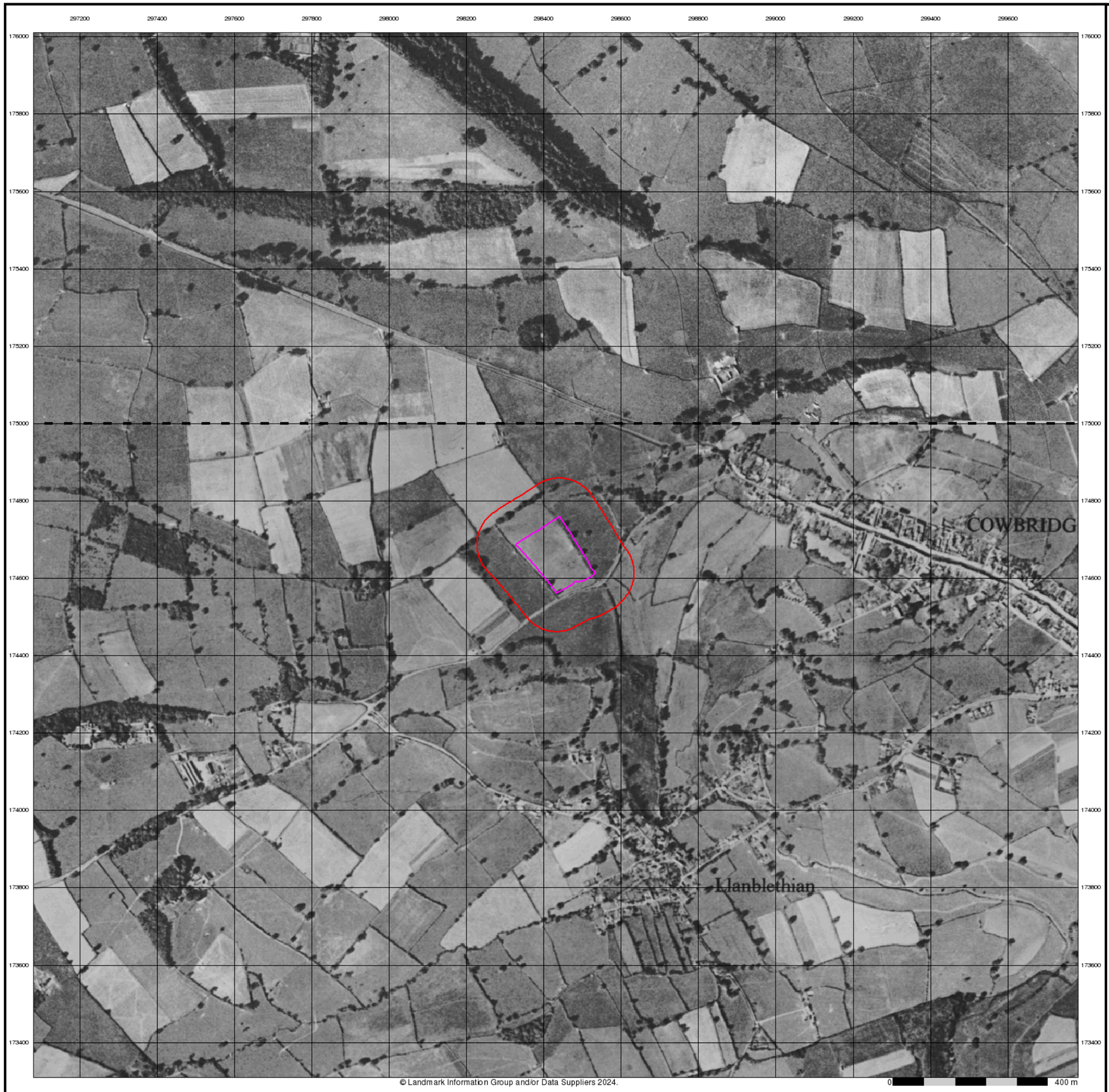


Hydrock

Historical Aerial Photography

Published 1947

Source map scale - 1:10,560

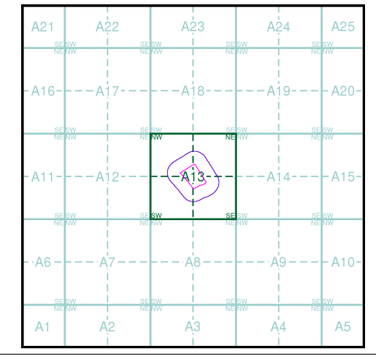
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

Map Name(s) and Date(s)

SS97NE
1947
1:10,560

SS97SE
1947
1:10,560

Historical Aerial Photography - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
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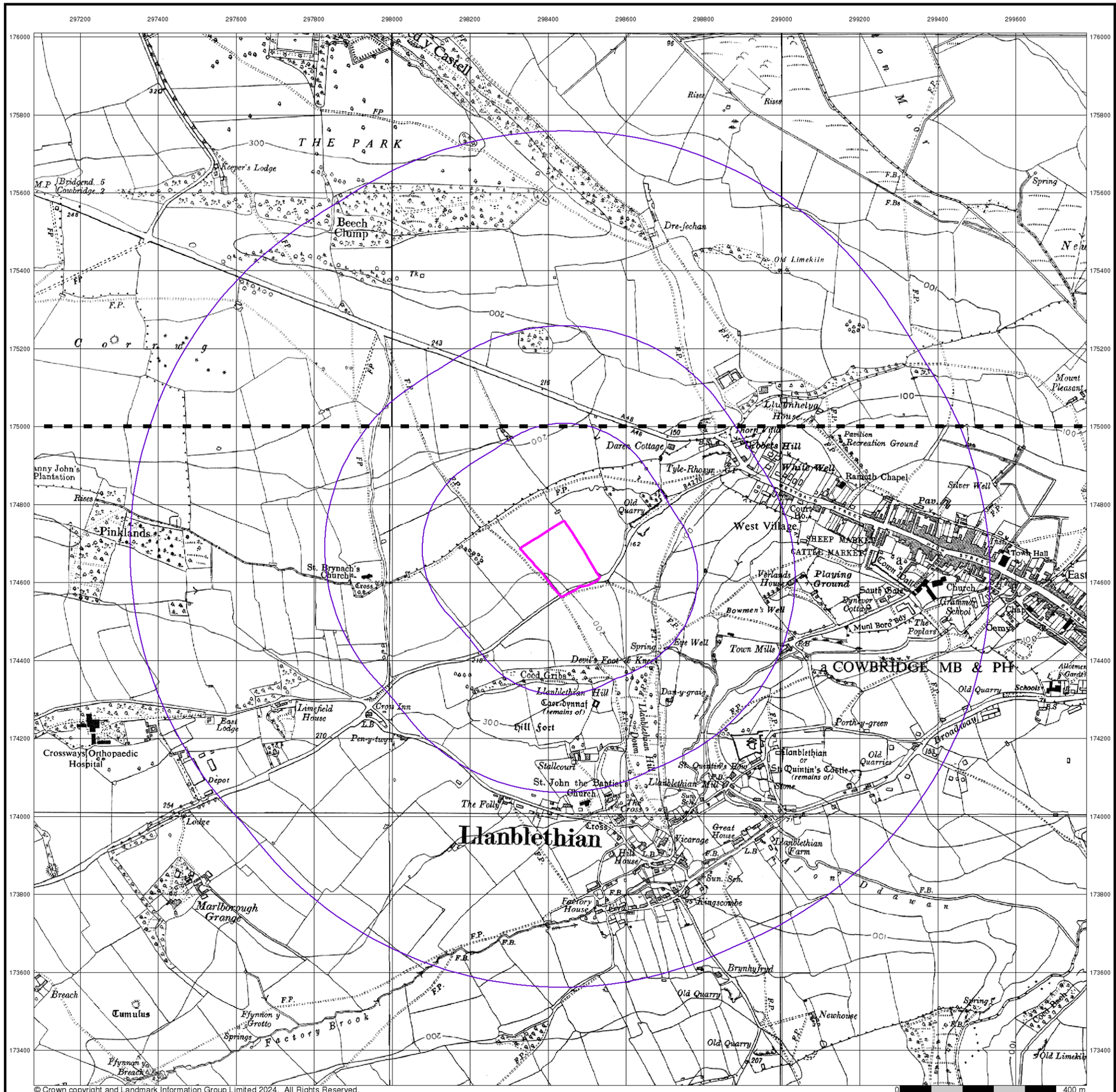


Hydrock

Ordnance Survey Plan

Published 1964

Source map scale - 1:10,000

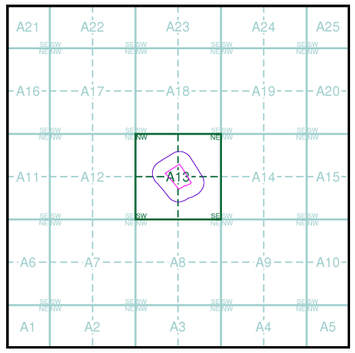
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SS97NE
1964
1:10,560

SS97SE
1964
1:10,560

Historical Map - Slice A



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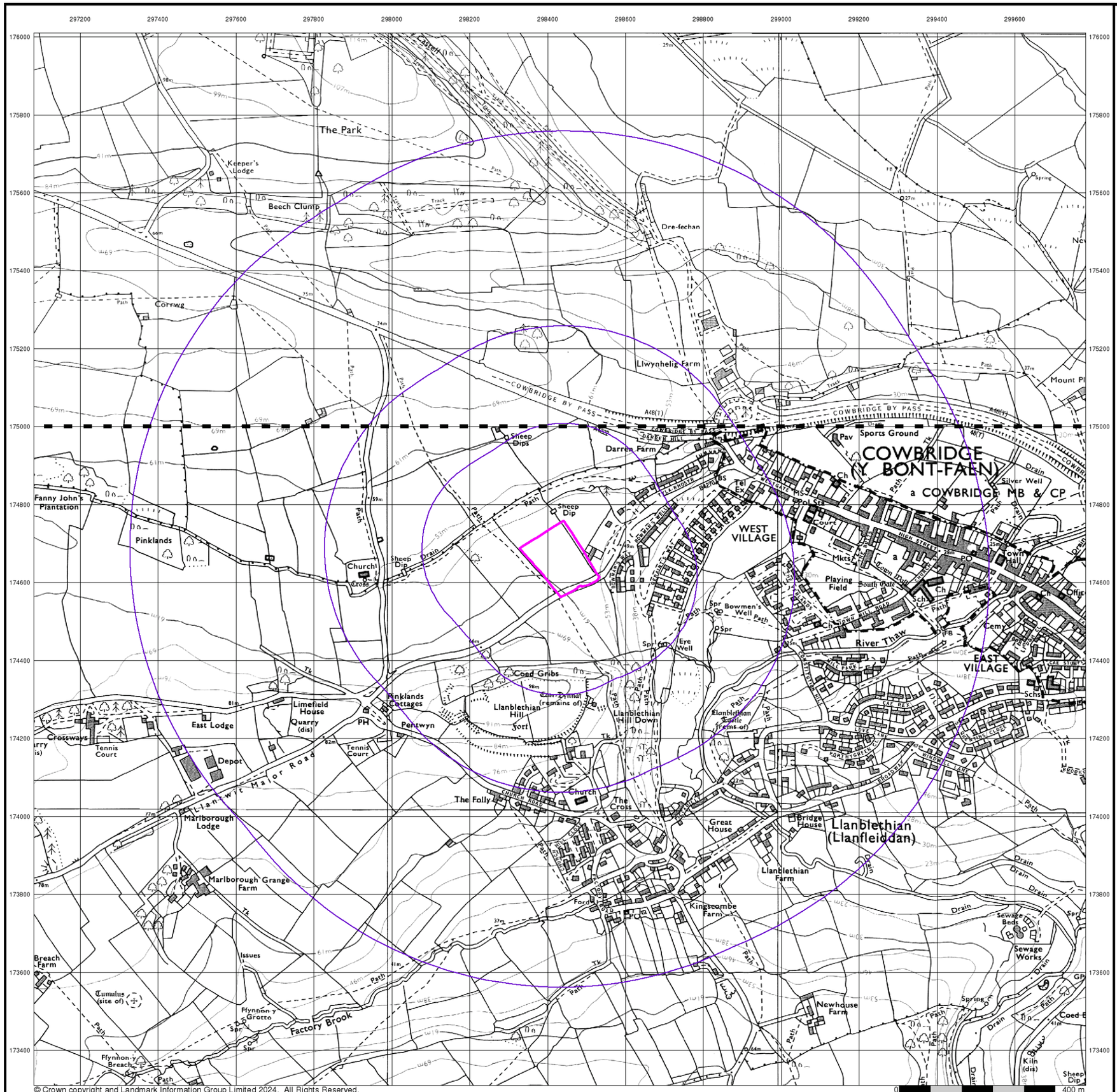

Hydrock

Ordnance Survey Plan

Published 1972 - 1973

Source map scale - 1:10,000

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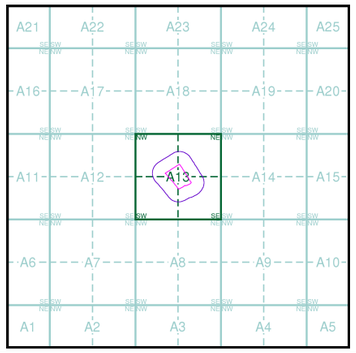
Map Name(s) and Date(s)

SS97NE
1973
1:10,000

SS97SE
1972
1:10,000

Historical Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

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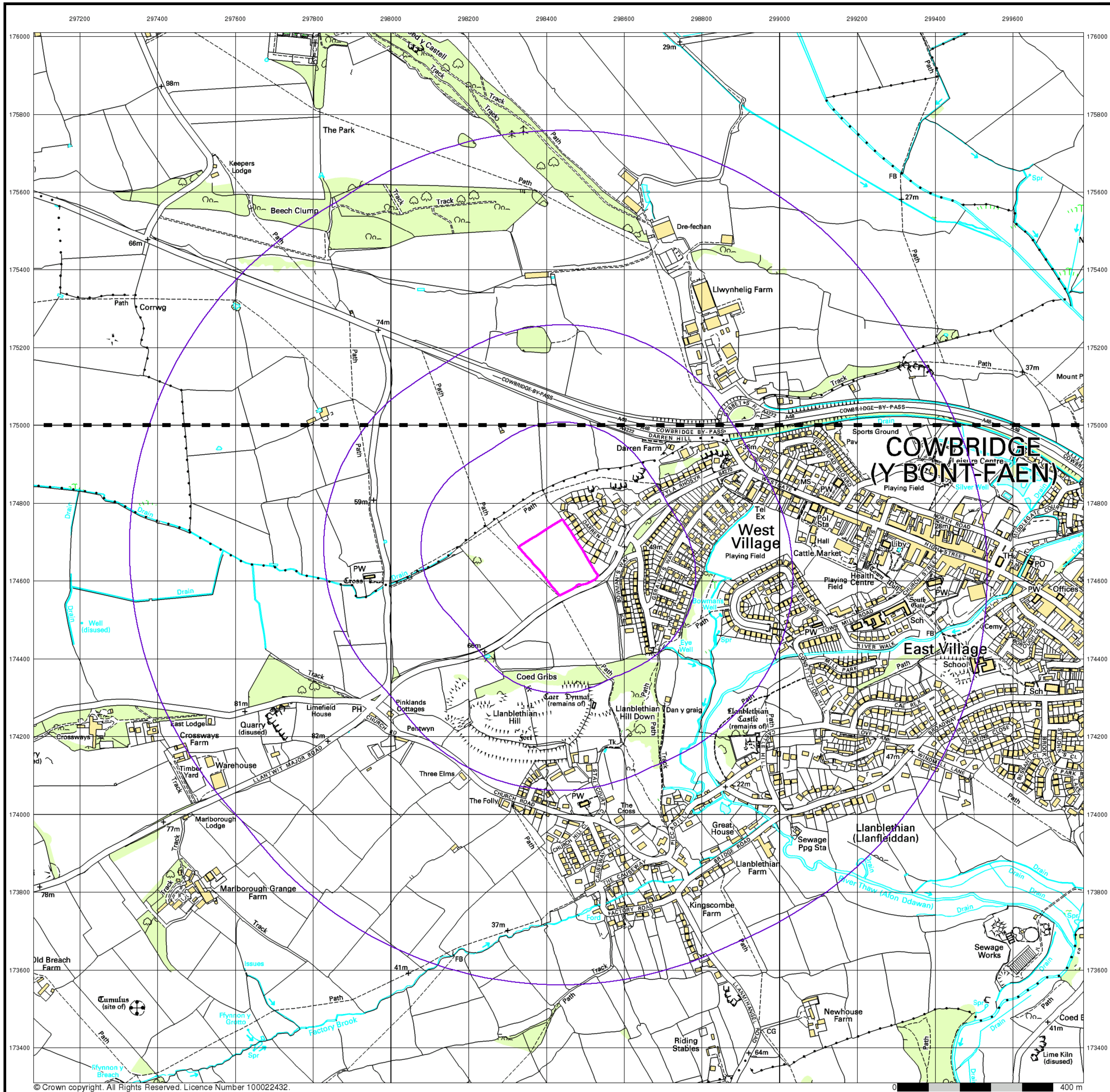

Hydrock

10k Raster Mapping

Published 1999

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS97NE
1999
1:10,000

SS97SE
1999
1:10,000

Historical Map - Slice A

A21	A22	A23	A24	A25
A16	A17	A18	A19	A20
A11	A12	A13	A14	A15
A6	A7	A8	A9	A10
A1	A2	A3	A4	A5

N

Order Details

Order Number:	337639253_1_1
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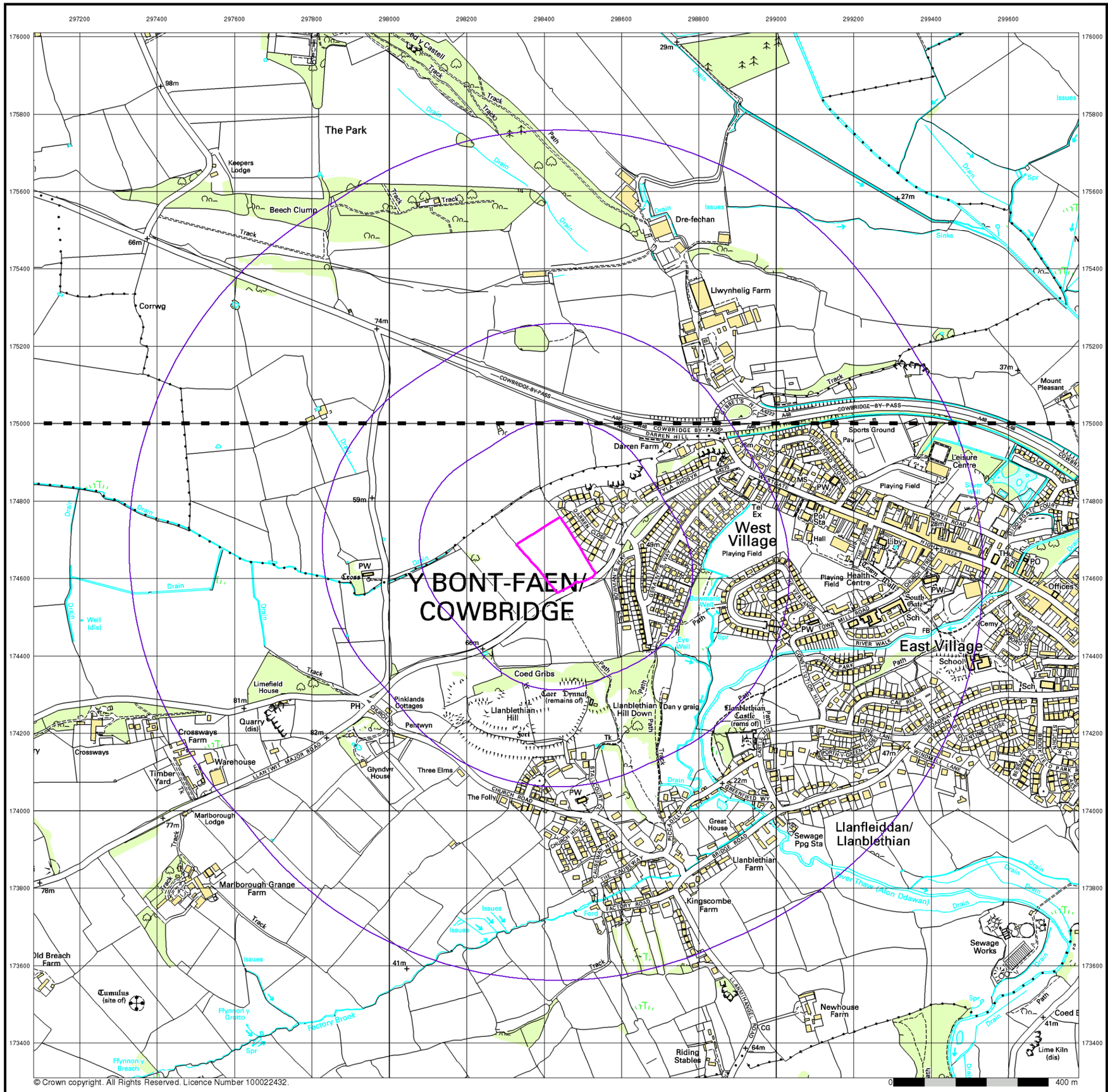


Hydrock

10k Raster Mapping

Published 2006

Source map scale - 1:10,000

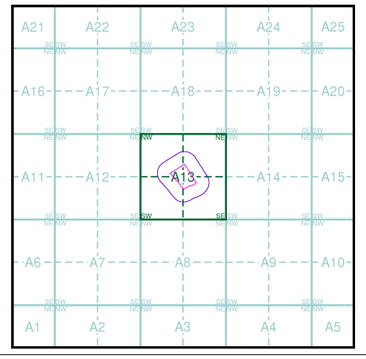
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS97NE
2006
1:10,000

SS97SE
2006
1:10,000

Historical Map - Slice A



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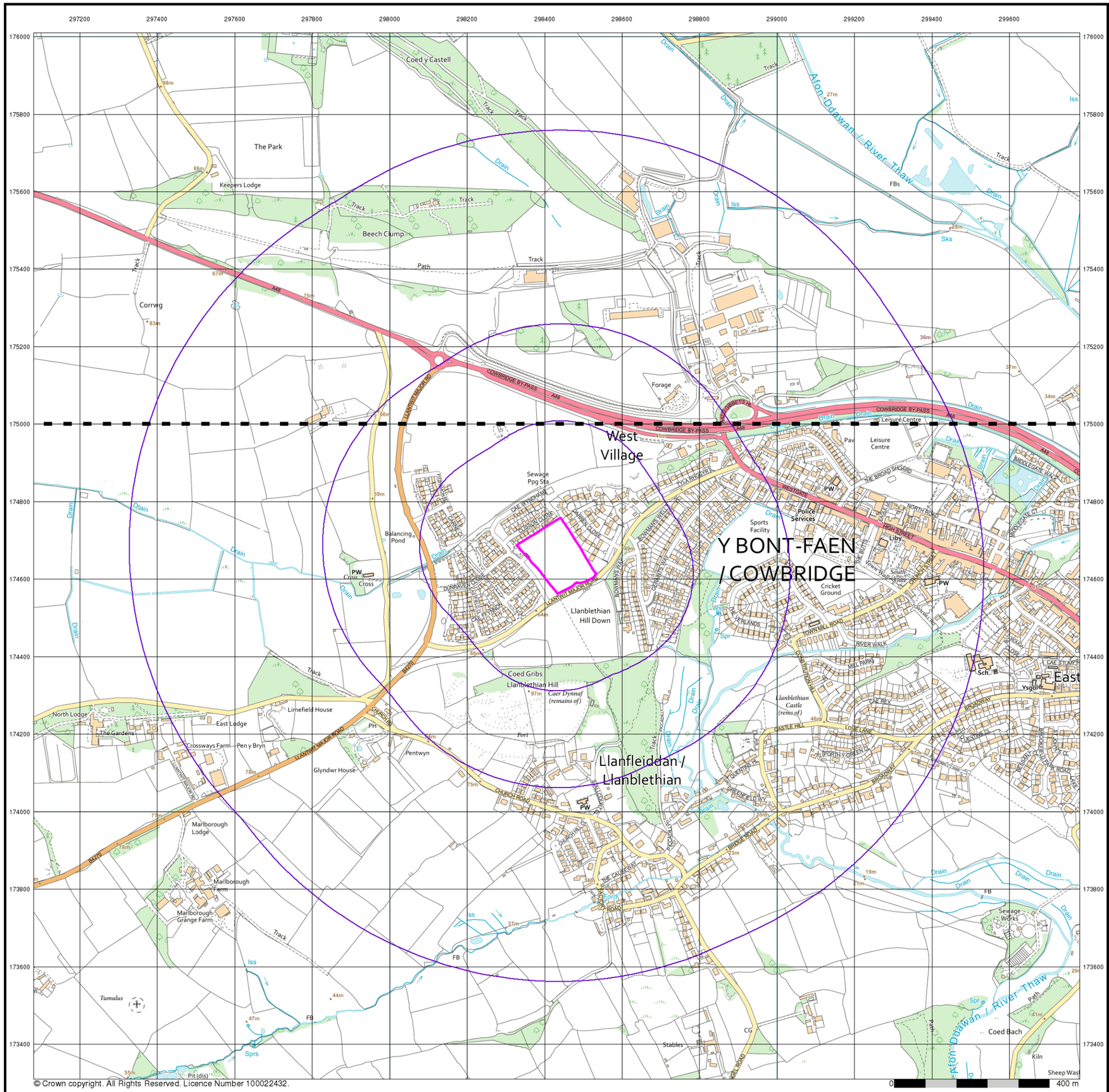


Hydrock

VectorMap Local

Published 2023

Source map scale - 1:10,000

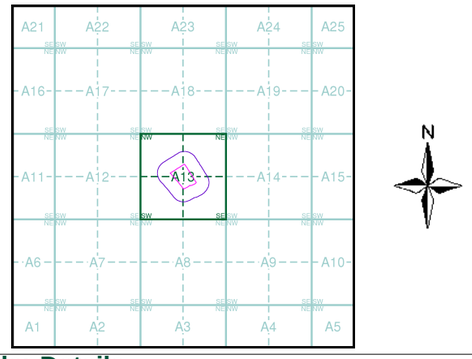
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SS97NE 2023 Variable

SS97SE 2023 Variable

Historical Map - Slice A



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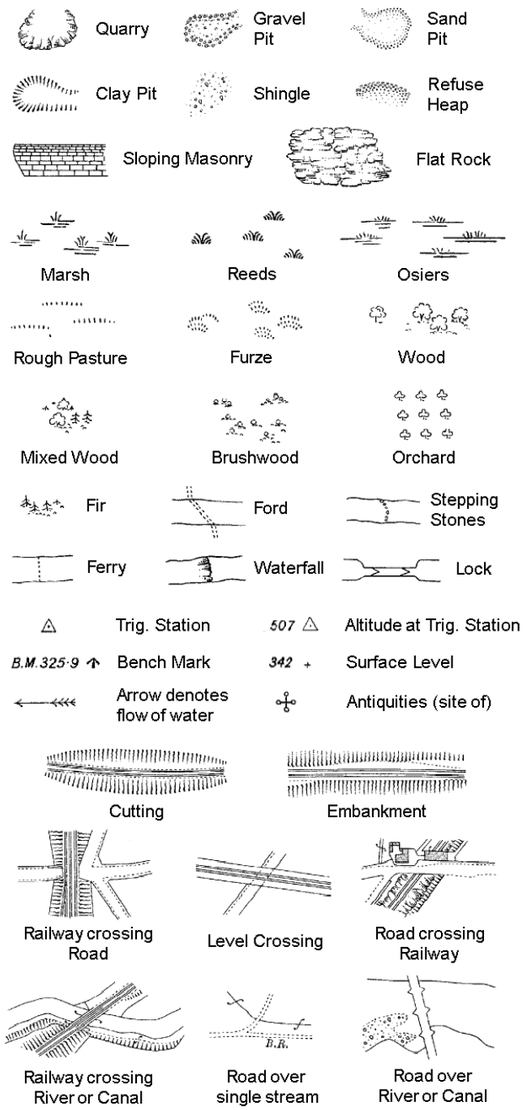
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

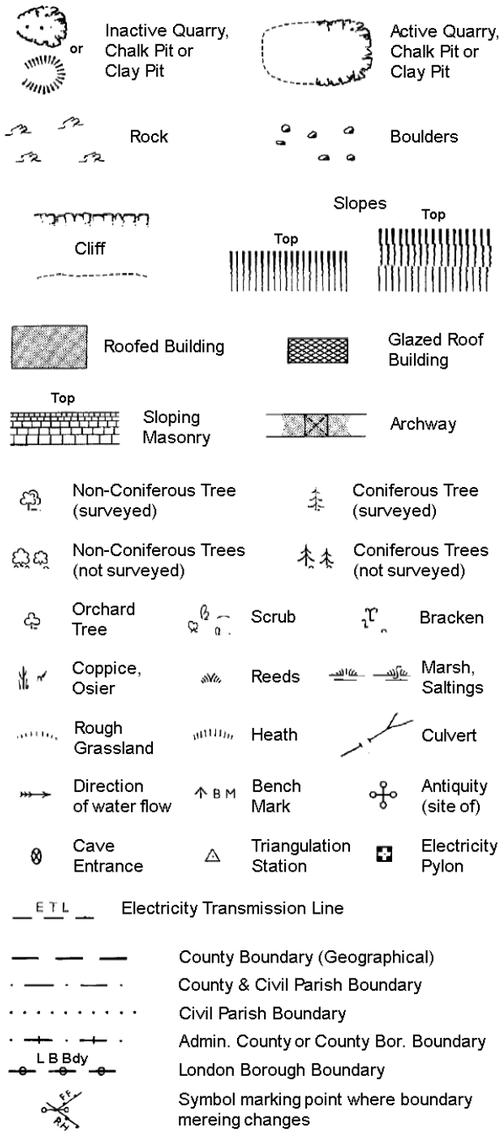
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

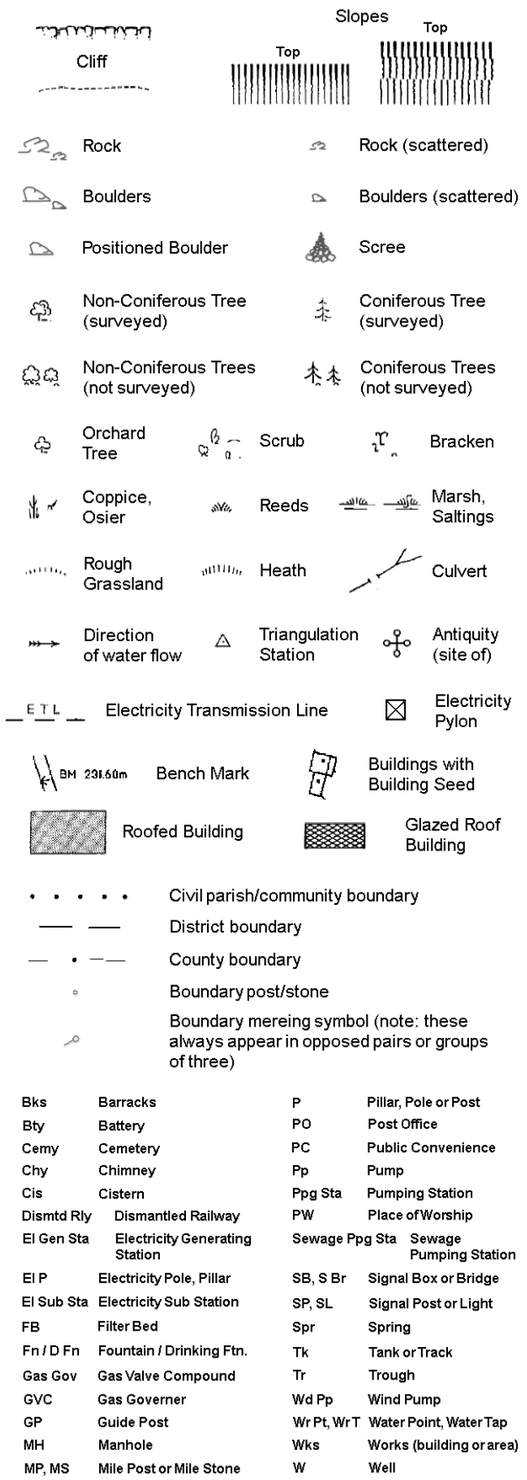
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

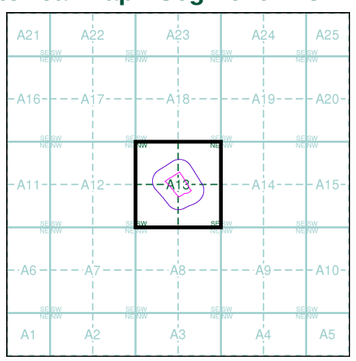
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1877	2
Glamorganshire	1:2,500	1899	3
Glamorganshire	1:2,500	1919	4
Ordnance Survey Plan	1:2,500	1971	5
Additional SIMs	1:2,500	1978	6
Additional SIMs	1:2,500	1986	7
Additional SIMs	1:2,500	1987	8
Additional SIMs	1:2,500	1987	9
Large-Scale National Grid Data	1:2,500	1993	10
Additional SIMs	1:2,500	1993	11
Historical Aerial Photography	1:2,500	2000	12

Historical Map - Segment A13



Order Details

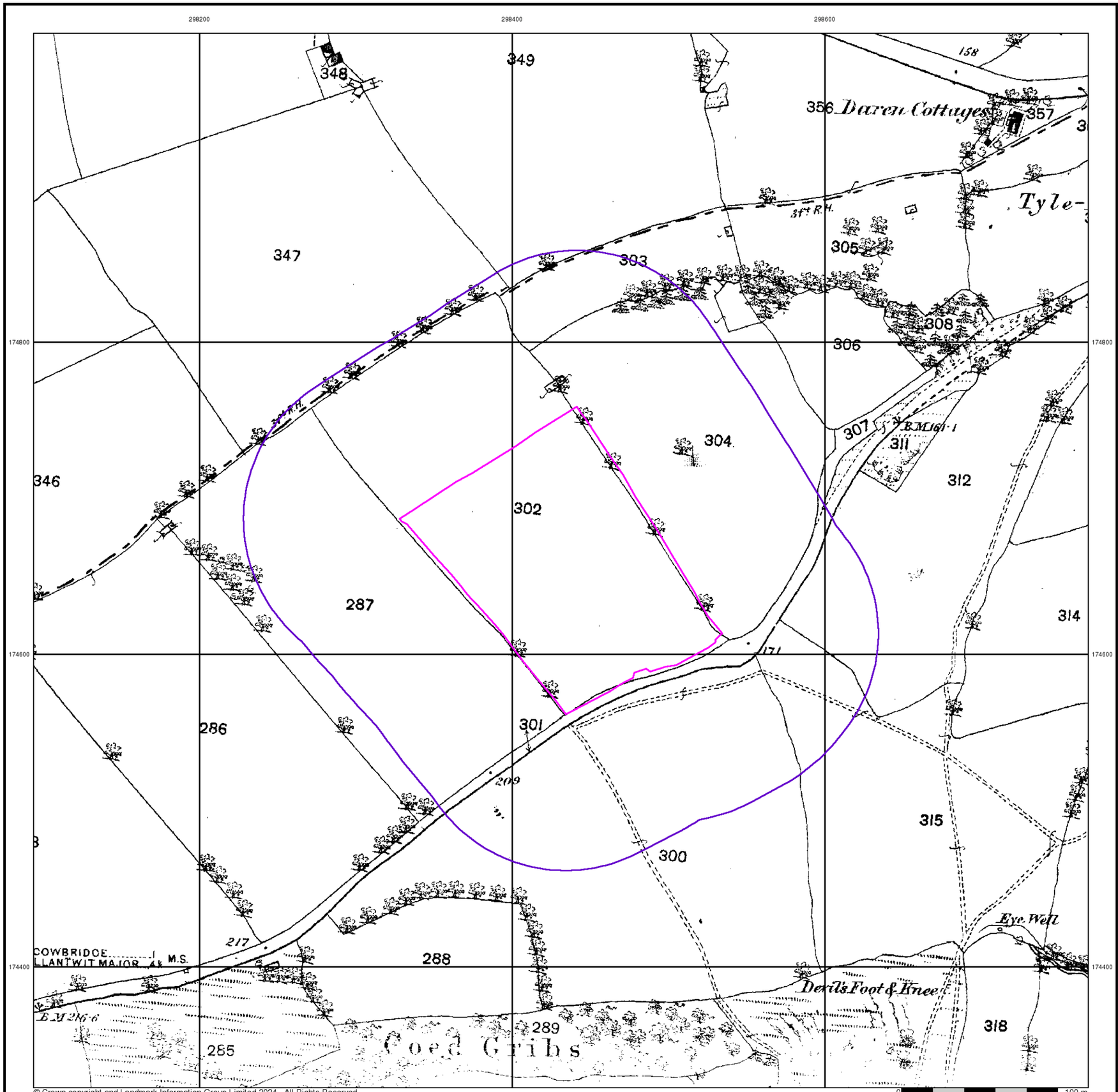
Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

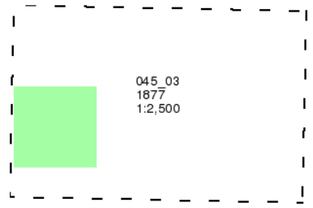
Glamorganshire

Published 1877

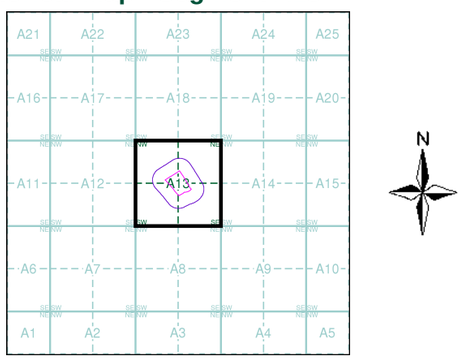
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

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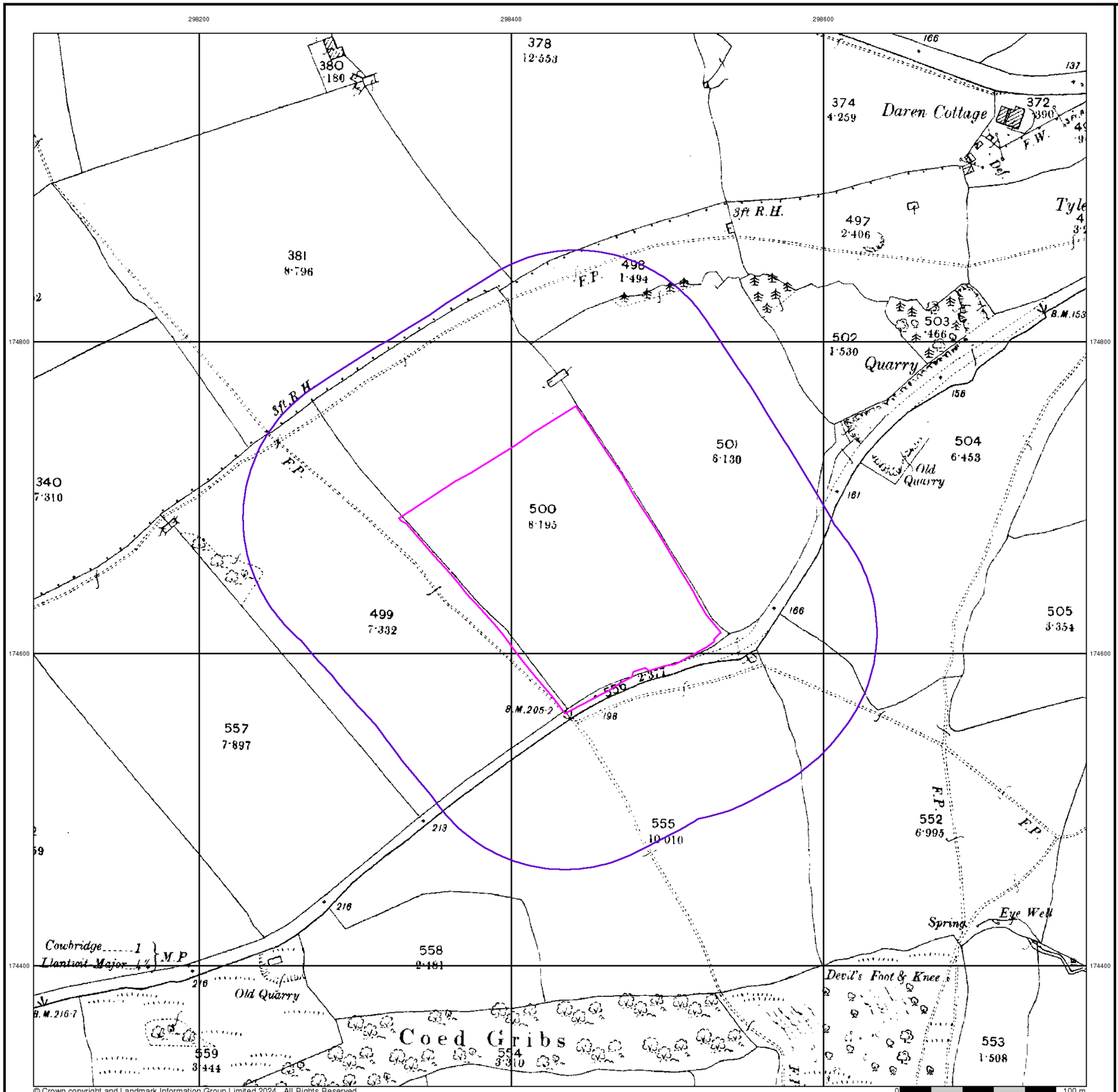


Hydrock

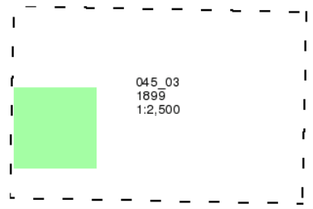
Glamorganshire

Published 1899

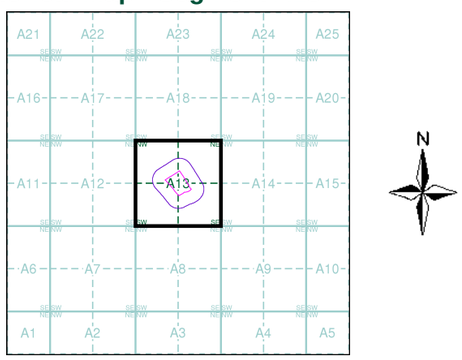
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

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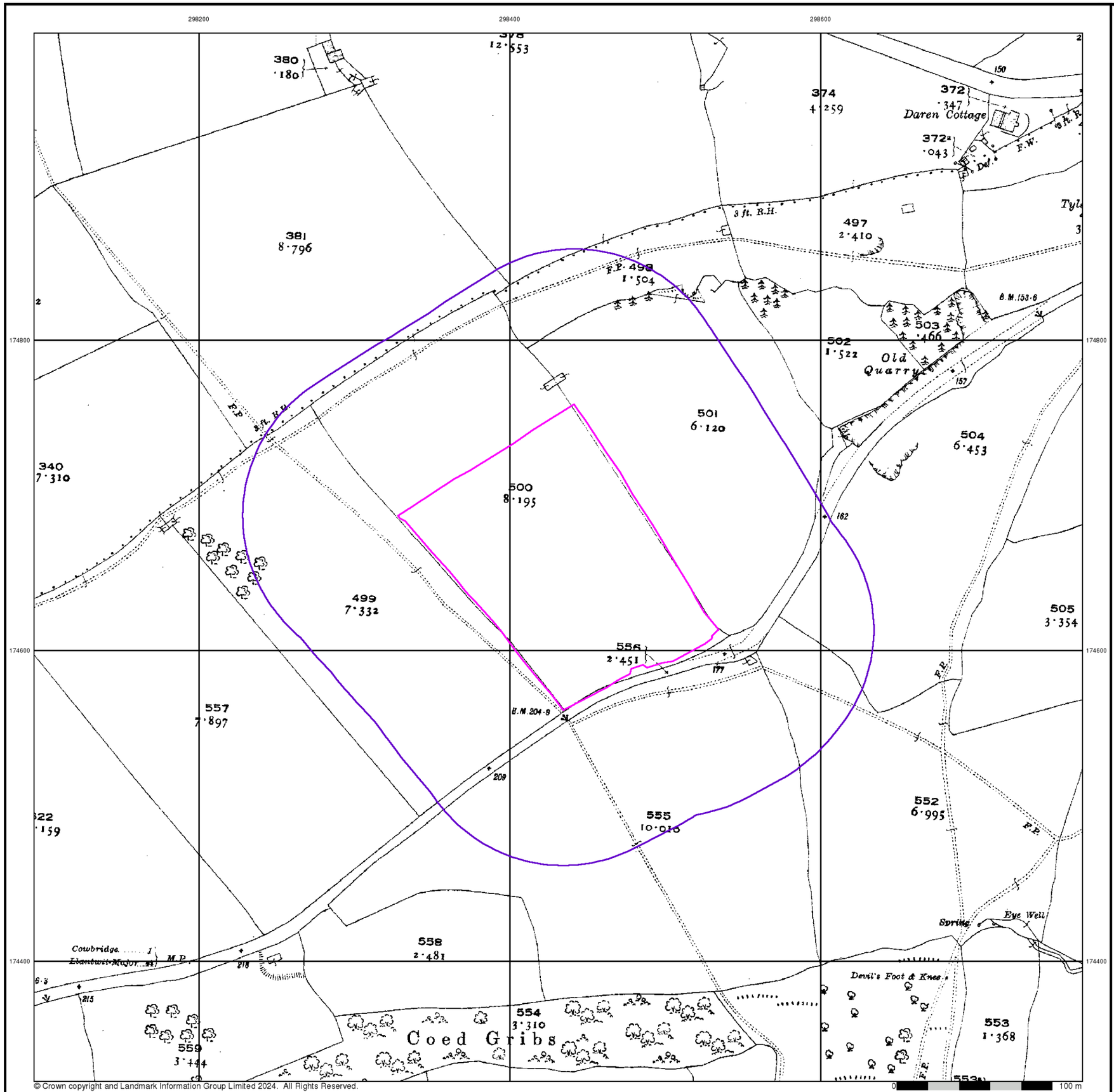


Hydrock

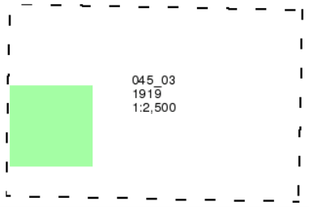
Glamorganshire

Published 1919

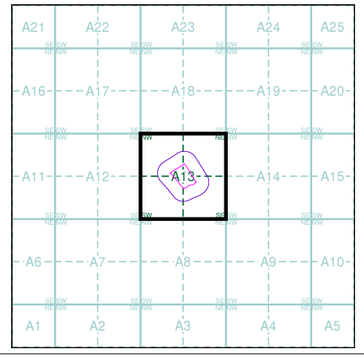
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
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Site Details

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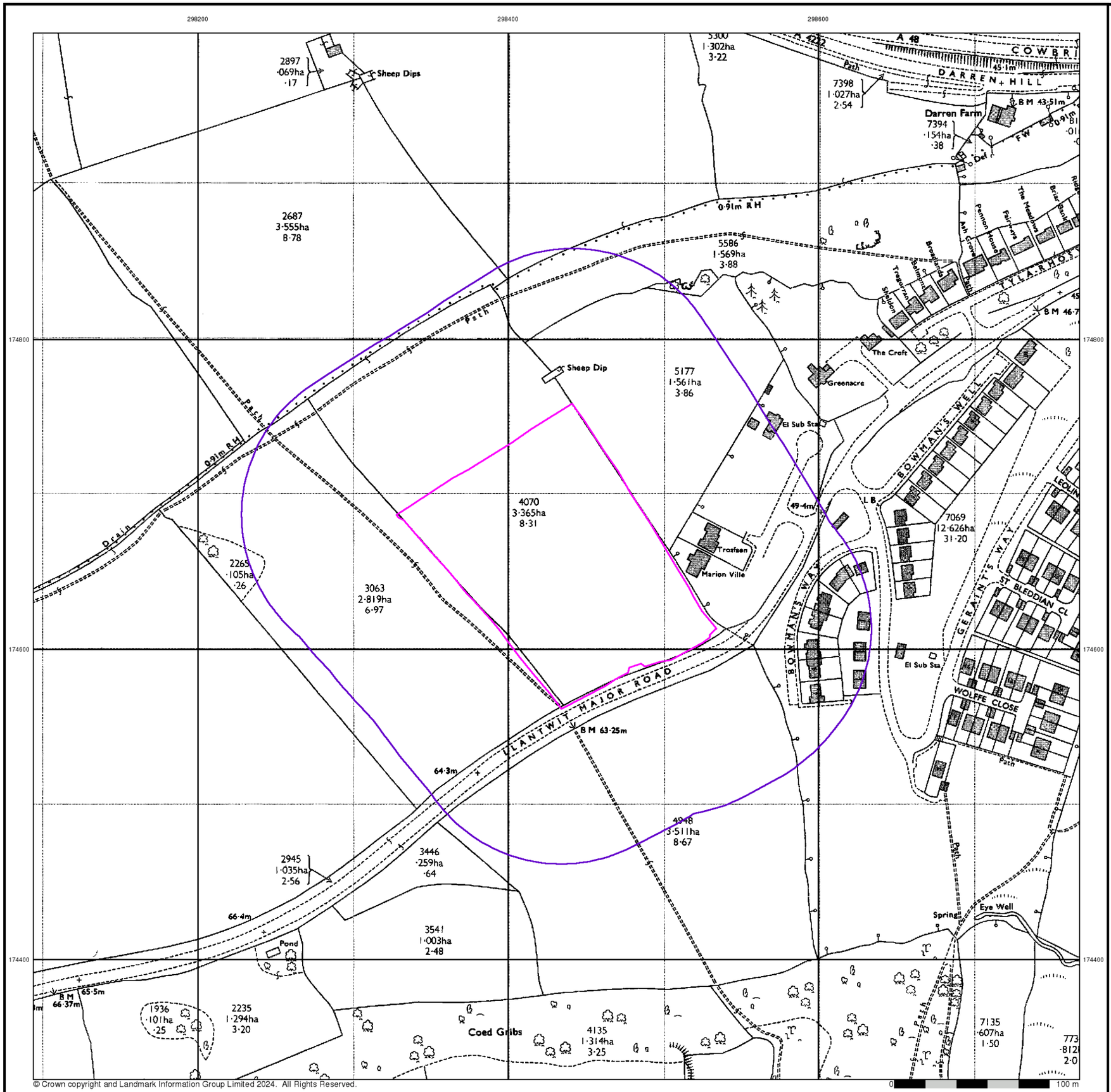


Hydrock

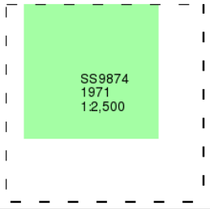
Ordnance Survey Plan

Published 1971

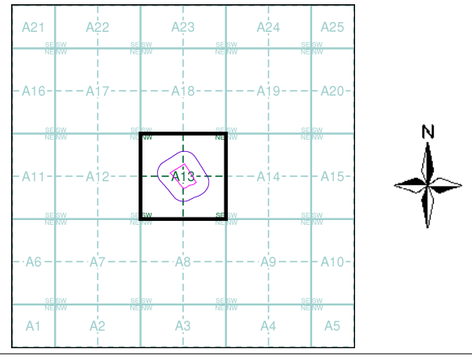
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
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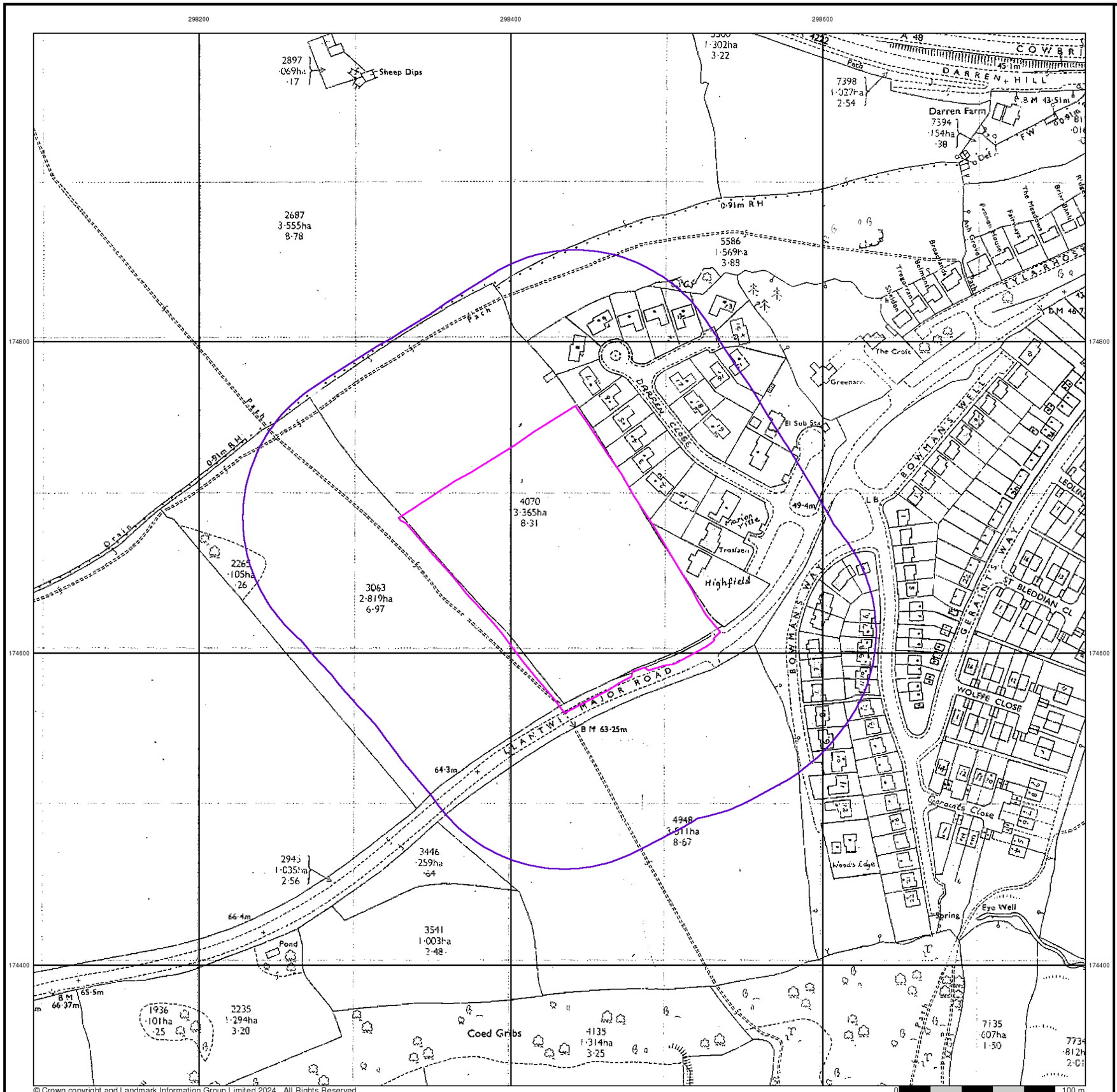


Hydrock

Additional SIMs

Published 1978

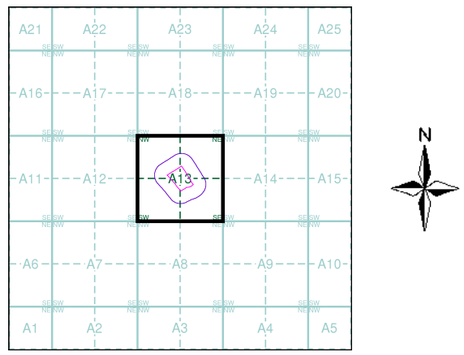
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SS9874
1978
1:2,500

Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
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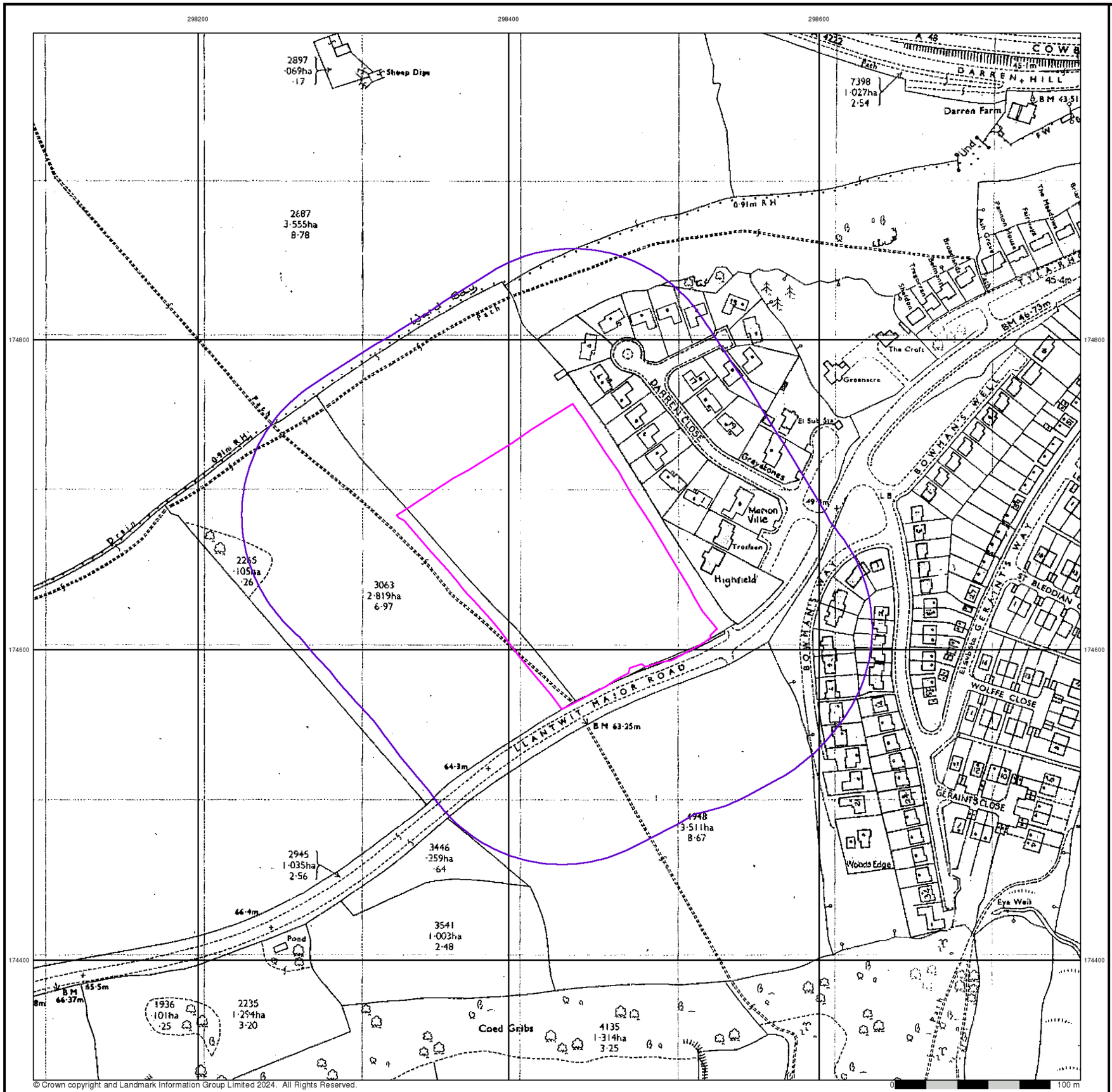


Hydrock

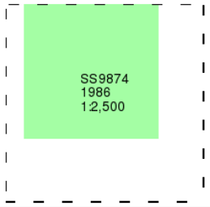
Additional SIMs

Published 1986

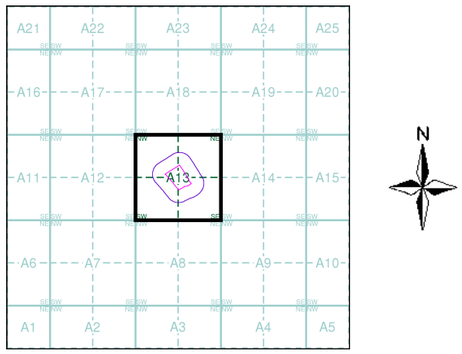
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

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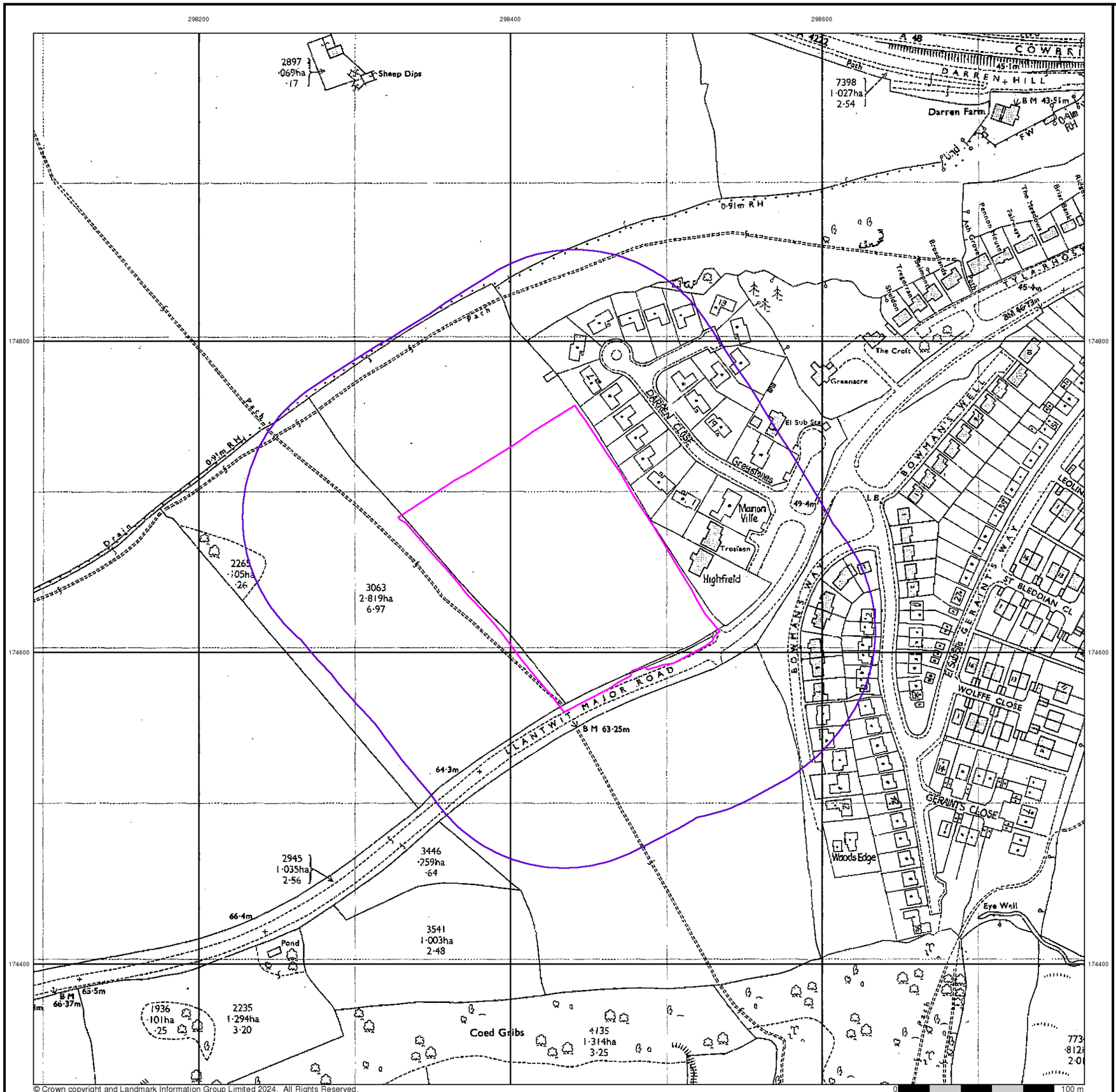
Web: www.envirocheck.co.uk



Hydrock

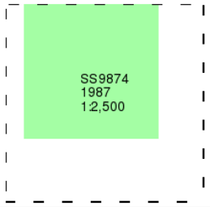
Additional SIMs

Published 1987

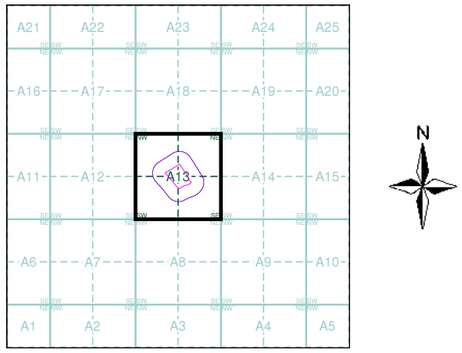
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
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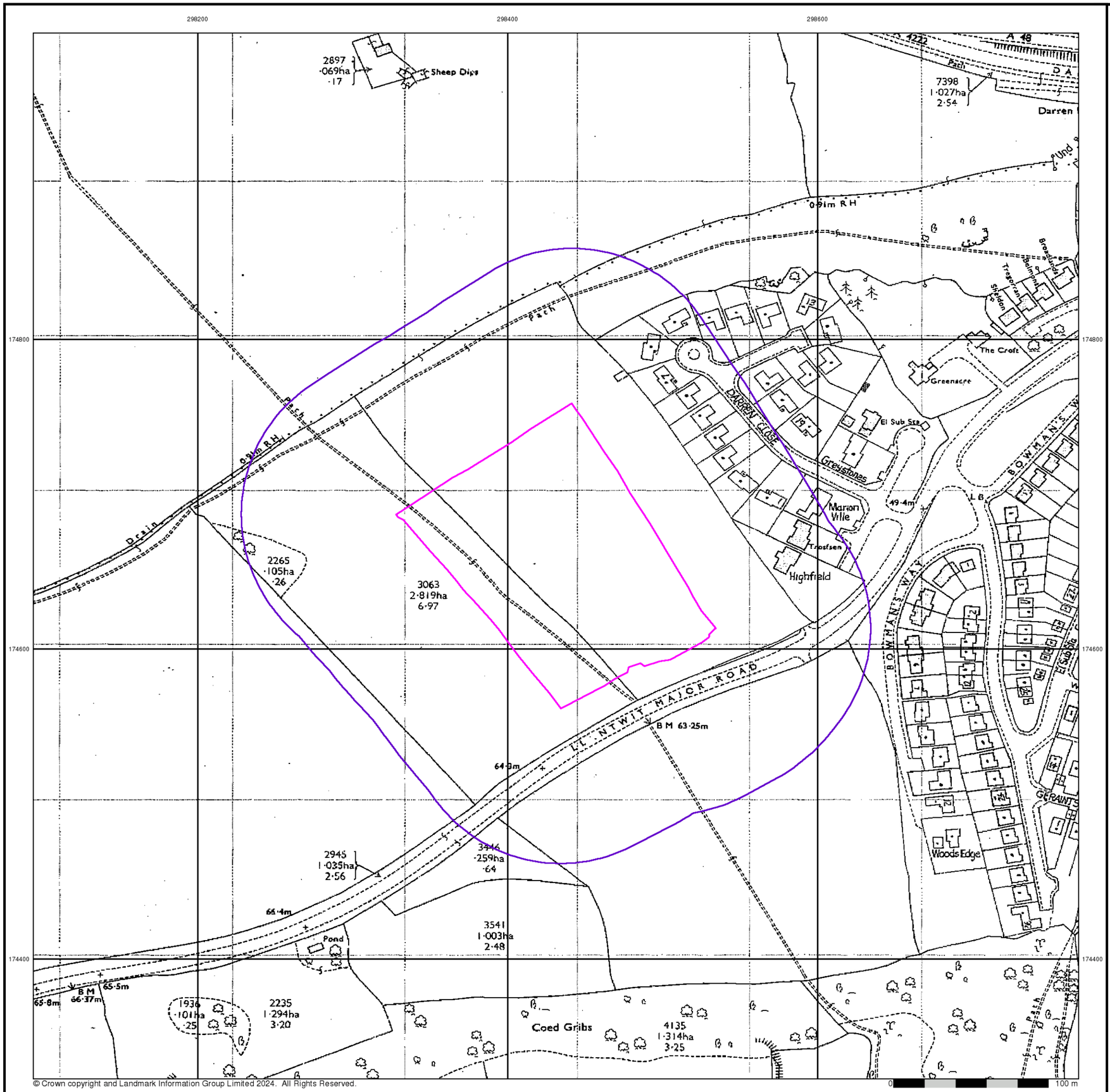


Hydrock

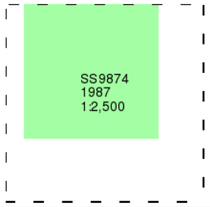
Additional SIMs

Published 1987

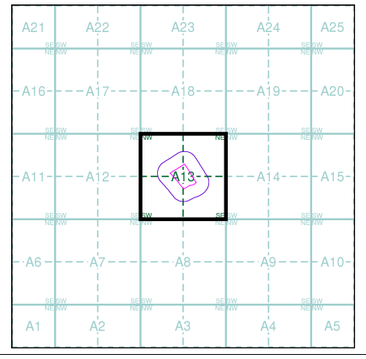
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

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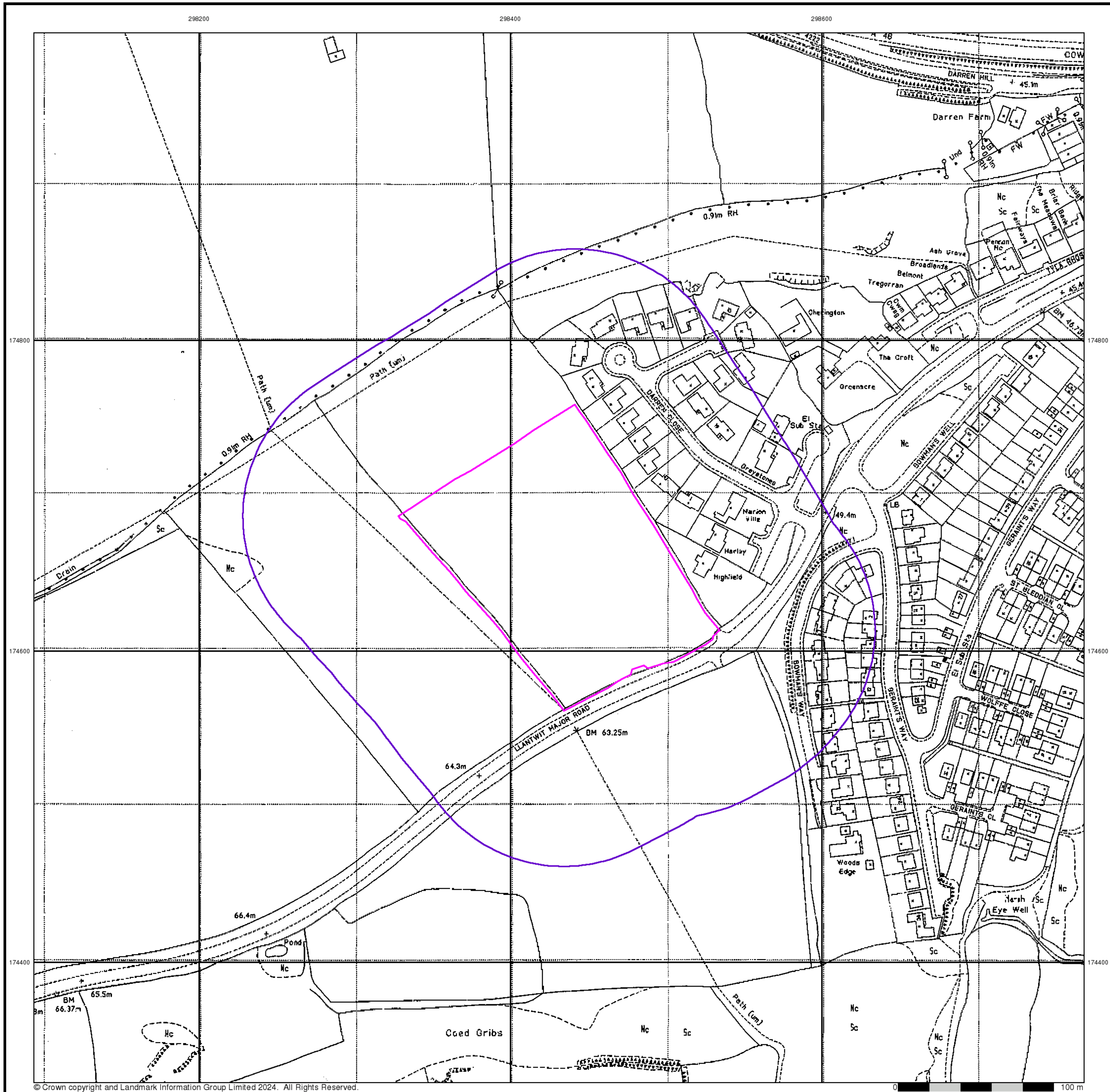


Hydrock

Large-Scale National Grid Data

Published 1993

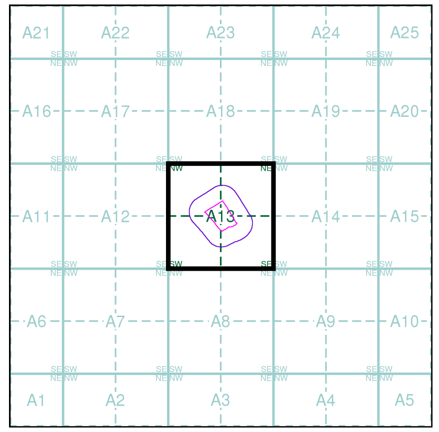
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SS9874
1993
1:2,500

Historical Map - Segment A13



N

Order Details

Order Number: 337639253_1_1
Customer Ref: 31793
National Grid Reference: 298430, 174660
Slice: A
Site Area (Ha): 2.05
Search Buffer (m): 100

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

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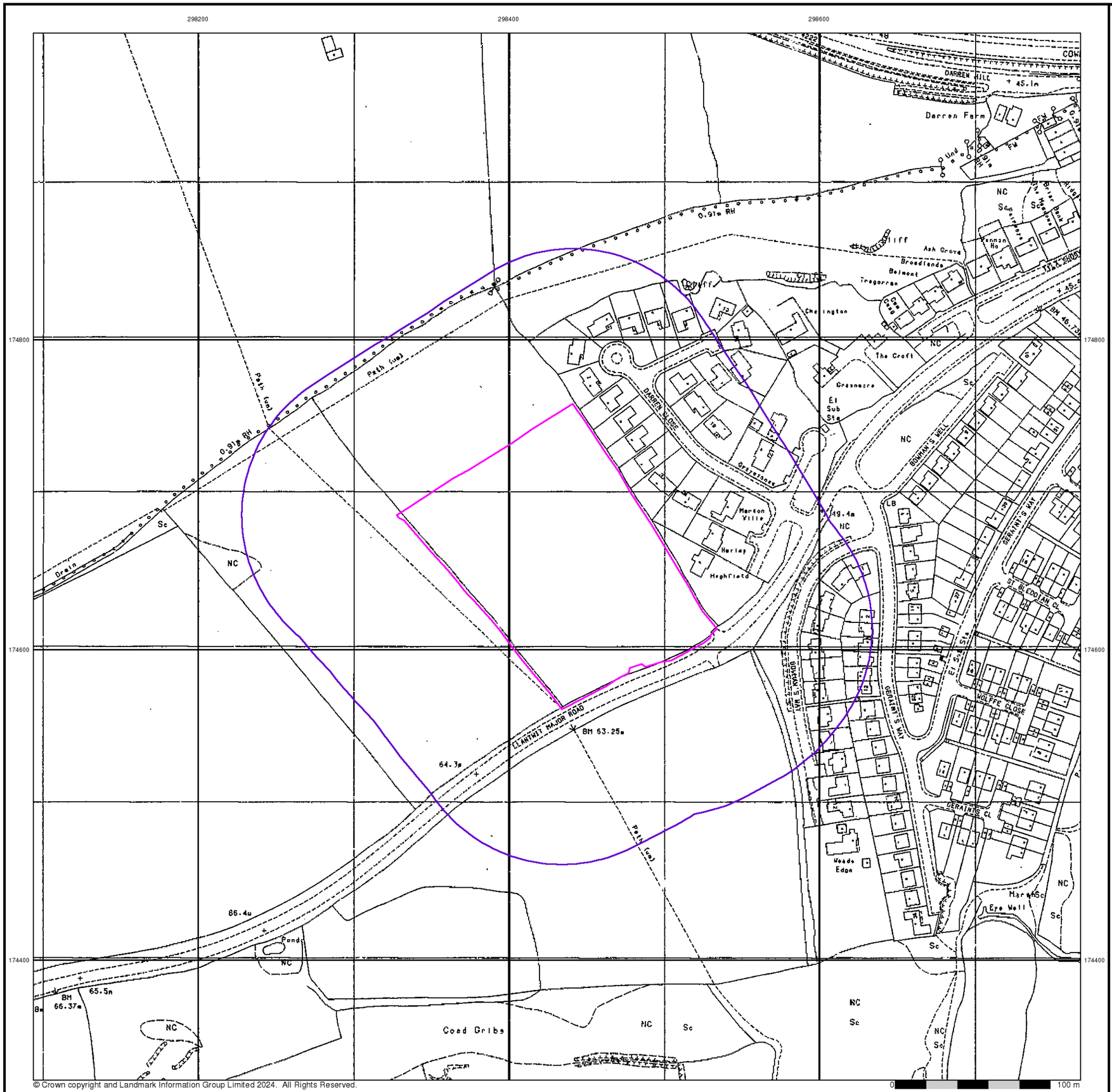


Hydrock

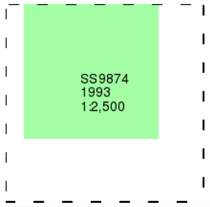
Additional SIMs

Published 1993

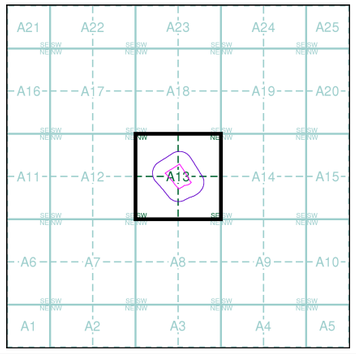
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

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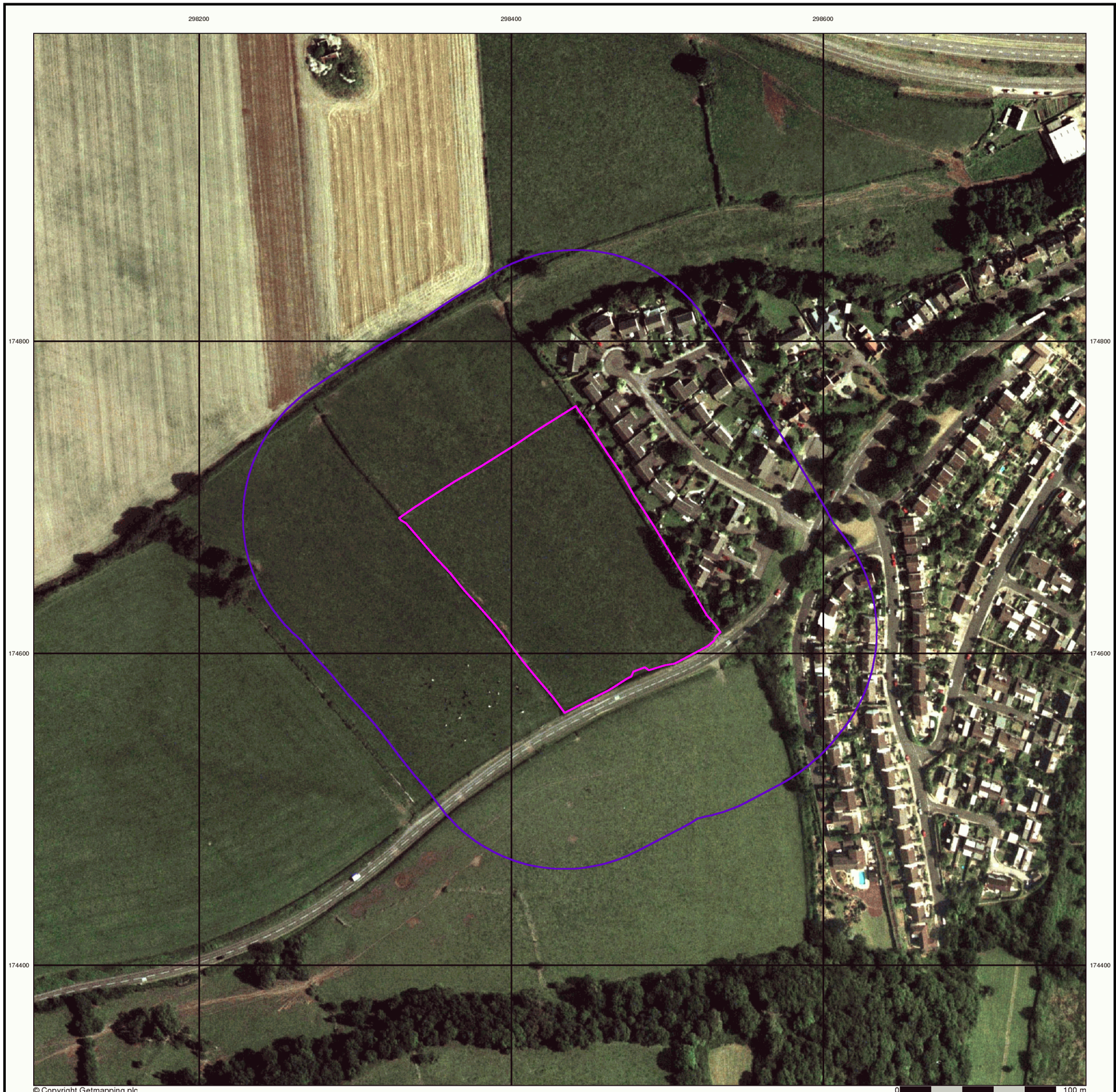


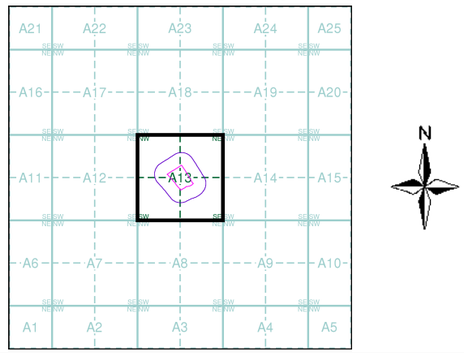
Hydrock

Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

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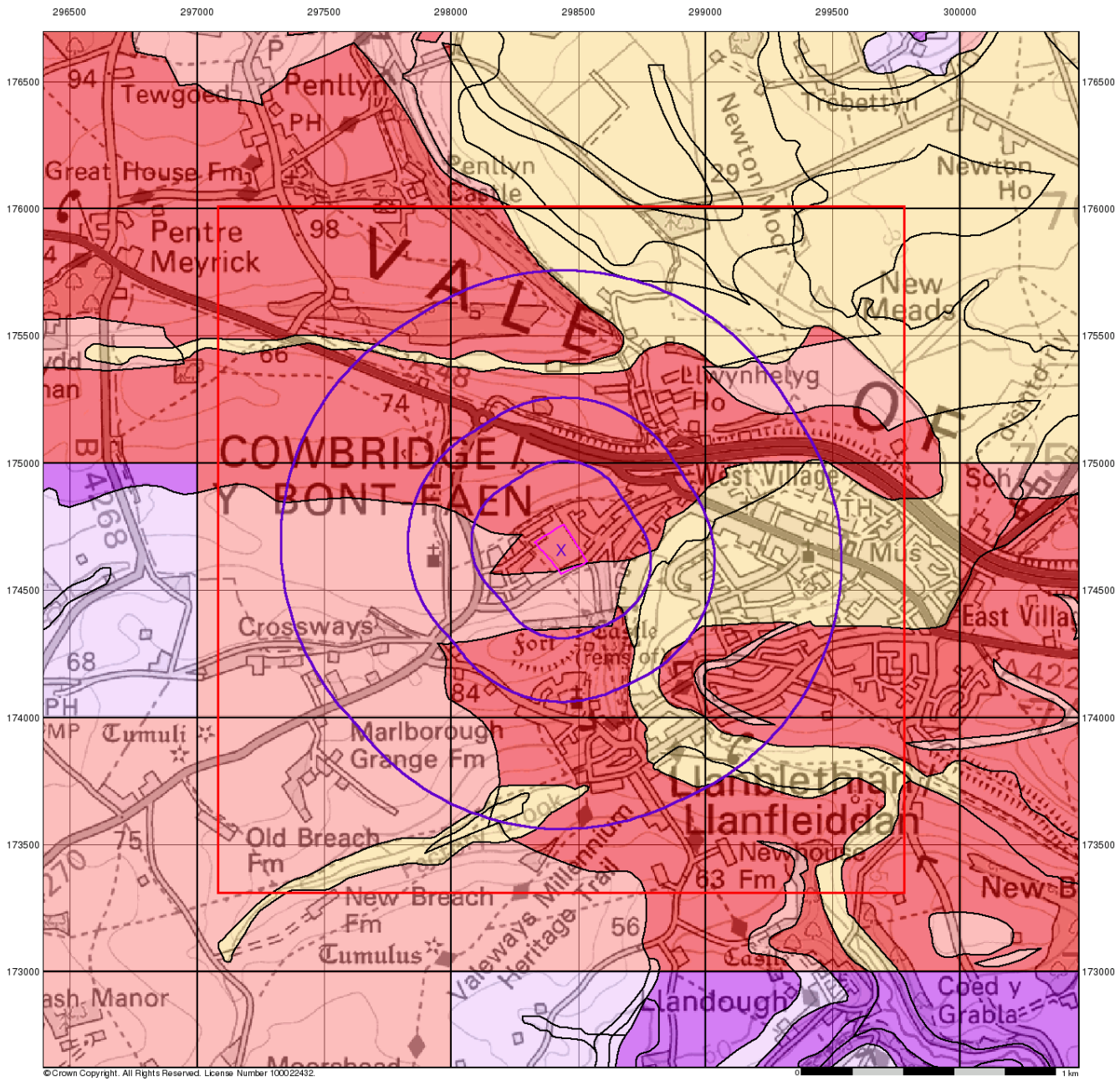
Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Appendix D Desk study research information

Envirocheck Report



Hydrock

Groundwater Vulnerability

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

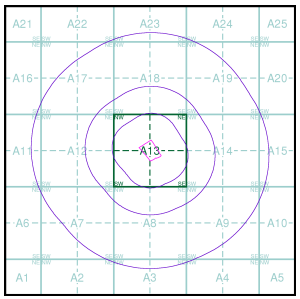
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

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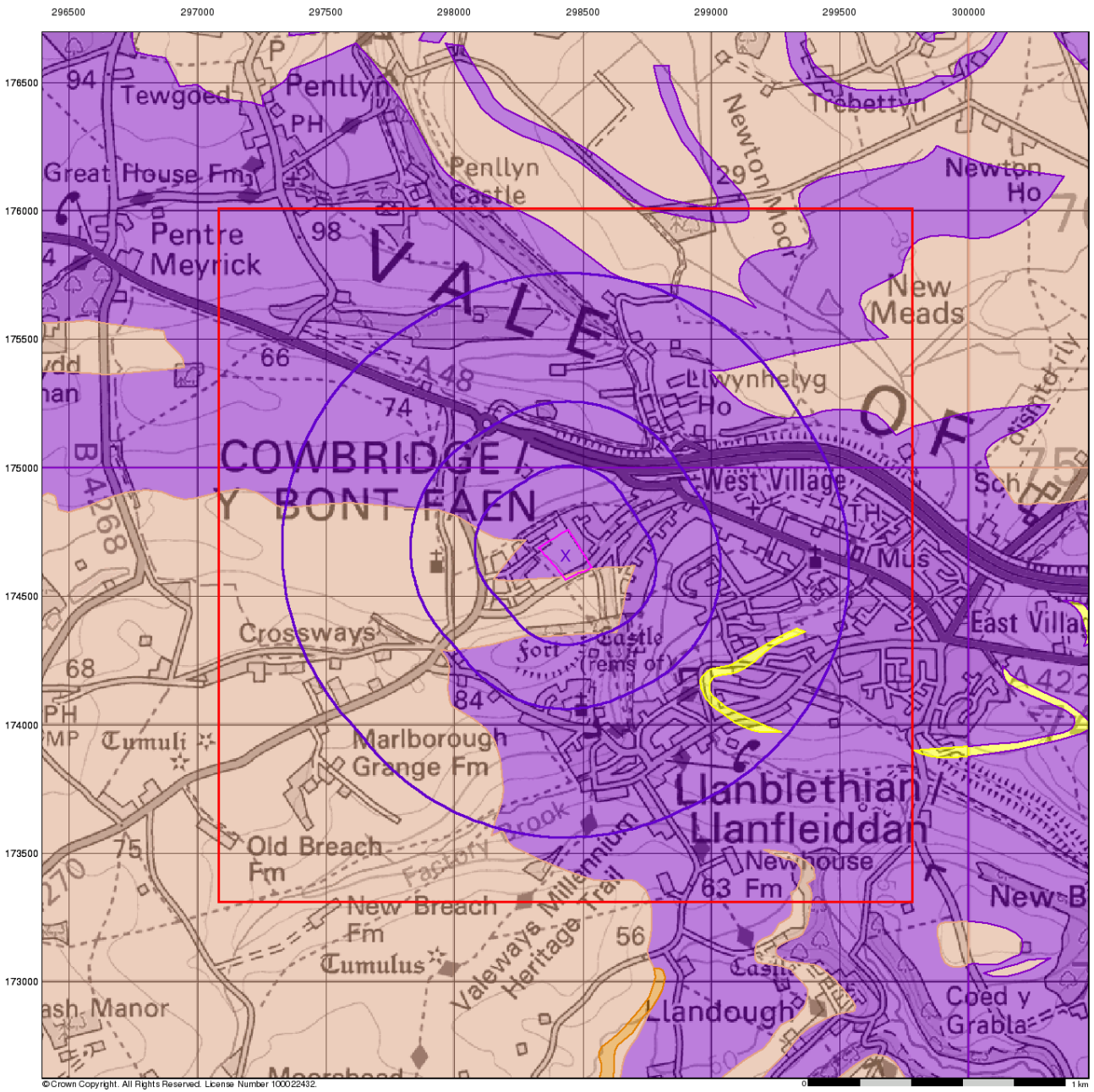


Hydrock

Bedrock Aquifer Designation

General

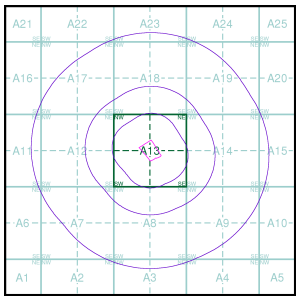
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

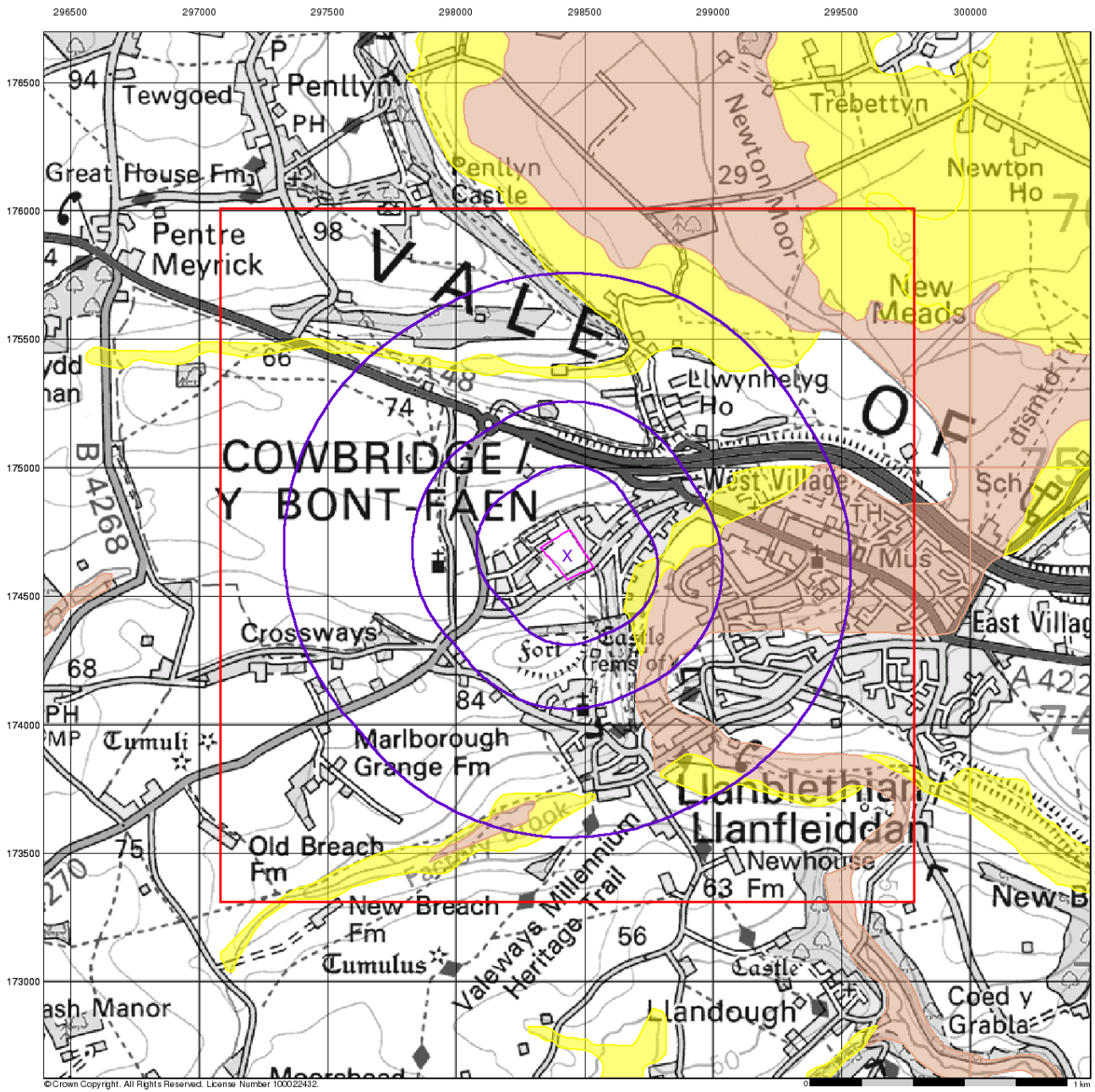
Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Superficial Aquifer Designation

General

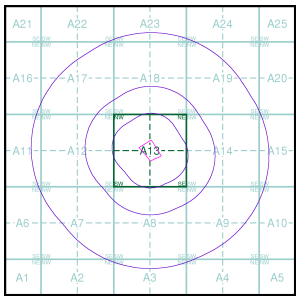
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A

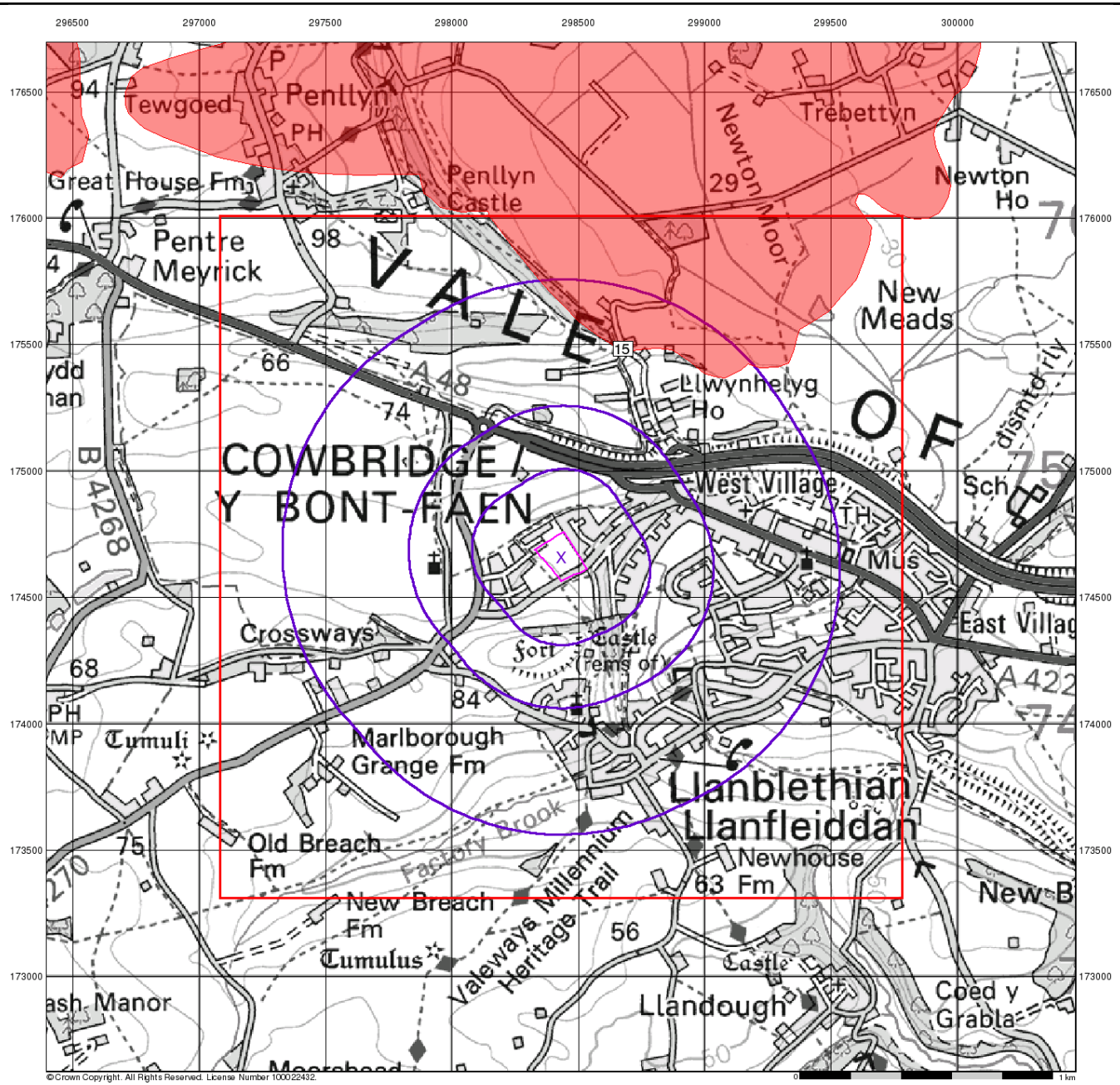


Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG



Hydrock

Source Protection Zones

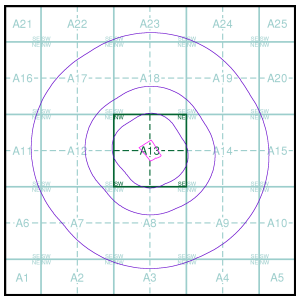
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



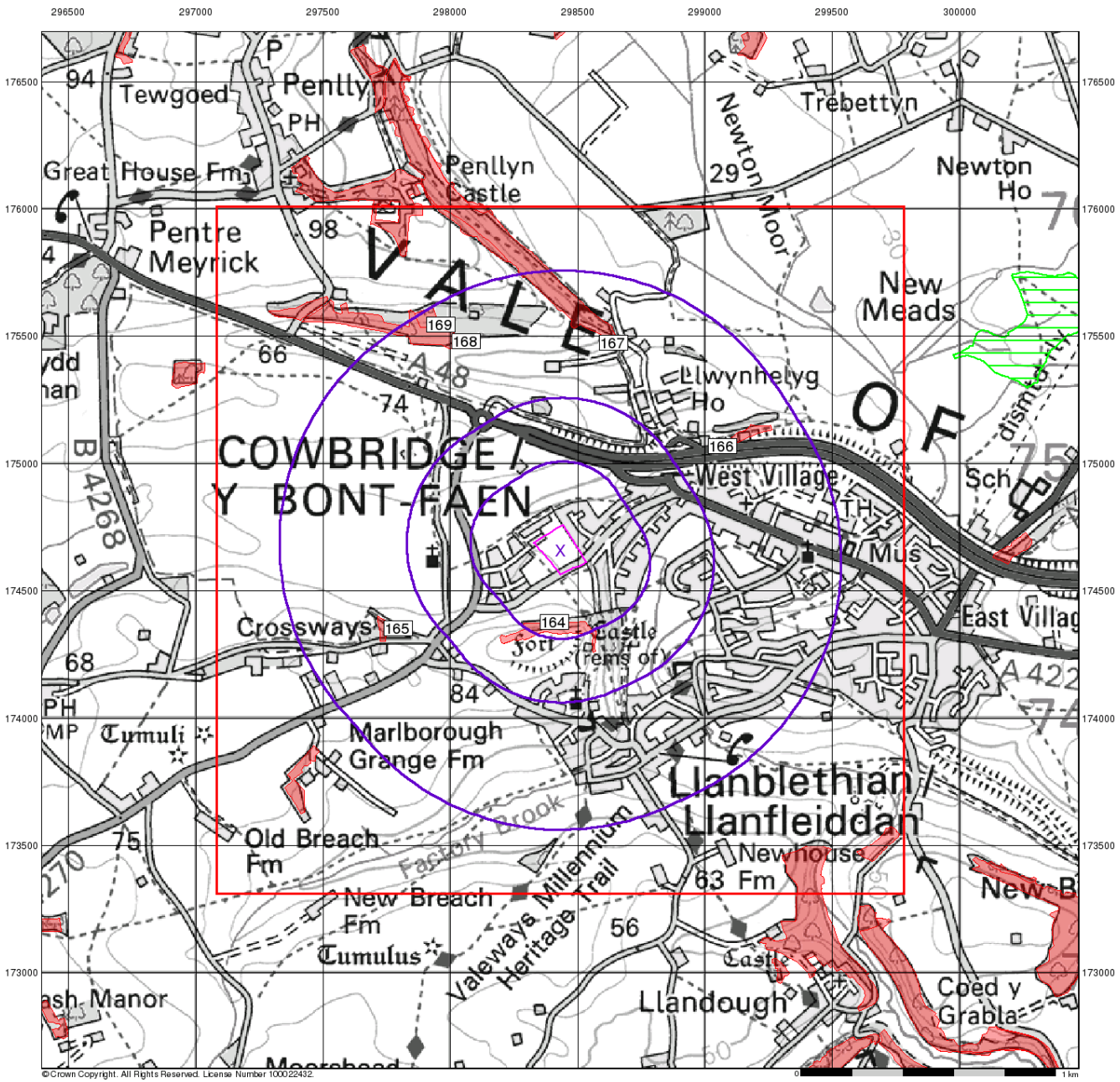
Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Sensitive Land Uses

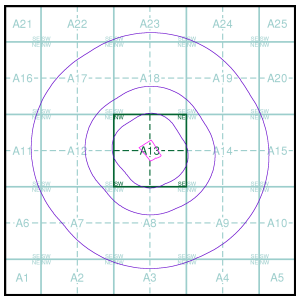
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



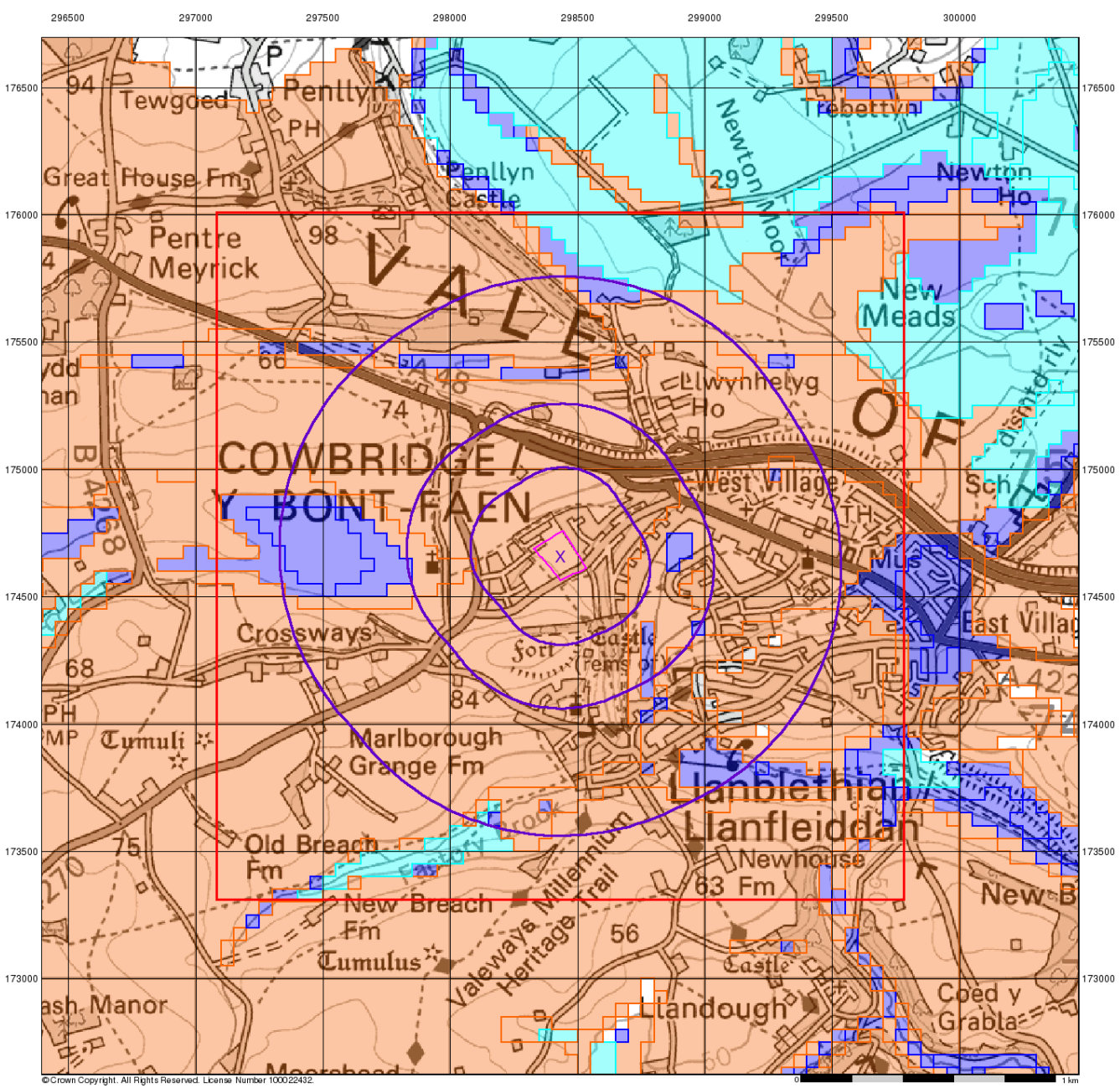
Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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BGS Flood GFS Data

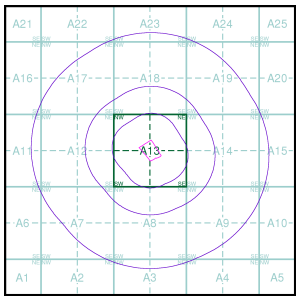
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
337639253_1_1

Customer Reference:
31793

National Grid Reference:
298430, 174660

Slice:
A

Site Area (Ha):
2.05

Search Buffer (m):
1000

Site Details:

31, Dunraven Close
COWBRIDGE
CF71 7FG

Client Details:

Mr R Swayne
Hydrock Consultants
Over Court Barns
Over Lane
Almondsbury
Bristol
BS32 4DF

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				3
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 2		Yes		
Pollution Incidents to Controlled Waters	pg 2				7
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 3				2
River Quality Biology Sampling Points	pg 4				1
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 4			1	4
Water Abstractions	pg 5				1 (*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 6	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 7	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 7				1
Extreme Flooding from Rivers or Sea without Defences	pg 7		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 7		Yes	n/a	n/a
Areas Benefiting from Flood Defences	pg 7		Yes	n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 7		5	39	55

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 19			1	3
Local Authority Landfill Coverage	pg 19	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 19		3	1	1
Potentially Infilled Land (Water)	pg 20				3
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents	pg 21		1		
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 22	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 22	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 28		3	1	2
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 29		Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 29	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 29	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 30	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 30		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 30		Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 30	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 30	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 31			2	18
Fuel Station Entries					
Points of Interest - Commercial Services	pg 32			3	3
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 33		1	1	6
Points of Interest - Public Infrastructure	pg 34		1		5
Points of Interest - Recreational and Environmental	pg 34	1	1	1	4
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 36		1		5
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	0	1	298434 174658
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	166	1	298700 174650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (W)	231	1	298100 174650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (N)	242	1	298434 175000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	303	1	298750 174400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	316	1	298850 174658
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (E)	372	1	298900 174550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NW (SE)	445	1	298850 174300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	468	1	298950 174400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (W)	480	1	297850 174650
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Llanblethian Sewage Pumping Station, Vale Of Glamorgan, Wales, Cf71 7fa Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Eprnb3897tp Permit Version: 1 Effective Date: 30th November 2015 Issued Date: 30th November 2015 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Thaw **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	837	2	299033 173939
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Llanblethian Sewage Pumping Station, Vale Of Glamorgan, Wales, Cf71 7fa Authority: Natural Resources Wales Catchment Area: THAW Reference: Nb3897tp Permit Version: 1 Effective Date: 30th November 2015 Issued Date: 30th November 2015 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Thaw **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	837	2	299033 173939

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Llanblethian Sewage Pumping Station, Vale Of Glamorgan, Wales, Cf71 7fa Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Nb3897tp Permit Version: Not Supplied Effective Date: 30th November 2015 Issued Date: 30th November 2015 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: River Thaw **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	837	2	299033 173939
	Nearest Surface Water Feature	A13NW (NW)	87	-	298259 174740
2	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Cross Inn, Church Road, LLANBLETHIAN Authority: Environment Agency, Welsh Region Pollutant: Cesspit Contents Note: River Thaw; Overflow Incident Date: 9th March 1998 Incident Reference: 35011 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Inadequate Design/Capacity Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A7NE (SW)	577	3	297900 174300
3	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: COWBRIDGE Authority: Environment Agency, Welsh Region Pollutant: Agricultural: Carcasses Note: Not Supplied Incident Date: 14th February 1995 Incident Reference: 22533 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NW (E)	596	3	299100 174800
4	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: LLANBLETHIAN Authority: Environment Agency, Welsh Region Pollutant: Farm Effluent/Slurry Note: Not Supplied Incident Date: 17th May 1995 Incident Reference: 24012 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	798	3	298900 173900
4	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: LLANBLETHIAN Authority: Environment Agency, Welsh Region Pollutant: Foam/Soap Suds Note: Neglect Incident Date: 10th July 1996 Incident Reference: 29079 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Bypass Of Treatment Facilities Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	803	3	298900 173895

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Pollution Incidents to Controlled Waters** Property Type: Cattle Beef Farming: Yards Location: Factory Brook, COWBRIDGE Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Weather Incident Date: 29th April 1991 Incident Reference: 391 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	807	3	298700 173800
6	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 16th August 1996 Incident Reference: 29726 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	872	3	298750 173750
7	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Crude Sewage Note: Not Supplied Incident Date: 8th July 1995 Incident Reference: 25002 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15SW (E)	973	3	299500 174500
	River Quality Name: Thaw GQA Grade: River Quality B Reach: Conf.Factory Bk. -Conf.Aberthin Bk. Estimated Distance (km): 2 Flow Rate: Flow less than 1.25 cumecs Flow Type: River Year: 2000	A9NE (SE)	803	3	299182 174140
	River Quality Name: Thaw GQA Grade: River Quality B Reach: Conf.At Llandough- Conf.Factory Bk. Estimated Distance (km): 2.1 Flow Rate: Flow less than 1.25 cumecs Flow Type: River Year: 2000	A9SW (SE)	838	3	298919 173865

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**River Quality Biology Sampling Points** Name: Thaw Reach: Confluence At Llandough To Confluence Factory Brook Estimated Distance: 2.10 Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: River Quality Biology GQA Grade B - Good Year: 1995 GQA Grade: River Quality Biology GQA Grade A - Very Good Year: 2000 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2002 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2003 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2004 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2005 GQA Grade: River Quality Biology GQA Grade A - Very Good Year: 2006 GQA Grade: River Quality Biology GQA Grade A - Very Good Year: 2007 GQA Grade: River Quality Biology GQA Grade A - Very Good Year: 2008 GQA Grade: River Quality Biology GQA Grade B - Good Year: 2009 GQA Grade: River Quality Biology GQA Grade B - Good	A9NW (SE)	711	3	298900 174000
9	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 7th August 2012 Incident Reference: 1023106 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: General Biodegradable : Composted Material	A18SW (N)	426	2	298248 175137
10	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 9th September 2014 Incident Reference: 1275938 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants and EffectsOther Odour	A14SE (E)	603	2	299118 174466
11	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 26th November 2013 Incident Reference: 1178695 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants and EffectsOther Odour	A9NE (SE)	709	2	299128 174227
12	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 17th August 2015 Incident Reference: 1365209 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage	A14SE (E)	914	2	299438 174481
13	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 1st May 2019 Incident Reference: 1902798 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Specific Waste Materials: Other Specific Waste Material	A7NW (SW)	949	2	297555 174137

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Water Abstractions** Operator: Lewis Civil Engineering Ltd Licence Number: Wa/058/0021/0002 Permit Version: Not Supplied Location: The Verlands, Llanblethian, Cowbridge, Vale Of Glamorgan, Cf71 7bd Authority: Natural Resources Wales Abstraction: Construction:Dewatering Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (E)	507	2	299033 174703
	Water Abstractions Operator: Dwr Cymru Cyfyngedig Licence Number: 21/58/21/0001 Permit Version: Not Supplied Location: Not Supplied Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 2191.781 Yearly Rate (m3): 800000 Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Approximate location provided by supplier	A24SW (NE)	1362	2	299000 176000
	Water Abstractions Operator: Dwr Cymru Cyfyngedig Licence Number: 21/58/21/0025 Permit Version: Not Supplied Location: Not Supplied Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 2191.781 Yearly Rate (m3): 800000 Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Approximate location provided by supplier	A24SW (NE)	1362	2	299000 176000
	Water Abstractions Operator: Penllyn Estate Farm Partners Licence Number: 21/58/21/0018 Permit Version: 100 Location: Borehole At Penllyn Authority: Natural Resources Wales Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Underground Strata At Penllyn Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th June 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NE (N)	1508	2	298000 176200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Penllyn Estate Farm Partners Licence Number: 21/58/21/0018 Permit Version: Not Supplied Location: Abstraction From Borehole At Penllyn Authority: Natural Resources Wales Abstraction: General Farming And Domestic Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 54.55 Yearly Rate (m3): 19911.5 Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NE (N)	1508	2	298000 176200
	Water Abstractions Operator: Dwr Cymru Cyfyngedig Licence Number: 21/58/21/0001 Permit Version: 100 Location: Pwllwy Springs Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Borehole Near Llansannor Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 19th October 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1927	2	299070 176580
	Water Abstractions Operator: Dwr Cymru Cyf Licence Number: 21/58/21/0001 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Spring Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Borehole Llansannor (Pwllwy) Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1995	3	299170 176615
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13SE (S)	0	2	298457 174587

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Map Combined Classification: Principle Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13SE (E)	0	2	298434 174658
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13SE (S)	0	2	298457 174587
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13SE (E)	0	2	298434 174658
	Superficial Aquifer Designations No Data Available				
15	**Source Protection Zones** Name: Not Supplied Source: Natural Resources Wales Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A18NE (N)	762	2	298677 175482
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	243	2	298704 174439
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	243	2	298704 174439
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13SE (SE)	243	2	298704 174439
	Flood Water Storage Areas None				
	Flood Defences None				
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A13NW (W)	172	4	298157 174673
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A13SW (W)	201	4	298130 174654
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A13SW (W)	205	4	298126 174652

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A13SW (W)	214	4	298118 174647
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 41.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	242	4	298093 174634
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 166.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A13SE (SE)	251	4	298702 174426
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 266.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	279	4	298812 174635
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	282	4	298055 174617
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 64.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	287	4	298051 174613
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 96.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	296	4	298823 174550
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	298	4	298819 174527
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	299	4	298819 174523

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	302	4	298820 174519
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	304	4	298821 174516
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 73.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	322	4	298836 174502
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	322	4	298836 174502
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 122.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A13SE (SE)	328	4	298760 174375
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	329	4	298847 174514
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	329	4	298846 174510
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (E)	331	4	298864 174607
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 43.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (SE)	340	4	298838 174461

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 88.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (SE)	349	4	298824 174420
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	351	4	297991 174590
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 144.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	356	4	297986 174591
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 155.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	376	4	298771 174319
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	395	4	298725 174263
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 223.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14SW (SE)	402	4	298833 174346
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 114.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	404	4	298724 174253
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	404	4	298724 174253
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	407	4	298737 174257

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14NW (E)	438	4	298934 174792
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1185.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	444	4	298857 174309
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 100.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14NW (E)	446	4	298941 174794
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	455	4	298752 174211
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 53.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	457	4	298750 174207
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	463	4	297876 174588
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 238.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SE (W)	466	4	297873 174589
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 596.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14NW (NE)	475	4	298875 174964
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	490	4	298729 174158

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A8NE (SE)	490	4	298729 174158
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A8NE (SE)	491	4	298732 174158
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A8NE (SE)	494	4	298736 174158
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 163.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	499	4	298746 174157
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 41.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	500	4	298723 174144
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	540	4	298729 174103
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	543	4	298730 174100
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	563	4	298702 174066
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 49.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8NE (SE)	577	4	298738 174066

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 927.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A19SW (NE)	595	4	298961 175050
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 141.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	610	4	298783 174051
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	624	4	298846 174069
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	624	4	298846 174069
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	652	4	298859 174044
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 108.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	676	4	298880 174029
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	676	4	298877 174027
71	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 15.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9NW (SE)	677	4	298871 174022
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 220.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SW (W)	683	4	297661 174542

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 82.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12SW (W)	684	4	297646 174642
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 38.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	750	4	298443 175508
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 420.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 1	A12NW (W)	757	4	297571 174676
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 264.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 2	A12NW (W)	757	4	297571 174676
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 89.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A19SE (NE)	759	4	299180 175011
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 267.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A9SW (SE)	767	4	298805 173882
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9SW (SE)	767	4	298975 173983
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 382.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SE (S)	772	4	298673 173828
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A9SW (SE)	775	4	298979 173976

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 485.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Ddawan Catchment Name: Thaw Cadoxton Primacy: 1	A9SW (SE)	776	4	298981 173977
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NW (N)	781	4	298420 175539
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	783	4	298737 175483
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	786	4	298743 175483
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 55.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	790	4	298740 175490
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.7 Watercourse Level: Underground Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SE (S)	796	4	298763 173838
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NW (N)	801	4	298410 175558
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	806	4	298679 175529
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	808	4	298678 175530

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 40.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	808	4	298678 175530
92	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 37.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NE (N)	818	4	298675 175542
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A18NE (N)	829	4	298717 175540
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 140.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A19NW (NE)	838	4	298850 175490
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 67.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	842	4	298264 173738
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 97.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	845	4	298402 173718
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 176.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A18NW (N)	858	4	298359 175612
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 96.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	864	4	298245 173719
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	875	4	298175 173727

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
100	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: Underground Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	879	4	298316 173691
101	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	880	4	298188 173717
102	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	880	4	298188 173717
103	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	881	4	298315 173689
104	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 95.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	883	4	298195 173712
105	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	883	4	298195 173712
106	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	884	4	298297 173689
107	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	890	4	298281 173685
108	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 439.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Factory Brook Catchment Name: Thaw Cadoxton Primacy: 1	A8SW (S)	892	4	298279 173683

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 102.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A14NE (E)	906	4	299383 174928
110	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 568.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A19NW (NE)	908	4	298872 175558
111	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 2	A11SE (W)	950	4	297386 174562
112	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 205.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogmore Primacy: 2	A11SE (W)	957	4	297380 174561
113	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 56.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 1	A15NW (E)	990	4	299467 174946
114	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 65.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thaw Cadoxton Primacy: 2	A15NW (E)	990	4	299467 174946

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
115	**Licensed Waste Management Facilities (Locations)** Licence Number: 100525 Location: The Lodge, Llwynhelig, Gibbots Hill, Cowbridge, CF71 7FF Operator Name: Cowbridge Compost Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Composting **Licence Status: Modified** Issued: 19th February 2009 Last Modified: 4th February 2015 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	496	2	298800 175100
116	**Licensed Waste Management Facilities (Locations)** Licence Number: BB3133DV Location: S R 2010 No 4, Cowbridge, Vale of Glamorgan, CF71 7FF Operator Name: Mr John Homfray, Mrs Josephine Homfray, Mrs Mary Homfray & Mr Matthew Homfray Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Mobile plant for land spreading **Licence Status: Effective** Issued: 17th August 2011 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location	A18SE (NE)	505	2	298763 175147
117	**Licensed Waste Management Facilities (Locations)** Licence Number: BP3095SR Location: The Lodge, Gibbots Hill, Cowbridge, Vale Of Glamorg, CF71 7FF Operator Name: Penllyn Estate LLP Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Effective** Issued: 21st October 2020 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NW (N)	640	2	298350 175391
118	**Licensed Waste Management Facilities (Locations)** Licence Number: BP3095SR Location: Cowbridge Compost Ltd, The Lodge, Gibbots Hill, Cowbridge, Vale Of Glamorg, Vale of Glamorgan, CF71 7FF Operator Name: Cowbridge Compost Ltd Operator Location: Not Supplied Authority: Natural Resources Wales Site Category: Composting **Licence Status: Effective** Issued: 17th July 2019 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NE (N)	777	2	298699 175491
	Local Authority Landfill Coverage Name: Vale Of Glamorgan County Borough Council - Has supplied landfill data		0	5	298434 174658
119	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1972	A13NE (NE)	139	-	298610 174753
120	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1972	A13NE (E)	163	-	298651 174732

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
121	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1972	A13SW (SW)	241	-	298251 174405
122	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1973	A19SW (NE)	437	-	298803 175002
123	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1972	A9NE (SE)	835	-	299192 174100
124	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A9NW (SE)	587	-	298934 174182
125	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A8SE (S)	752	-	298609 173831
126	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1885	A18NE (N)	780	-	298702 175493

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
127	**Planning Hazardous Substance Consents** Name: Dalgety Agriculture Ltd Location: Crossways Industrial Estate, Llantwit Major Road, COWBRIDGE, South Glamorgan, CF71 7JP Authority: Vale Of Glamorgan County Borough Council, Planning Department Application Ref: 05801/Haz Hazardous Substance: Liquefied extremely flammable gas (including LPG) and natural gas (whether liquefied or not) Maximum Quantity: 1125 Application date: 25th November 1992 **Decision: Unknown at time of reportUnknown** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (E)	93	6	298596 174687

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Lias Group	A13SE (E)	0	1	298434 174658
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	0	1	298434 174658
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (E)	157	1	298683 174567
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (S)	214	1	298453 174349
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	256	1	298774 174526
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	279	1	298694 174881
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	302	1	298827 174543

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18SE (NE)	445	1	298756 175074
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A17SE (NW)	454	1	298000 175000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (E)	466	1	299000 174658
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	475	1	299000 174702
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (SE)	521	1	298988 174359
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (SE)	528	1	299000 174366

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (SE)	531	1	299000 174359
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	543	1	299000 174891
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	591	1	298434 175349
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	601	1	299000 175000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9NW (SE)	605	1	298965 174188
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9NW (SE)	614	1	299000 174214

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (NE)	628	1	299072 174936
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	633	1	298473 175390
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (SE)	640	1	299008 174183
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (SE)	641	1	299000 174173
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	646	1	299053 175000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9NW (SE)	680	1	299000 174117

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	695	1	298642 175424
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (SE)	709	1	299000 174078
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (E)	736	1	299226 174864
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (E)	736	1	299226 174864
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SE (NE)	751	1	299178 175000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	831	1	298418 173731

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	835	1	299000 175379
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9NE (SE)	839	1	299107 174000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 20 - 40 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	870	1	299050 175379
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SW (S)	871	1	298303 173701
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	871	1	299367 174360
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NE (SE)	904	1	299198 174000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	911	1	299413 174376
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SE (E)	928	1	299377 175000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SE (E)	942	1	299393 175000
128	**BGS Recorded Mineral Sites** Site Name: Tyle-Rhosyr Location: Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161068 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Blue Lias Formation (Marginal Facies) Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (E)	155	1	298642 174730
129	**BGS Recorded Mineral Sites** Site Name: Coed Gribs Location: Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161069 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13SW (SW)	235	1	298256 174409
130	**BGS Recorded Mineral Sites** Site Name: Sutton Location: West Village, Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 8549 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Blue Lias Formation (Marginal Facies) Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	242	1	298690 174820

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
131	**BGS Recorded Mineral Sites** Site Name: Daren Cottage Location: Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161058 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Friars Point Limestone Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	433	1	298801 174999
132	**BGS Recorded Mineral Sites** Site Name: Limefield House Location: Llanblethian, Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161105 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Porthkerry Member Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	762	1	297717 174232
133	**BGS Recorded Mineral Sites** Site Name: St Quintin'S Cottage Location: Cowbridge, South Glamorgan Source: British Geological Survey, National Geoscience Information Service Reference: 161070 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Jurassic Geology: Blue Lias Formation (Marginal Facies) Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	838	1	299197 174102
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	214	1	298453 174349
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	157	1	298683 174567
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	214	1	298453 174349

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	0	1	298457 174587
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	157	1	298683 174567
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	171	1	298664 174502
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	207	1	298653 174442
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	157	1	298683 174567
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	157	1	298683 174567
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A18SE (N)	242	1	298434 175000
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	0	1	298450 174575
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Higher probability radon area (10 to 30% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	0	1	298450 174575
	Radon Potential - Radon Protection Measures Protection Measure: Full radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	0	1	298434 174658

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
134	**Contemporary Trade Directory Entries** Name: Chips Away Location: Millstones, Town Mill Road, Cowbridge, CF71 7BE Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	494	-	299000 174451
134	**Contemporary Trade Directory Entries** Name: Chips Away Location: Millstones, Town Mill Road, Cowbridge, CF71 7BE Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	494	-	299000 174451
135	**Contemporary Trade Directory Entries** Name: Lokijo Trading Ltd Location: Unit 1 The Old Bullpen, Llwynhelig, Cowbridge, South Glamorgan, CF71 7FF Classification: Blast Cleaning **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A19SW (NE)	578	-	298879 175135
136	**Contemporary Trade Directory Entries** Name: Christopher Designs Location: Penllyn Estate Farm, Llwynhelig, Cowbridge, CF71 7FF Classification: Seating Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	612	-	298957 175087
137	**Contemporary Trade Directory Entries** Name: Pearce & Harris Ltd Location: Lower Stafford Coach House, Westgate, Cowbridge, South Glamorgan, CF71 7AR Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	617	-	299139 174732
138	**Contemporary Trade Directory Entries** Name: Bear Lane Auto Repairs Location: High Street, Cowbridge, South Glamorgan, CF71 7AH Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	735	-	299267 174662
139	**Contemporary Trade Directory Entries** Name: Vale Carpet Cleaning Location: 62, High Street, Cowbridge, CF71 7YT Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	809	-	299339 174692
140	**Contemporary Trade Directory Entries** Name: Grad Services Ltd Location: 86, Broadway, Llanblethian, Cowbridge, South Glamorgan, CF71 7EY Classification: Medical Equipment Maintenance & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	872	-	299217 174071
141	**Contemporary Trade Directory Entries** Name: Het Location: The Old Wool Barn, Veritys Court, Cowbridge, South Glamorgan, CF71 7AJ Classification: Millinery Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14NE (E)	913	-	299439 174730
141	**Contemporary Trade Directory Entries** Name: Arthur John & Co Location: 43, High Street, Cowbridge, South Glamorgan, CF71 7YG Classification: Hardware **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NW (E)	931	-	299462 174686
141	**Contemporary Trade Directory Entries** Name: Sapphire Pools & Spas Location: High Street, Cowbridge, South Glamorgan, CF71 7YP Classification: Swimming Pool Contractors, Repairers & Service **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A15SW (E)	957	-	299490 174658

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
141	**Contemporary Trade Directory Entries** Name: D B Clean Location: 35, High Street, Cowbridge, South Glamorgan, CF71 7AE Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NW (E)	958	-	299489 174682
142	**Contemporary Trade Directory Entries** Name: Welsh Smoked Products Location: Vale Forge, North Road, Cowbridge, South Glamorgan, CF71 7DF Classification: Bacon & Ham Curers & Merchants **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NW (E)	928	-	299448 174773
142	**Contemporary Trade Directory Entries** Name: Vale Building Centre Location: North Rd, Cowbridge, South Glamorgan, CF71 7DF Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NW (E)	928	-	299448 174772
142	**Contemporary Trade Directory Entries** Name: Vale Building Centre Location: Unit 5,Vale Forge,North Rd, Cowbridge, South Glamorgan, CF71 7DF Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NW (E)	928	-	299448 174772
142	**Contemporary Trade Directory Entries** Name: Cowbridge Aggregates Location: Vale Forge, North Road, Cowbridge, South Glamorgan, CF71 7DF Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A15NW (E)	950	-	299467 174792
143	**Contemporary Trade Directory Entries** Name: Wildwater Logistics Ltd Location: Unit 2, Crossways Industrial Estate, Cross Ways, Cowbridge, South Glamorgan, CF71 7LJ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	967	-	297534 174135
143	**Contemporary Trade Directory Entries** Name: Noremat Location: Unit 2, Crossways Industrial Estate, Cross Ways, Cowbridge, South Glamorgan, CF71 7LJ Classification: Agricultural Machinery - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	967	-	297534 174135
143	**Contemporary Trade Directory Entries** Name: Pallet Providers Wales Ltd Location: UNIT 2, CROSSWAYS INDUSTRIAL ESTATE, CROSS WAYS, COWBRIDGE, CF71 7LJ Classification: Pallets, Crates & Packing Cases **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	968	-	297534 174134
144	**Contemporary Trade Directory Entries** Name: Est Bus Ltd Location: Unit 2, Crossways, Cross Ways, Cowbridge, South Glamorgan, CF71 7LJ Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	977	-	297557 174088
145	**Points of Interest - Commercial Services** Name: Chipsaway Location: Millstones, Town Mill Road, Cowbridge, CF71 7BE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (E)	494	7	299000 174450
145	**Points of Interest - Commercial Services** Name: Paul Jarvis Location: Millstones, Townmill Road, Cowbridge, CF71 7BE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (E)	496	7	299002 174450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
145	**Points of Interest - Commercial Services** Name: Chipsaway Location: Millstones, Townmill Road, Cowbridge, CF71 7BE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14SW (E)	496	7	299002 174450
146	**Points of Interest - Commercial Services** Name: The Cowbridge Valeting Centre Location: Vale Forge, North Road, Cowbridge, CF71 7DF Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A15NW (E)	929	7	299452 174753
146	**Points of Interest - Commercial Services** Name: Cowbridge Valeting Centre Location: Vale Forge, North Road, Cowbridge, CF71 7DF Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A15NW (E)	929	7	299452 174753
146	**Points of Interest - Commercial Services** Name: The Cowbridge Valet Centre Location: Vale Forge, North Road, Cowbridge, CF71 7DF Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A15NW (E)	929	7	299452 174752
147	**Points of Interest - Manufacturing and Production** Name: G P & N C Thomas Location: 1 Tyla Rhosyr, Cowbridge, CF71 7AU Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A13SE (E)	13	7	298522 174654
148	**Points of Interest - Manufacturing and Production** Name: E T Adams & Sons Location: Cowbridge, CF71 7AQ Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A13NE (NE)	337	7	298724 174941
149	**Points of Interest - Manufacturing and Production** Name: Penllyn Estate Farm Location: Penllyn Estate Farm, Llwynhelig, Cowbridge, South Glamorgan, CF71 7FF Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A19SW (NE)	612	7	298956 175090
150	**Points of Interest - Manufacturing and Production** Name: Tank Location: CF71 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	614	7	298768 175278
151	**Points of Interest - Manufacturing and Production** Name: Factory Location: CF71 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	767	7	298542 173803
152	**Points of Interest - Manufacturing and Production** Name: Quarry (Disused) Location: CF71 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A7NW (SW)	774	7	297695 174242
153	**Points of Interest - Manufacturing and Production** Name: Tank Location: CF71 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	807	7	299340 174584
154	**Points of Interest - Manufacturing and Production** Name: Solar Panels Location: CF71 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	934	7	298689 175659

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
155	**Points of Interest - Public Infrastructure** Name: Sewage Pumping Station Location: CF71 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A13NW (N)	77	7	298426 174833
156	**Points of Interest - Public Infrastructure** Name: Cowbridge Police Station Location: Police Station, Westgate, Cowbridge, CF71 7AR Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A14NW (E)	583	7	299092 174781
157	**Points of Interest - Public Infrastructure** Name: Sewage Pumping Station Location: CF71 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	864	7	299087 173948
157	**Points of Interest - Public Infrastructure** Name: Sewage Pumping Station Location: CF71 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	865	7	299088 173948
158	**Points of Interest - Public Infrastructure** Name: Est Bus Ltd Location: Unit 2 Crossways, Cross Ways, Cowbridge, CF71 7LJ Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A7NW (SW)	977	7	297557 174088
158	**Points of Interest - Public Infrastructure** Name: Est Bus Ltd Location: Cross Ways, Cowbridge, South Glamorgan, CF71 7LJ Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A7NW (SW)	978	7	297556 174088
159	**Points of Interest - Recreational and Environmental** Name: Play Area Location: CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NW (W)	0	7	298343 174675
160	**Points of Interest - Recreational and Environmental** Name: Play Area Location: CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NW (W)	130	7	298201 174663
161	**Points of Interest - Recreational and Environmental** Name: Play Area Location: CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	295	7	298121 174477
162	**Points of Interest - Recreational and Environmental** Name: Play Area Location: CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SE (SE)	688	7	298740 173946
163	**Points of Interest - Recreational and Environmental** Name: Play Area Location: CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	839	7	299364 174492
163	**Points of Interest - Recreational and Environmental** Name: Playground Location: Town Mill Road, CF71 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A14SE (E)	858	7	299387 174525

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
163	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	891	7	299420 174523

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
164	**Ancient Woodland** Name: Not Supplied Reference: 18076 Area(m²): 14872.85 Type: Ancient and Semi-Natural Woodland	A13SW (S)	186	2	298409 174378
165	**Ancient Woodland** Name: Not Supplied Reference: 40811 Area(m²): 4002.71 Type: Plantation on Ancient Woodland	A12SE (SW)	630	2	297795 174352
166	**Ancient Woodland** Name: Not Supplied Reference: 18078 Area(m²): 5846.73 Type: Ancient and Semi-Natural Woodland	A19SW (NE)	694	2	299068 175067
167	**Ancient Woodland** Name: Not Supplied Reference: 11333 Area(m²): 109965.22 Type: Restored Ancient Woodland Site	A18NE (N)	742	2	298640 175474
168	**Ancient Woodland** Name: Not Supplied Reference: 39748 Area(m²): 36424.59 Type: Plantation on Ancient Woodland	A17NE (NW)	815	2	298060 175478
169	**Ancient Woodland** Name: Not Supplied Reference: 39455 Area(m²): 5337.17 Type: Plantation on Ancient Woodland	A17NE (NW)	914	2	297960 175535

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Bridgend County Borough Council - Environmental Health Department	January 2020	Annual Rolling Update
Vale Of Glamorgan County Borough Council - Environmental Health Department	January 2020	Annual Rolling Update
Natural Resources Wales	November 2023	Annually
Rhondda Cynon Taff County Borough Council - Environmental Services	October 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	August 2014	Quarterly
Natural Resources Wales	February 2024	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Welsh Region	March 2013	
Integrated Pollution Controls		
Environment Agency - Welsh Region	January 2009	
Integrated Pollution Prevention And Control		
Natural Resources Wales	December 2023	Quarterly
Environment Agency - Welsh Region	January 2021	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Bridgend County Borough Council - Environmental Health Department	July 2015	Variable
Vale Of Glamorgan County Borough Council - Environmental Health Department	June 2014	Variable
Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	September 2014	Variable
Local Authority Pollution Prevention and Controls		
Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	December 2020	Annual Rolling Update
Bridgend County Borough Council - Environmental Health Department	July 2015	Not Applicable
Vale Of Glamorgan County Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Rhondda Cynon Taff County Borough Council - Public Health and Protection Division	December 2020	Variable
Bridgend County Borough Council - Environmental Health Department	July 2015	Variable
Vale Of Glamorgan County Borough Council - Environmental Health Department	June 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	December 2023	
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	July 2015	
Natural Resources Wales	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	March 2013	
Natural Resources Wales	March 2013	
Registered Radioactive Substances		
Natural Resources Wales	January 2015	
Environment Agency - Welsh Region	June 2016	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	April 2012	
Substantiated Pollution Incident Register		
Natural Resources Wales	February 2024	Quarterly
Environment Agency Wales - South East Area	January 2021	Quarterly
Environment Agency Wales - South West Area	January 2021	Quarterly
Water Abstractions		
Natural Resources Wales	February 2024	Quarterly
Environment Agency - Welsh Region	October 2023	Quarterly

Agency & Hydrological	Version	Update Cycle
Water Industry Act Referrals Environment Agency - Welsh Region Natural Resources Wales	 October 2017 October 2022	
Groundwater Vulnerability Map Natural Resources Wales	 June 2018	 As notified
Bedrock Aquifer Designations Natural Resources Wales	 January 2018	 As notified
Superficial Aquifer Designations Natural Resources Wales	 January 2018	 As notified
Source Protection Zones Natural Resources Wales	 July 2022	 Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	 September 2020	
Flooding from Rivers or Sea without Defences Natural Resources Wales	 September 2020	
Areas Benefiting from Flood Defences Natural Resources Wales	 November 2019	 Quarterly
Flood Water Storage Areas Natural Resources Wales	 August 2019	 Quarterly
Flood Defences Natural Resources Wales	 November 2019	 Quarterly
OS Water Network Lines Ordnance Survey	 January 2024	 Quarterly
Surface Water 1 in 30 year Flood Extent Natural Resources Wales	 May 2018	 Annually
Surface Water 1 in 100 year Flood Extent Natural Resources Wales	 May 2018	 Annually
Surface Water 1 in 1000 year Flood Extent Natural Resources Wales	 May 2018	 Annually
Surface Water Suitability Natural Resources Wales	 February 2016	 Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	 May 2013	 As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites		
Natural Resources Wales	March 2023	As notified
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Welsh Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency Wales - South East Area	January 2023	Quarterly
Environment Agency Wales - South West Area	January 2023	Quarterly
Natural Resources Wales	October 2021	Quarterly
Licensed Waste Management Facilities (Locations)		
Natural Resources Wales	February 2024	Quarterly
Environment Agency Wales - South East Area	July 2021	Quarterly
Environment Agency Wales - South West Area	July 2021	Quarterly
Local Authority Landfill Coverage		
Bridgend County Borough Council	February 2003	Not Applicable
Rhondda Cynon Taff County Borough Council	February 2003	Not Applicable
Vale Of Glamorgan County Borough Council	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
Bridgend County Borough Council	October 2018	
Rhondda Cynon Taff County Borough Council	October 2018	
Vale Of Glamorgan County Borough Council	October 2018	
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	
Registered Landfill Sites		
Environment Agency Wales - South East Area	March 2006	Not Applicable
Environment Agency Wales - South West Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency Wales - South East Area	April 2018	
Environment Agency Wales - South West Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency Wales - South East Area	June 2015	
Environment Agency Wales - South West Area	June 2015	

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	March 2023	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
Rhondda Cynon Taff County Borough Council - Planning Department	February 2016	Variable
Vale Of Glamorgan County Borough Council - Planning Department	January 2016	Variable
Bridgend County Borough Council - Planning Department	March 2023	Variable
Planning Hazardous Substance Consents		
Bridgend County Borough Council - Planning Department	February 2016	Variable
Rhondda Cynon Taff County Borough Council - Planning Department	February 2016	Variable
Vale Of Glamorgan County Borough Council - Planning Department	January 2016	Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	As notified
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	December 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	January 2024	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	October 2023	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	October 2023	Annually

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	October 2023	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2023	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Points of Interest - Commercial Services PointX	March 2024	Quarterly
Points of Interest - Education and Health PointX	March 2024	Quarterly
Points of Interest - Manufacturing and Production PointX	March 2024	Quarterly
Points of Interest - Public Infrastructure PointX	March 2024	Quarterly
Points of Interest - Recreational and Environmental PointX	March 2024	Quarterly
Underground Electrical Cables National Grid	February 2023	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural Resources Wales	October 2023	Bi-Annually
Areas of Adopted Green Belt		
Bridgend County Borough Council	August 2023	Quarterly
Rhondda Cynon Taff County Borough Council	August 2023	Quarterly
Vale Of Glamorgan County Borough Council	August 2023	Quarterly
Areas of Unadopted Green Belt		
Bridgend County Borough Council	August 2023	Quarterly
Rhondda Cynon Taff County Borough Council	August 2023	Quarterly
Vale Of Glamorgan County Borough Council	August 2023	Quarterly
Areas of Outstanding Natural Beauty		
Natural Resources Wales	November 2023	Bi-Annually
Environmentally Sensitive Areas		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks		
Forestry Commission	May 2023	Not Applicable
Local Nature Reserves		
Bridgend County Borough Council	February 2024	Bi-Annually
Rhondda Cynon Taff County Borough Council	February 2024	Bi-Annually
Vale Of Glamorgan County Borough Council	February 2024	Bi-Annually
Marine Nature Reserves		
Natural Resources Wales	February 2024	Bi-Annually
National Nature Reserves		
Natural Resources Wales	September 2023	Bi-Annually
National Parks		
Natural Resources Wales	February 2018	Annually
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	April 2016	
Natural Resources Wales	March 2023	Bi-Annually
Ramsar Sites		
Natural Resources Wales	February 2024	Bi-Annually
Sites of Special Scientific Interest		
Natural Resources Wales	October 2023	Bi-Annually
Special Areas of Conservation		
Natural Resources Wales	October 2023	Bi-Annually
Special Protection Areas		
Natural Resources Wales	October 2023	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Stantec UK Ltd	Stantec

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Natural Resources Wales** Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**Vale Of Glamorgan County Borough Council** Civic Offices, Holton Road, Barry, South Glamorgan, CF63 4RU	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
6	**Vale Of Glamorgan County Borough Council - Planning Department** Dock Offices, Barry Docks, Barry, South Glamorgan, CF63 4RT	Telephone: 01446 700111 Fax: 01446 745566 Website: www.valeofglamorgan.gov.uk
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MRGF	Blue Lias Formation (Marginal Facies)	Shell-limestone	Not Supplied - Sinemurian
	PO	Porthkerry Member	Limestone and Mudstone, Interbedded	Not Supplied - Hettangian
	LVN	Lavernock Shales Member	Mudstone	Not Supplied - Hettangian
	PNG	Penarth Group	Mudstone	Not Supplied - Rhaetian
	BLI	Blue Lias Formation	Limestone and Mudstone, Interbedded	Not Supplied - Rhaetian
	PNMF	Penarth Group (Marginal Facies)	Sandstone	Not Supplied - Rhaetian
	STM	St Mary's Well Bay Member	Limestone and Mudstone, Interbedded	Not Supplied - Rhaetian
	MMMF	Mercia Mudstone Group (Marginal Facies)	Conglomerate	Not Supplied - Triassic
	HTL	High Tor Limestone Formation	Limestone	Not Supplied - Visean
	HTL	High Tor Limestone Formation	Limestone	Not Supplied - Visean
	GUO	Gully Oolite Formation	Limestone, Ooidal	Not Supplied - Visean
	FPL	Friars Point Limestone Formation	Limestone	Not Supplied - Tournaisian
	BHL	Barry Harbour Limestone Formation	Limestone	Not Supplied - Tournaisian
	BFO	Brofiscin Oolite Formation	Limestone, Ooidal	Not Supplied - Tournaisian
	CCM	Cwmyniscoy Mudstone Formation	Mudstone and Limestone, Interbedded	Not Supplied - Tournaisian
	CCL	Castell Coch Limestone Formation	Limestone, Ooidal	Not Supplied - Tournaisian
	TGW	Tongwynlais Formation	Limestone and Mudstone, Interbedded	Not Supplied - Tournaisian
	UORS	Upper Old Red Sandstone	Sandstone and Siltstone, Interbedded	Not Supplied - Late Devonian
		Faults		

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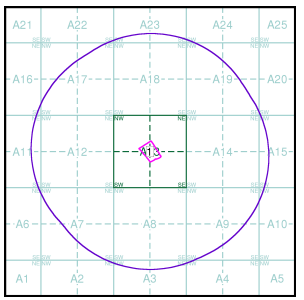
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**262**
Map Name:	**Bridgend**
Map Date:	**1990**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



Order Details:

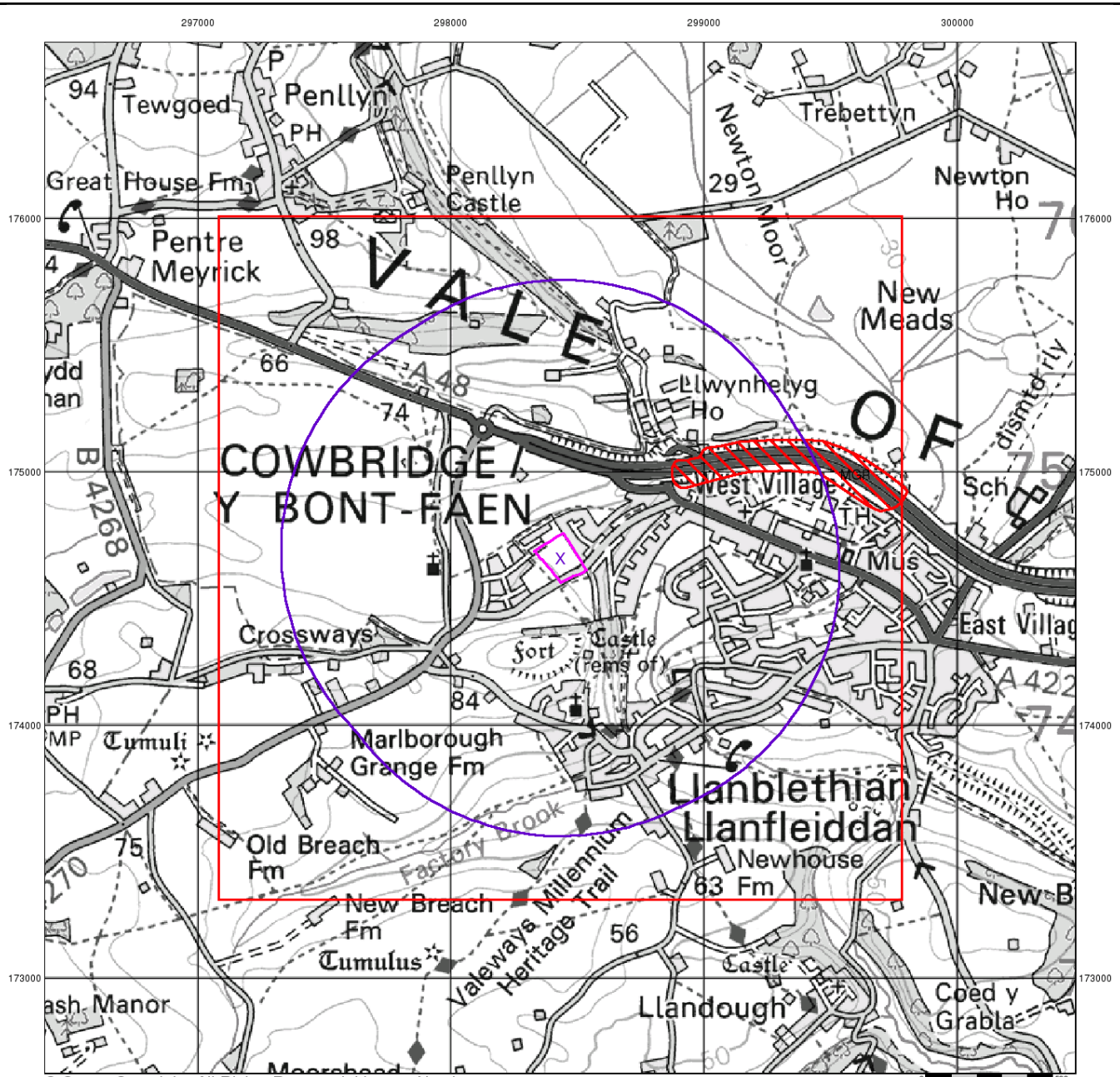
Order Number:	337639253_1_1
Customer Reference:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details:

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark® INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Artificial Ground and Landslip

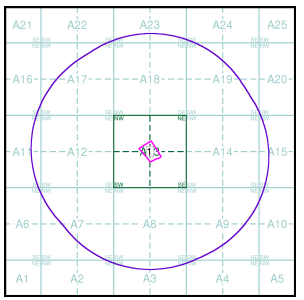
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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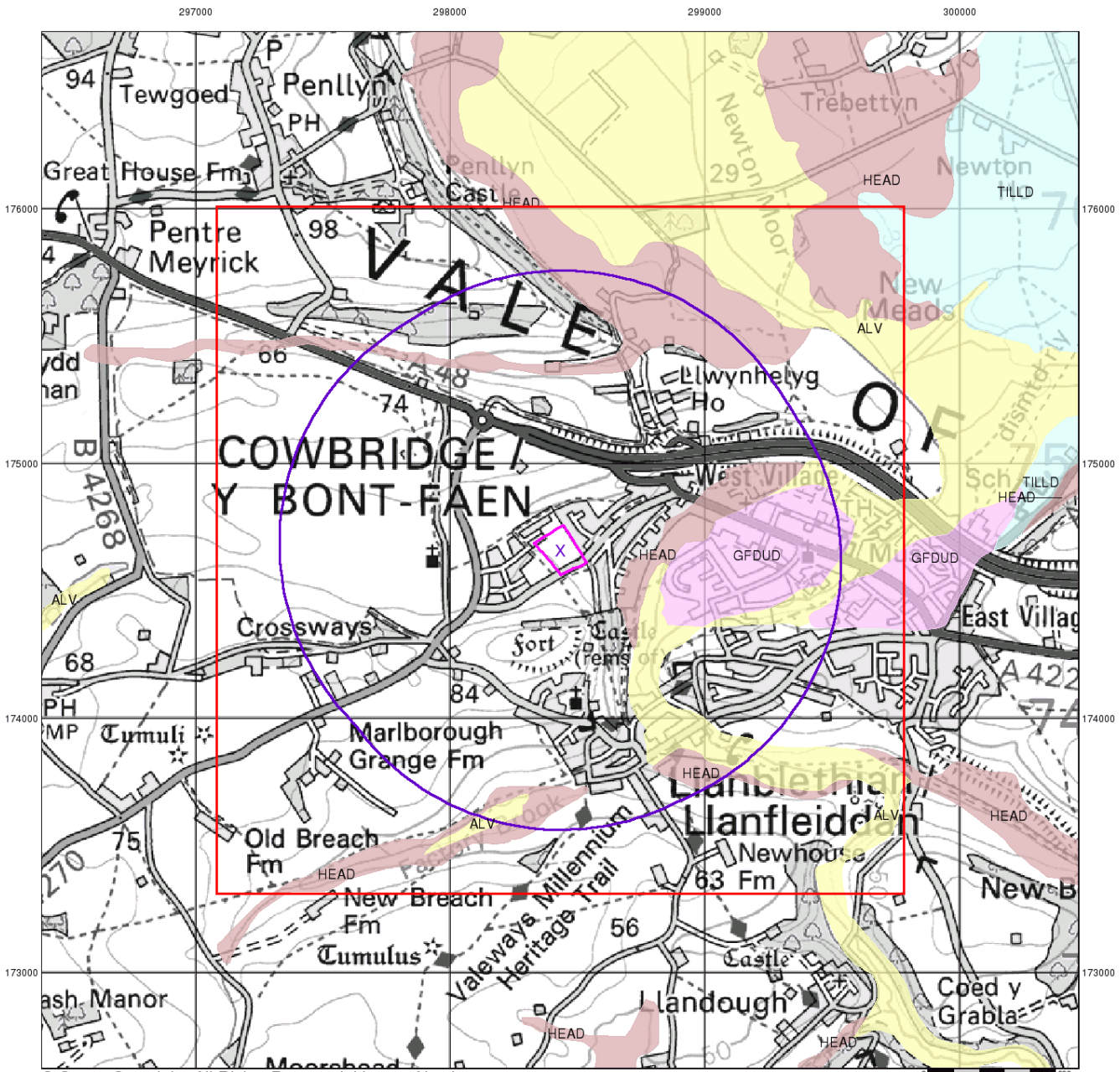

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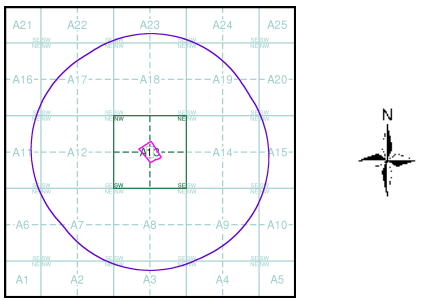
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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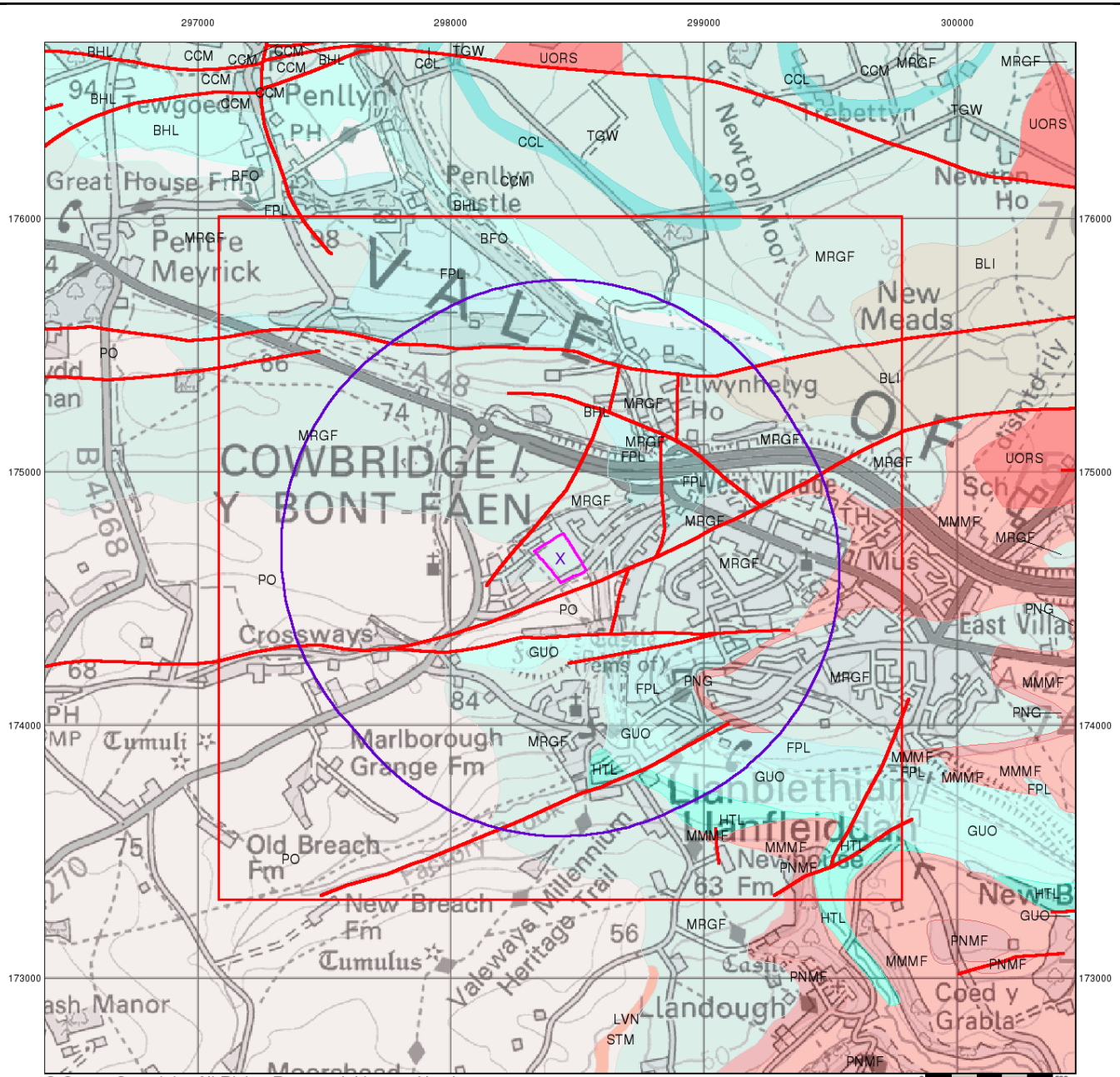

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Bedrock and Faults

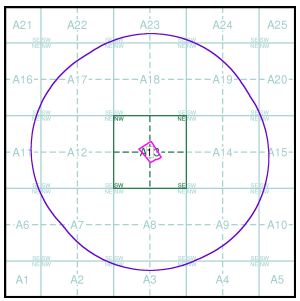
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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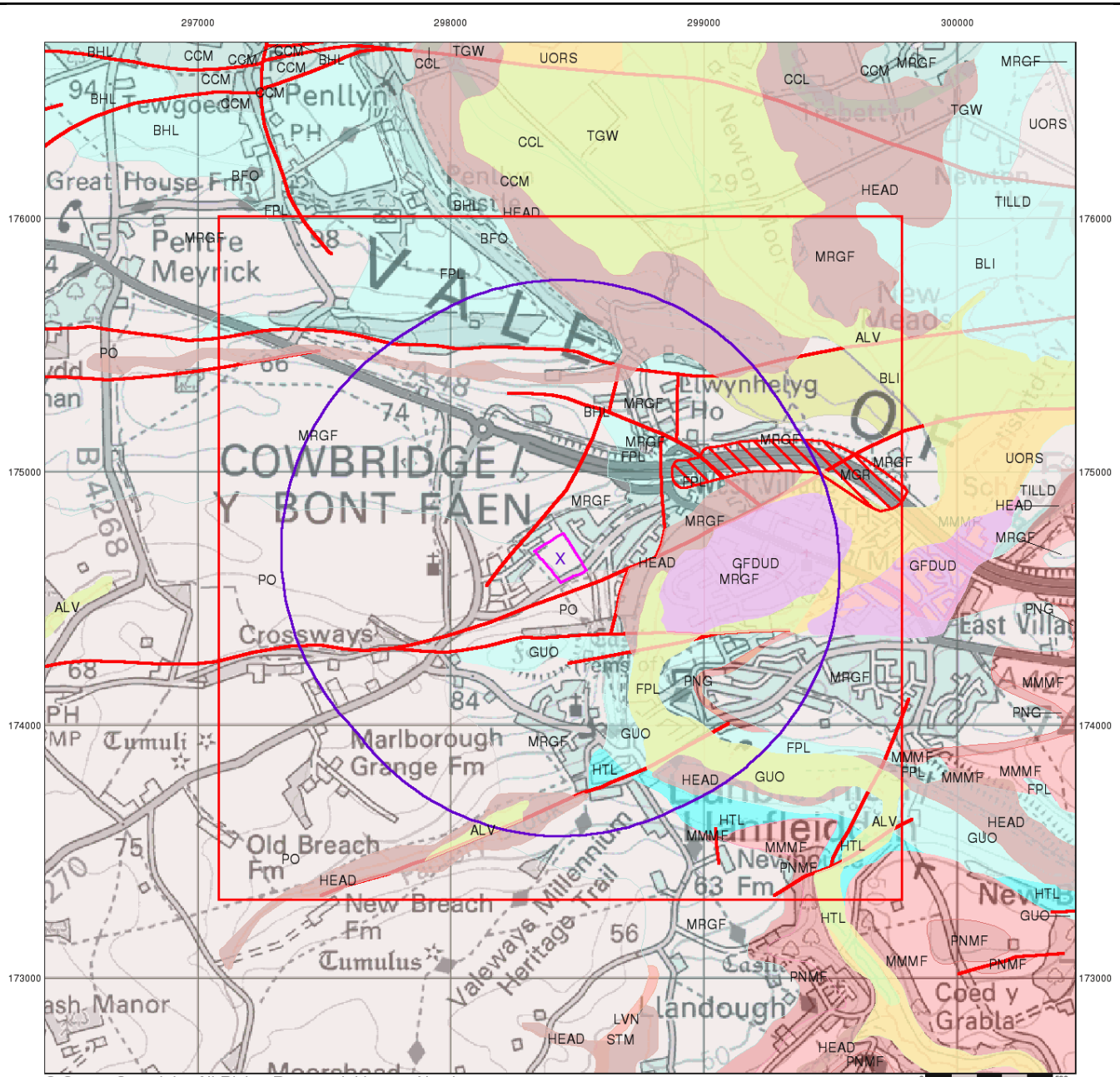

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

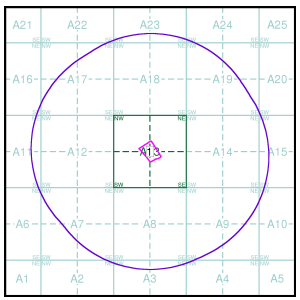
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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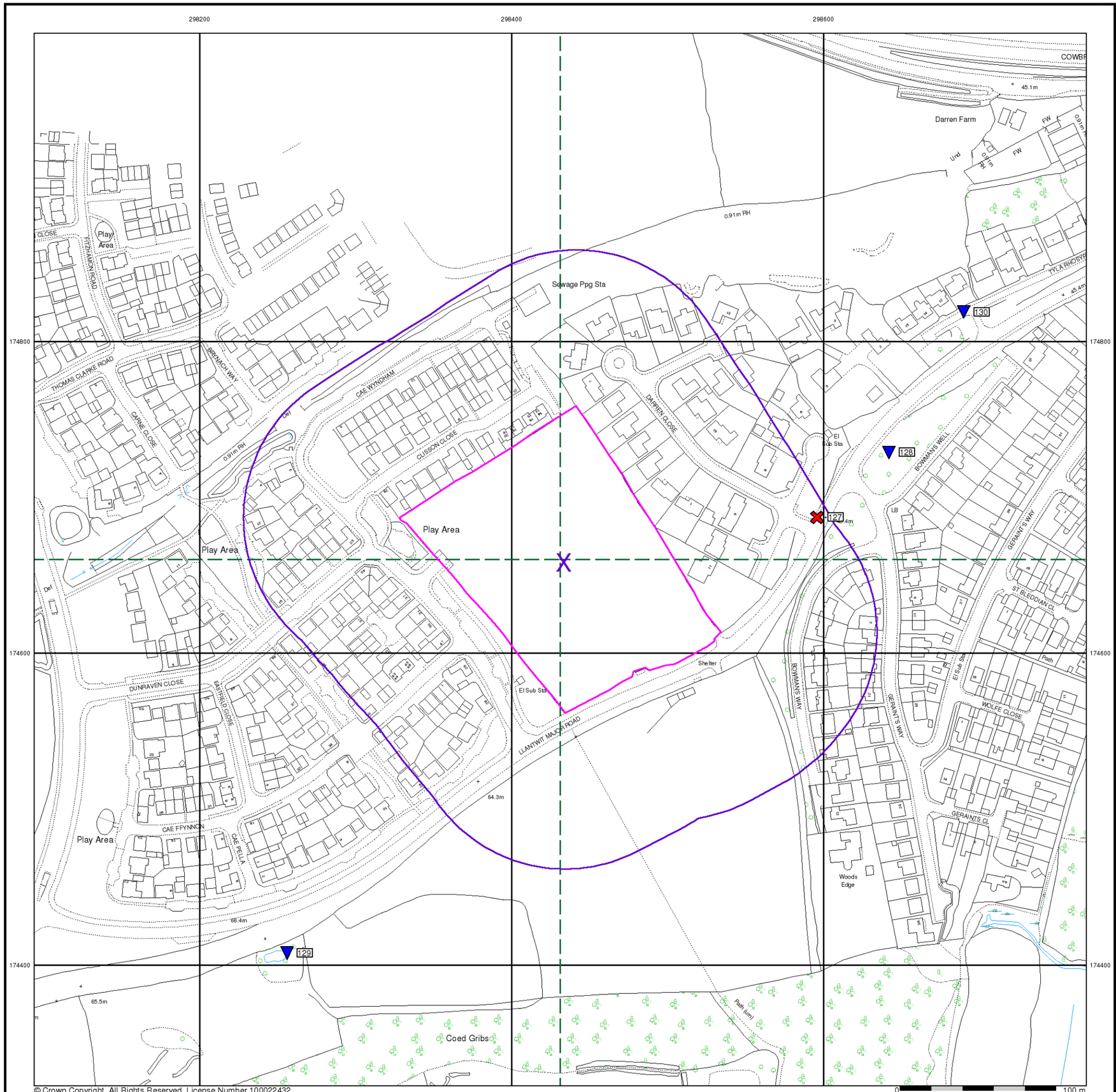
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details:

31, Dunraven Close, COWBRIDGE, CF71 7FG



Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

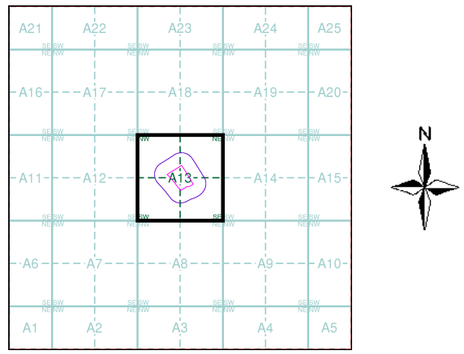
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Plot Buffer (m):	100

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

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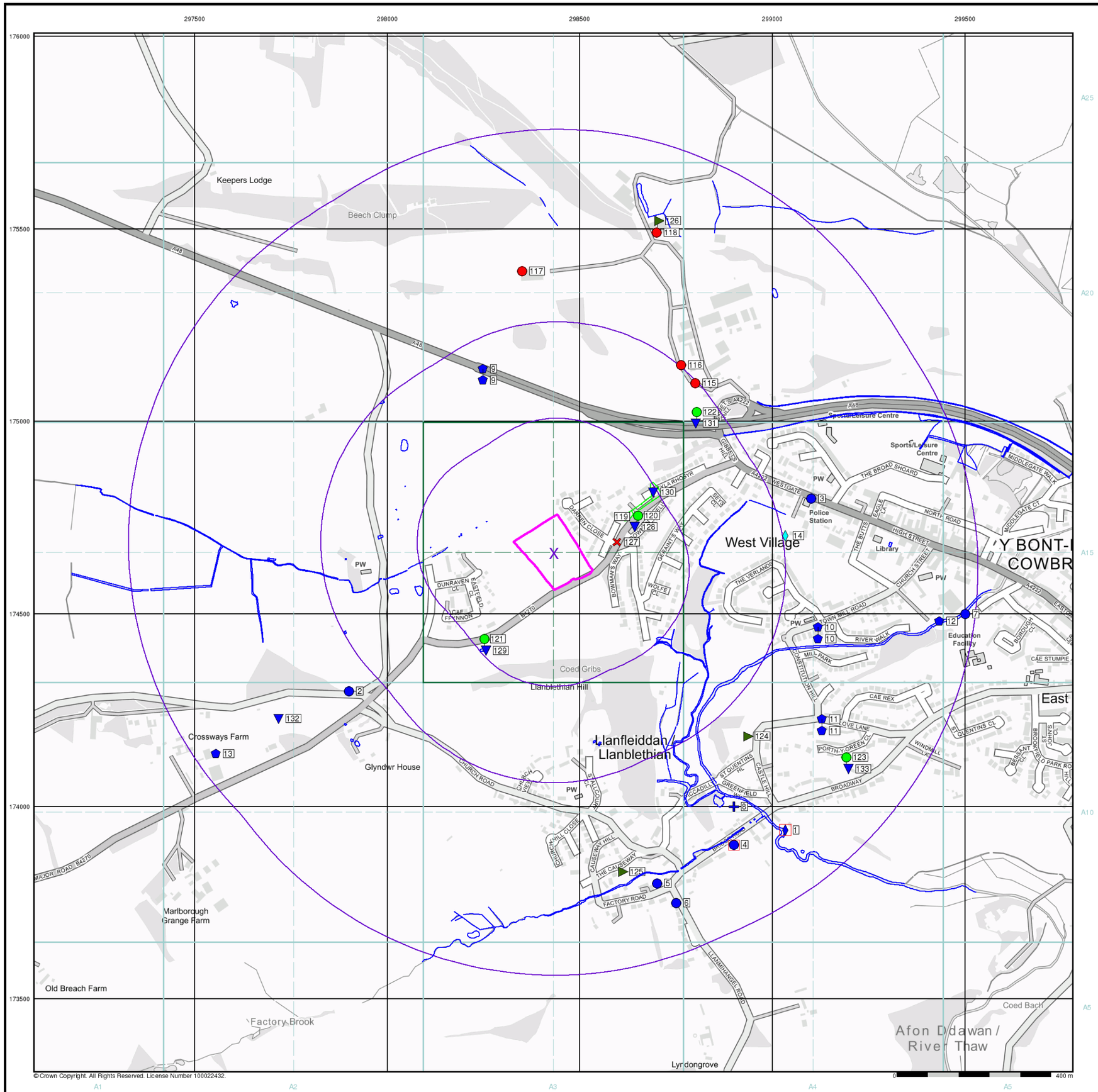


Hydrock

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

COMAH Site | Explosive Site | NIHHS Site

- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

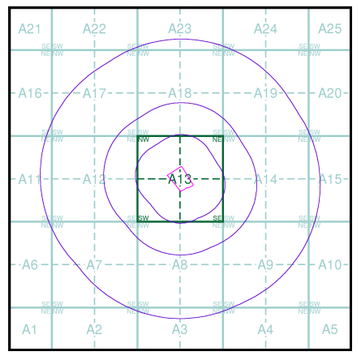
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

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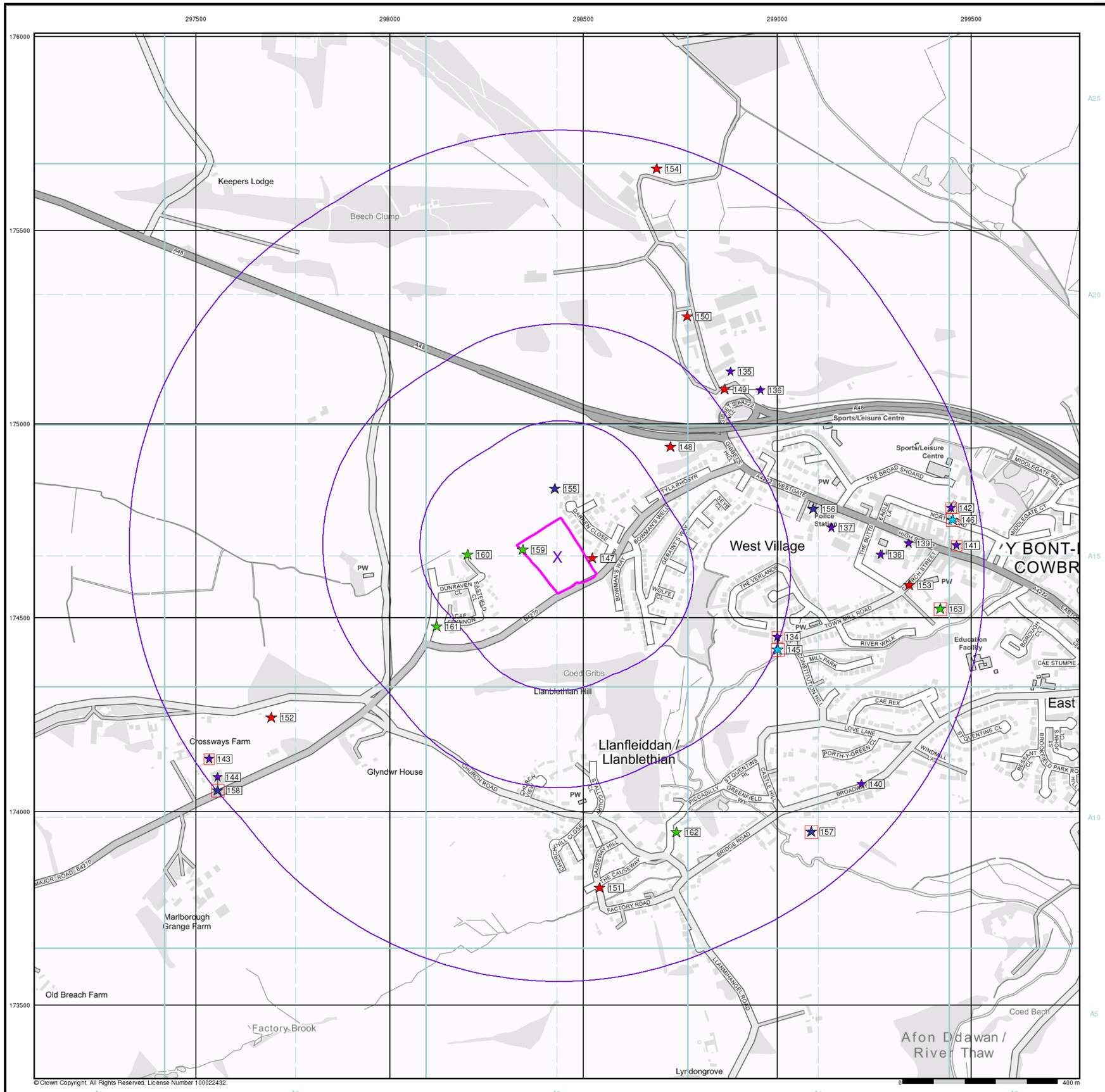


Hydrock

Industrial Land Use Map

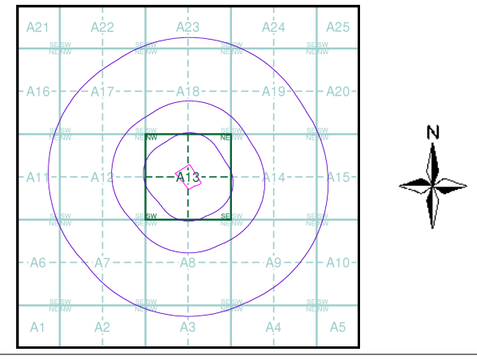
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

Order Number:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

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Hydrock

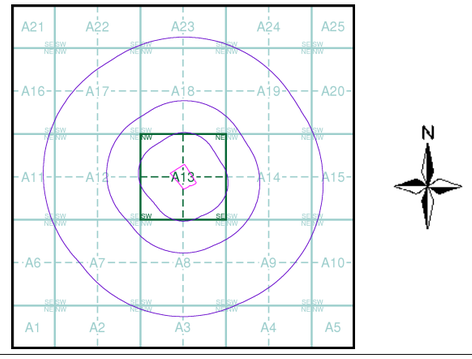
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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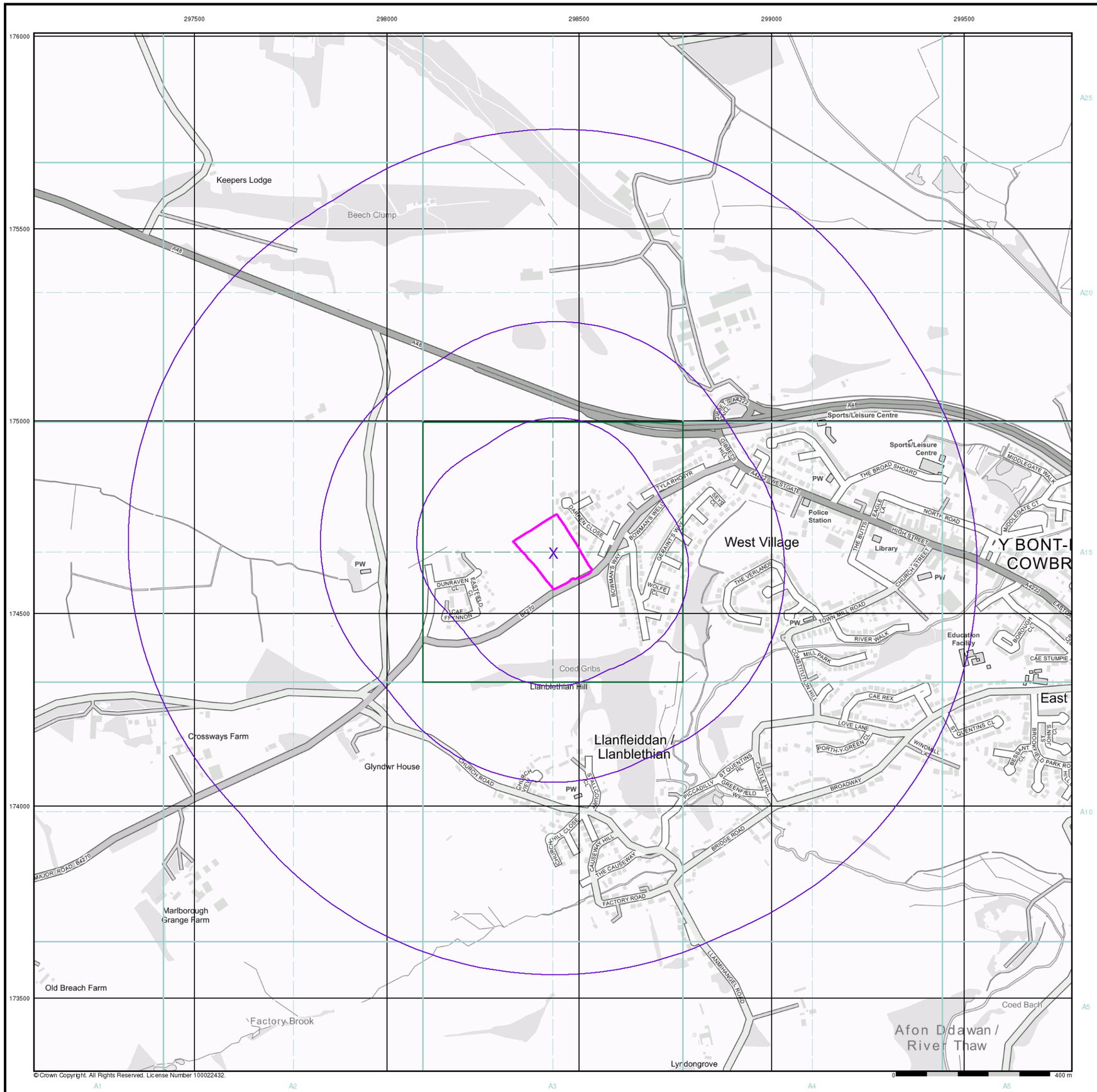


Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

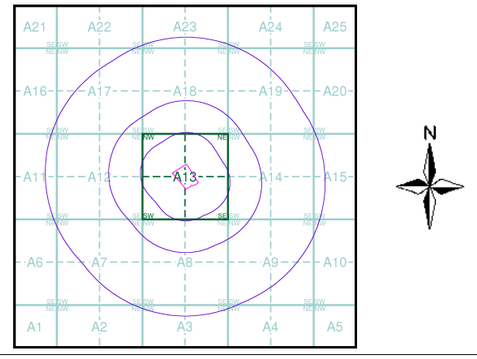
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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Search Buffer (m):	1000

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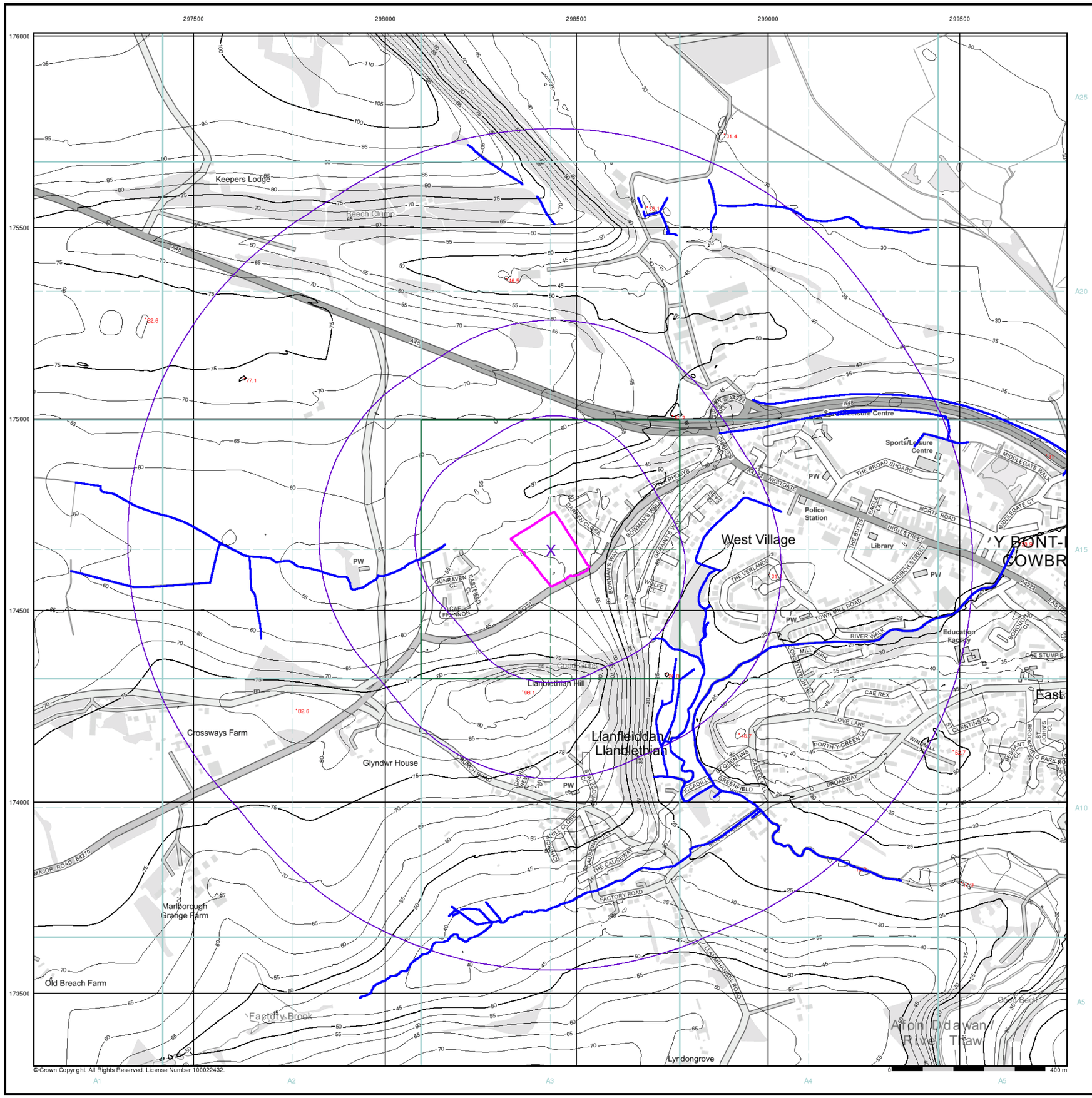


Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

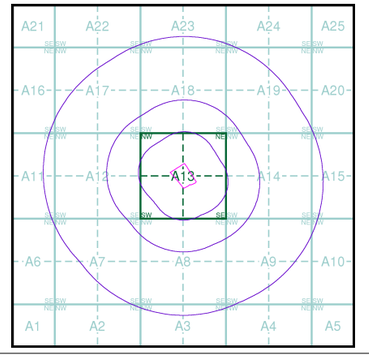
OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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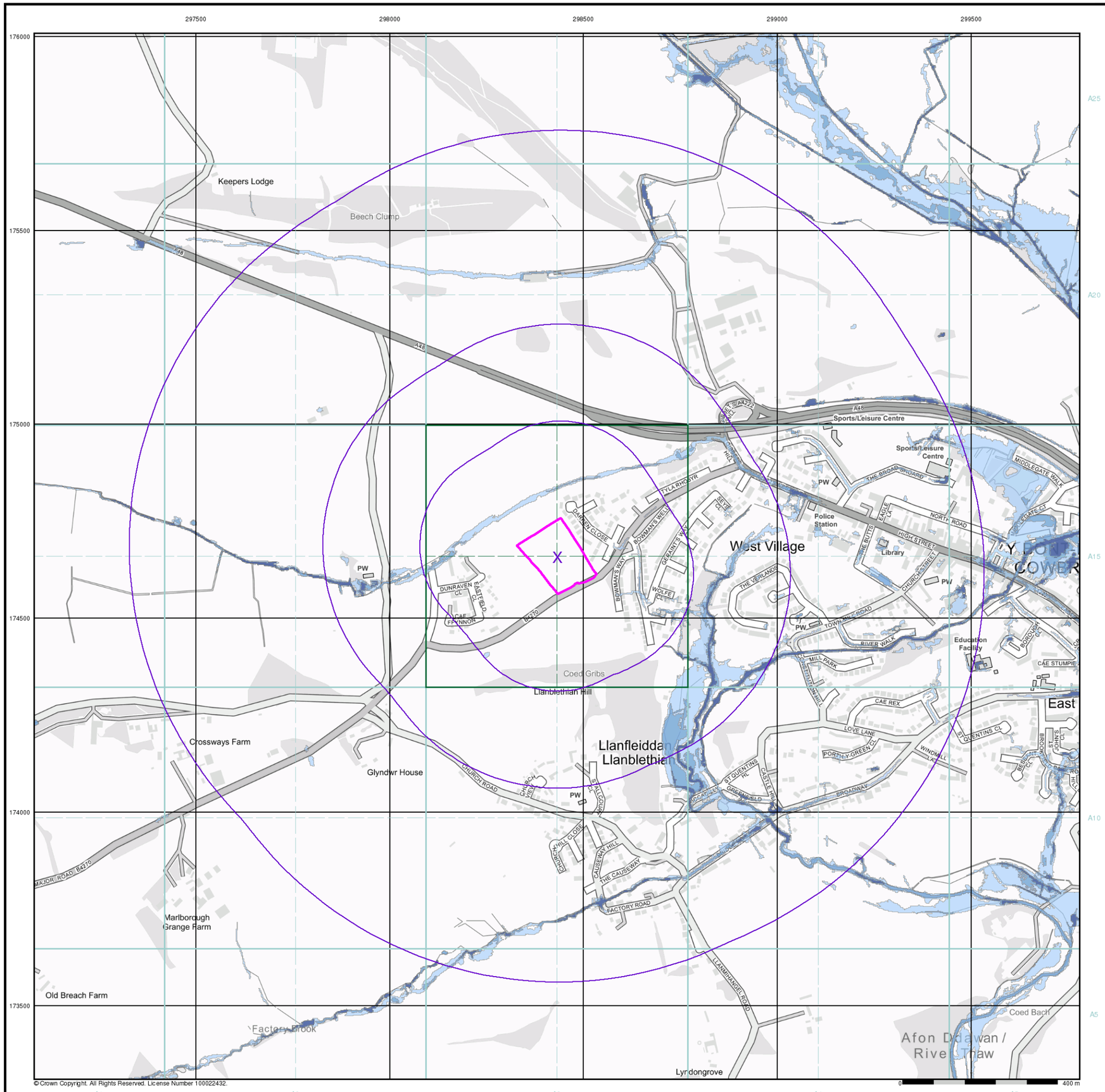


Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water

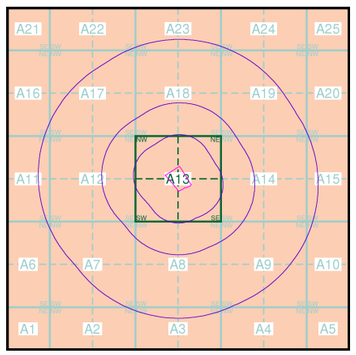
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



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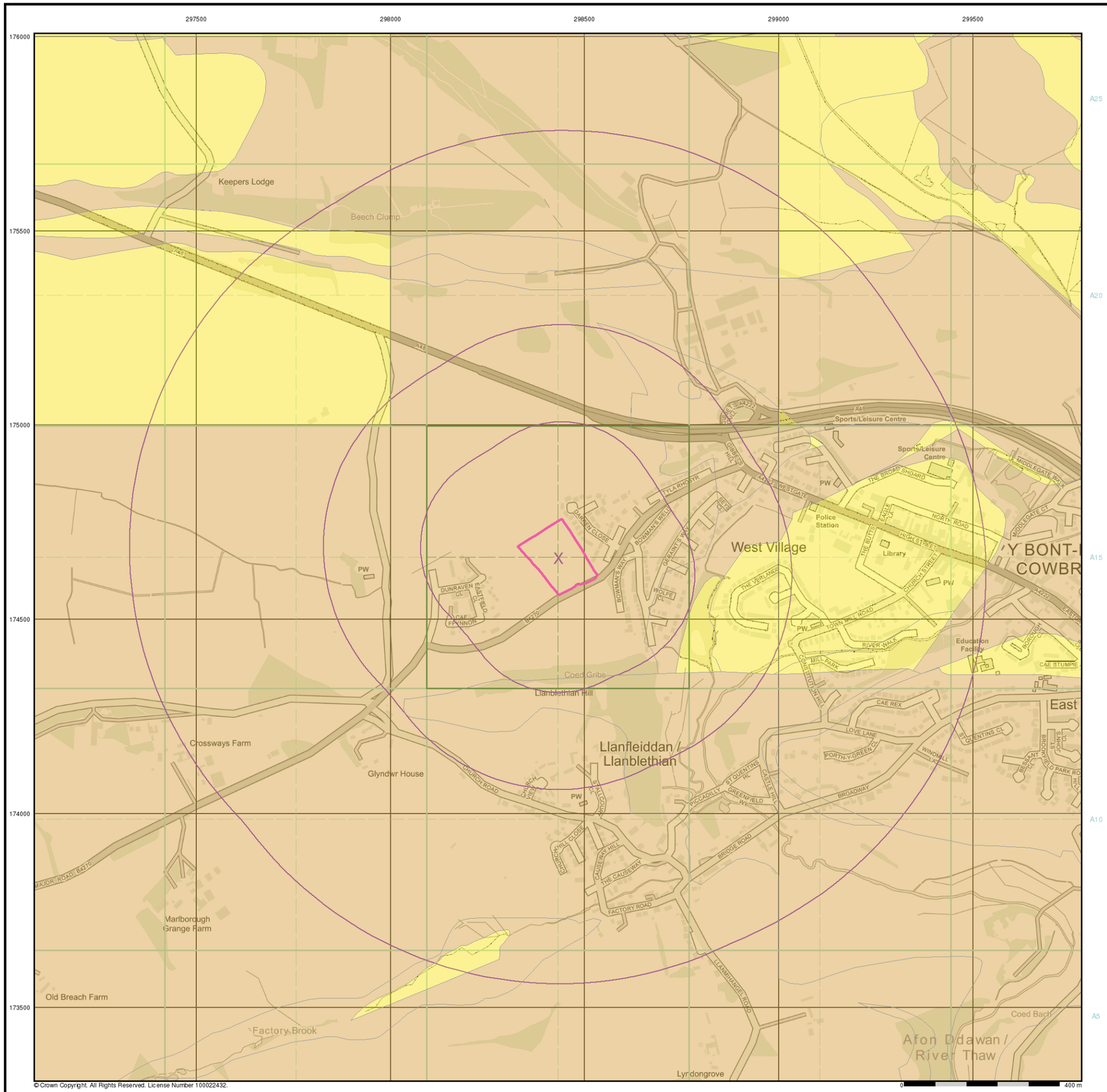


Hydrock

General

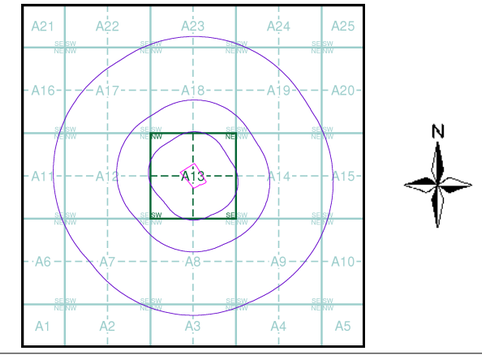
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

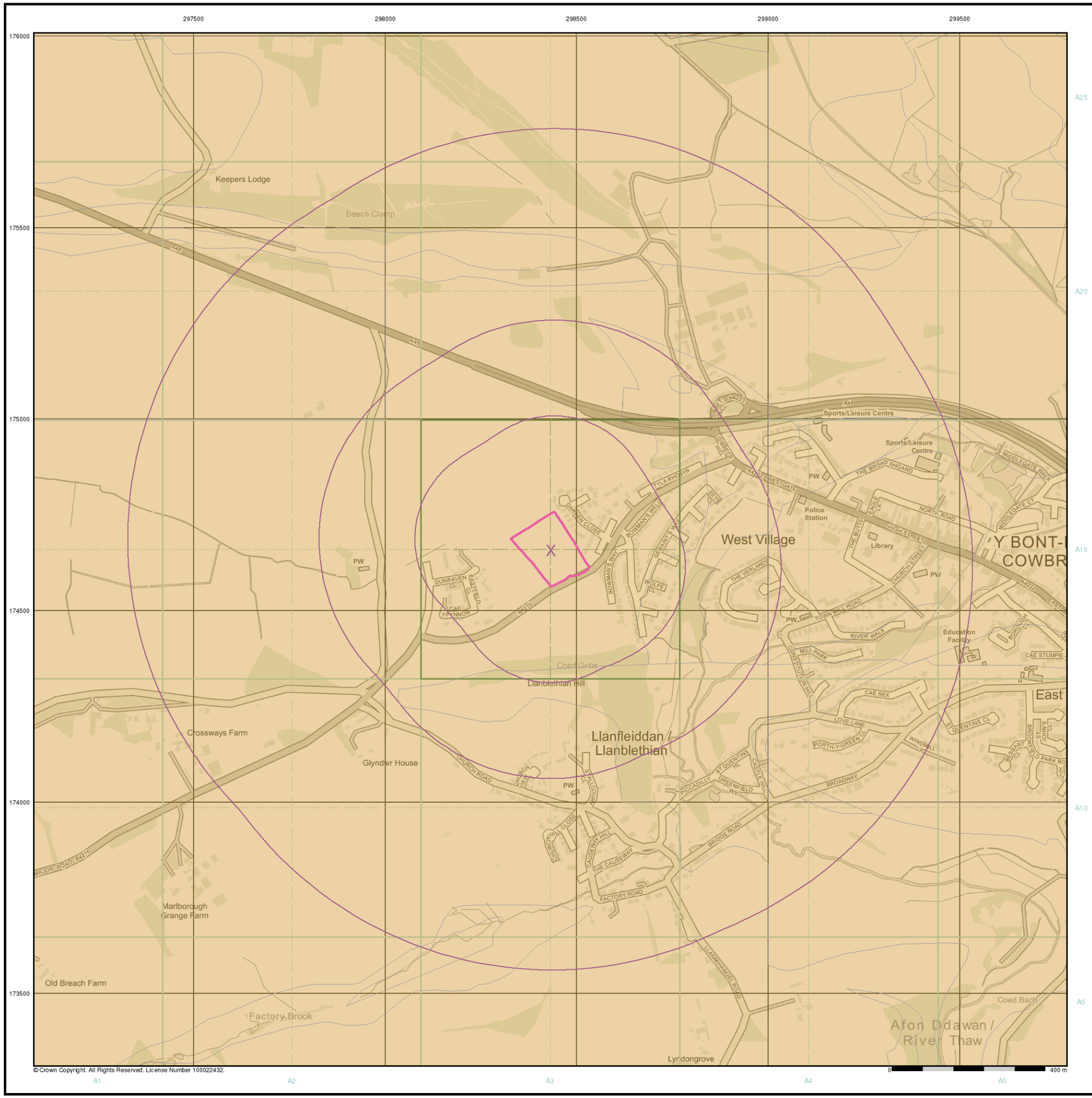
Order Details:	337639253_1_1
Customer Ref:	31793
National Grid Reference:	298430, 174660
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

31, Dunraven Close, COWBRIDGE, CF71 7FG

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

General

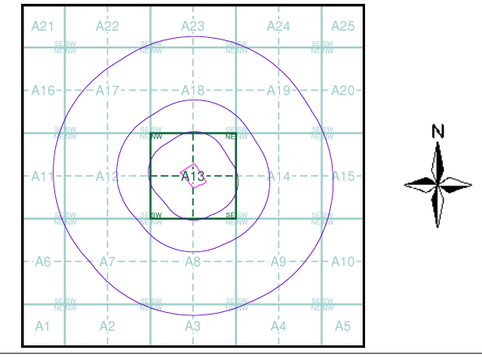
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



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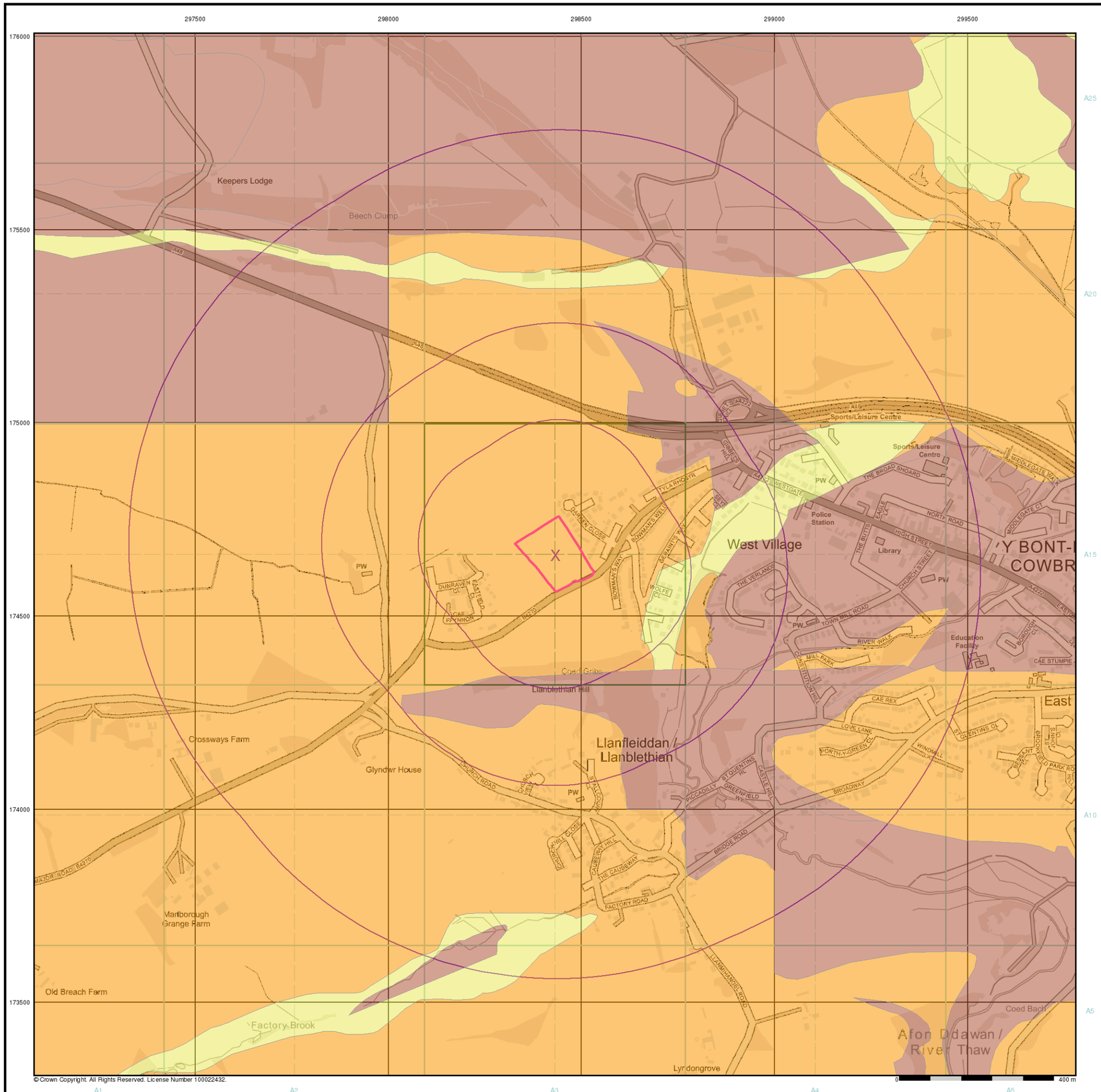


A1 A2 A3 A4 A5

Hydrock

General

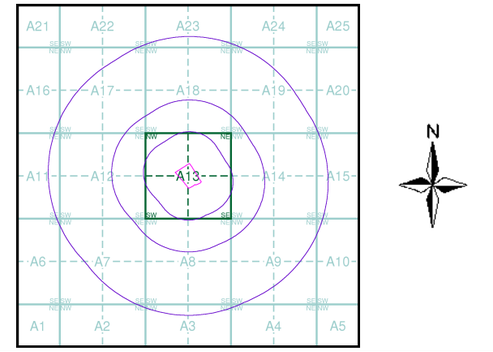
Specified Site Specified Buffer(s) X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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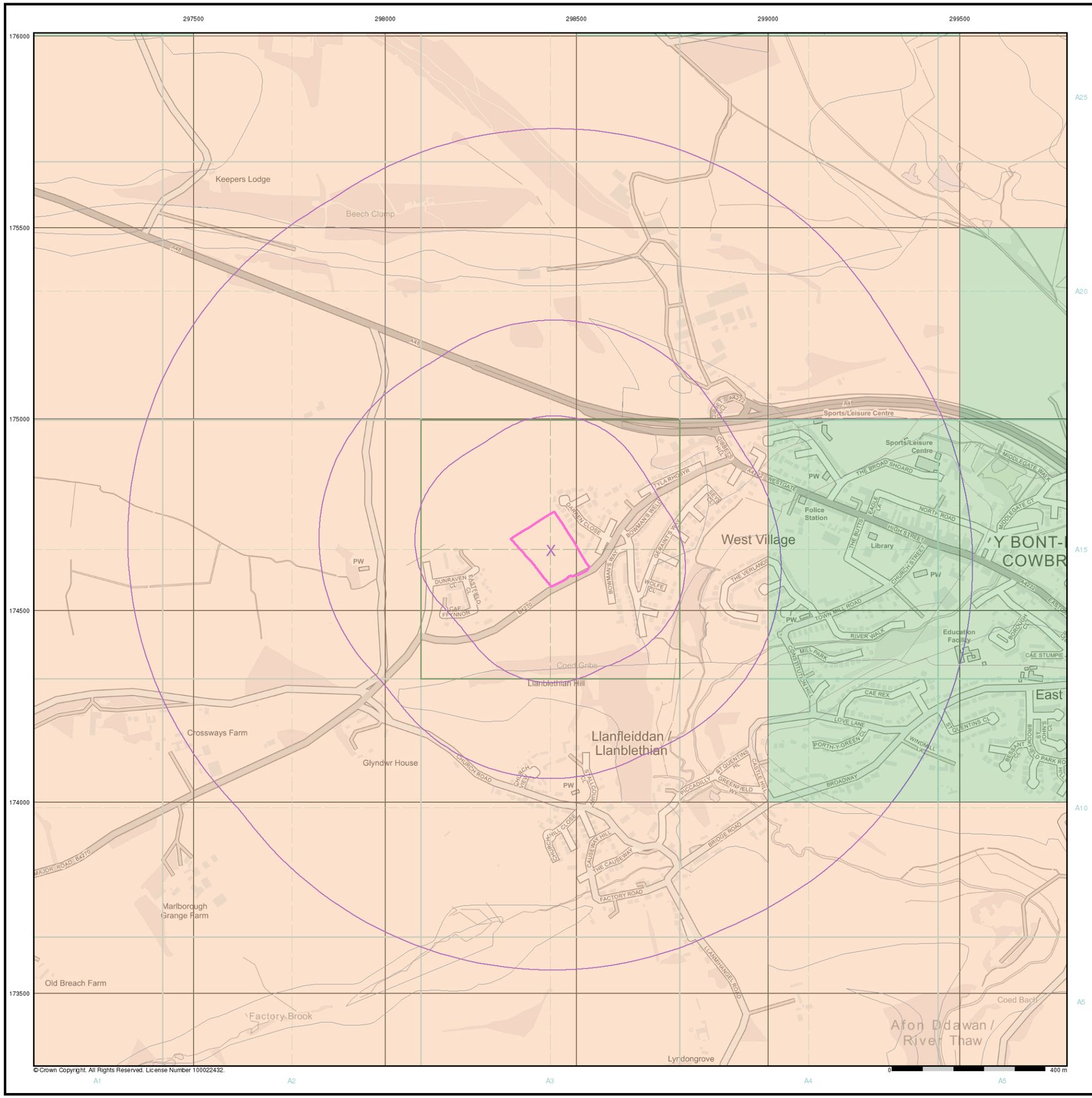


Hydrock

General

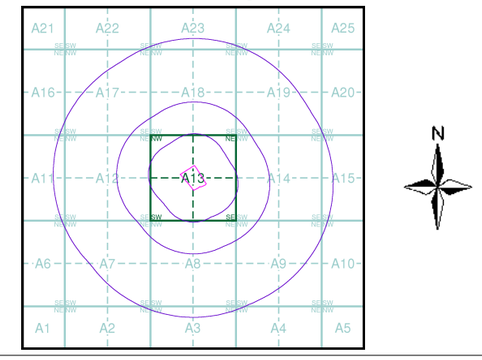
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



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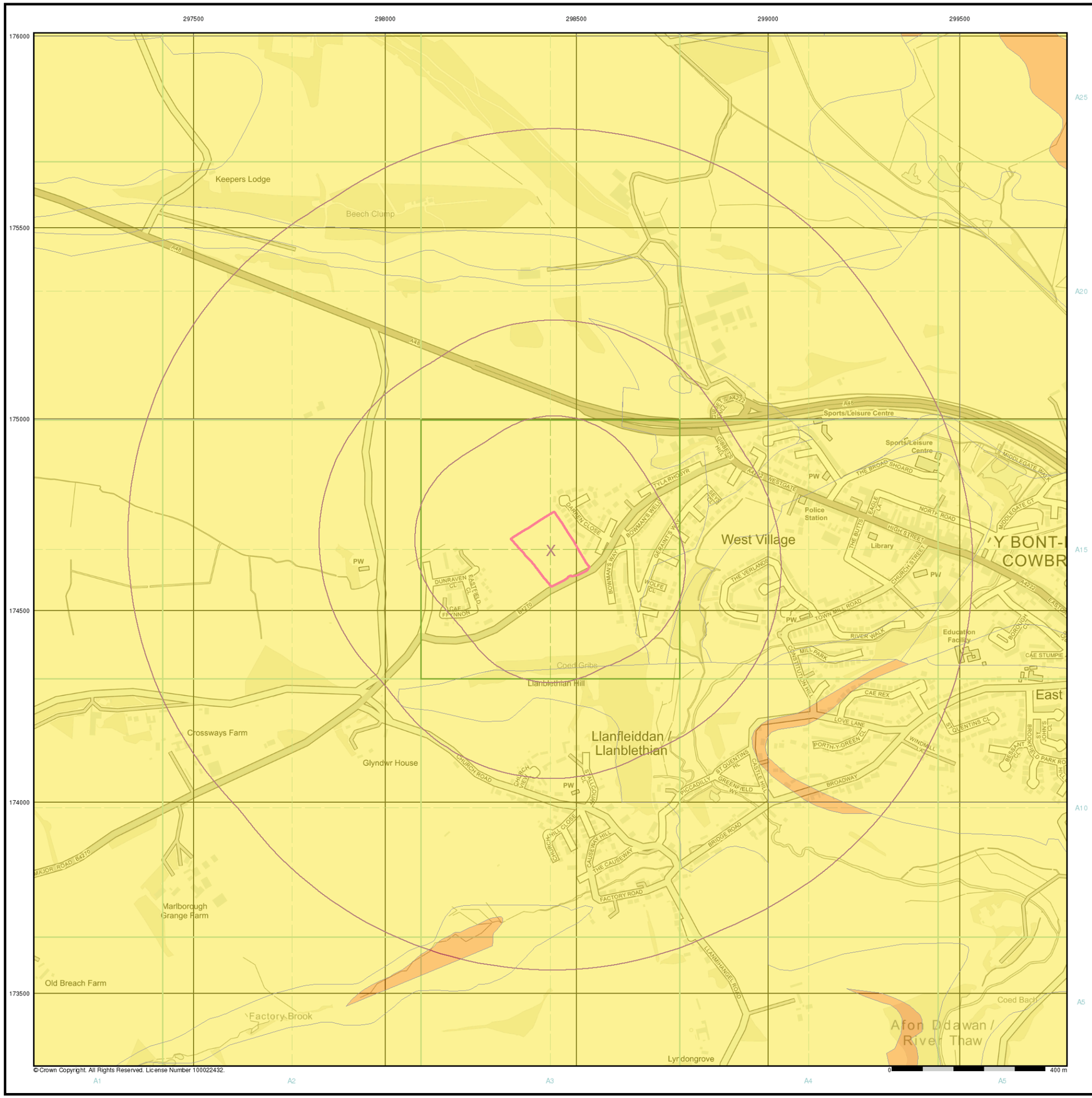


Hydrock

General

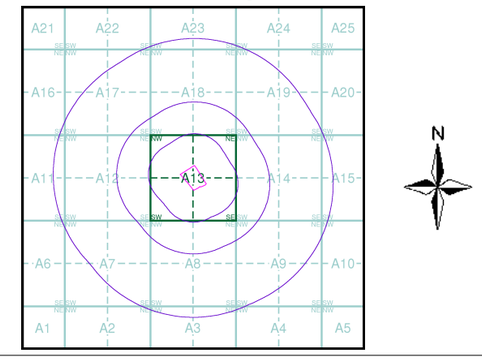
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



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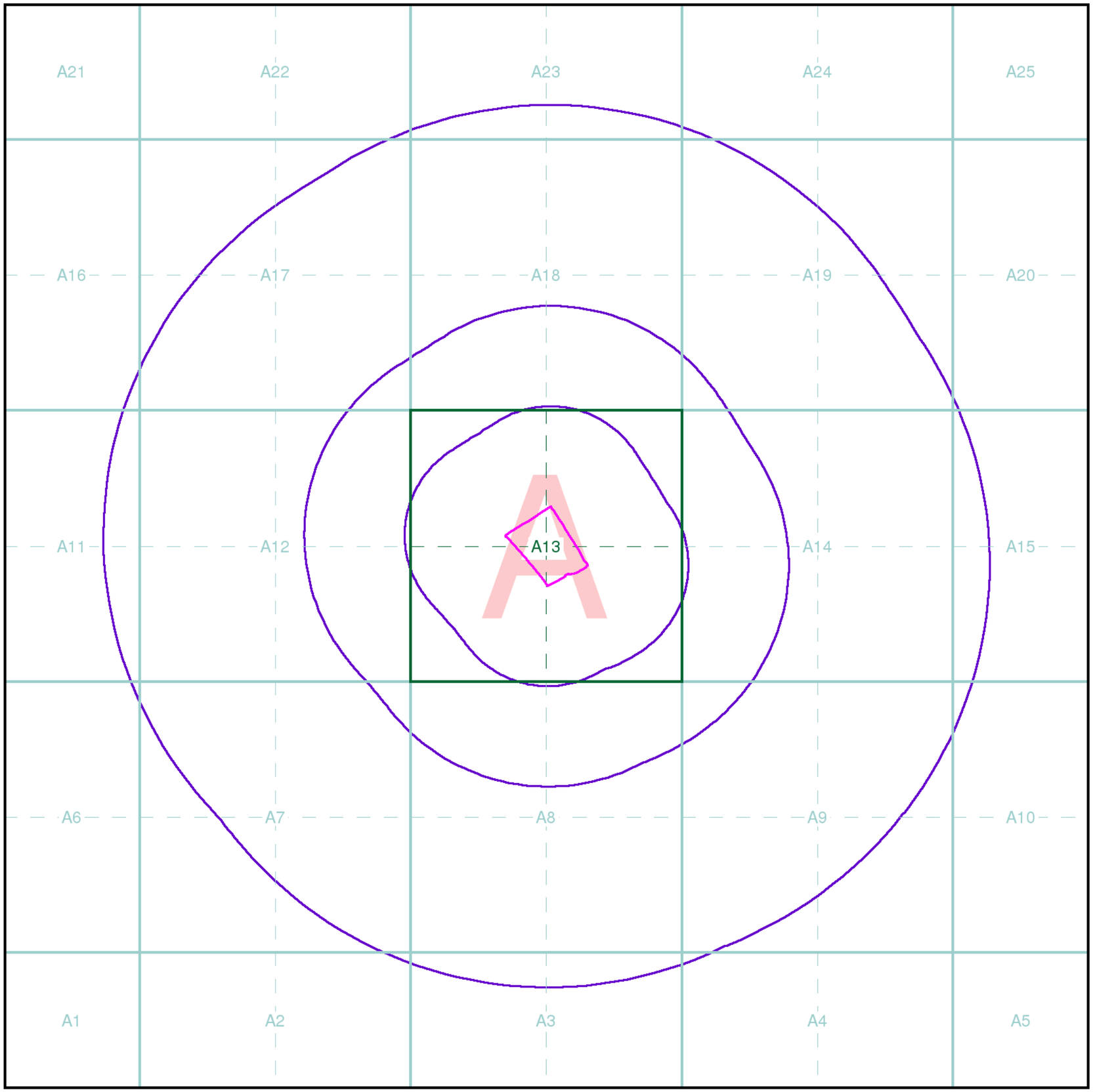

Hydrock

Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Cyfoeth Naturiol Cymru
Natural Resources Wales

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr R Swayne, Hydrock Consultants, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF

Order Details

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Site Details

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Full Terms and Conditions can be found on the following link:
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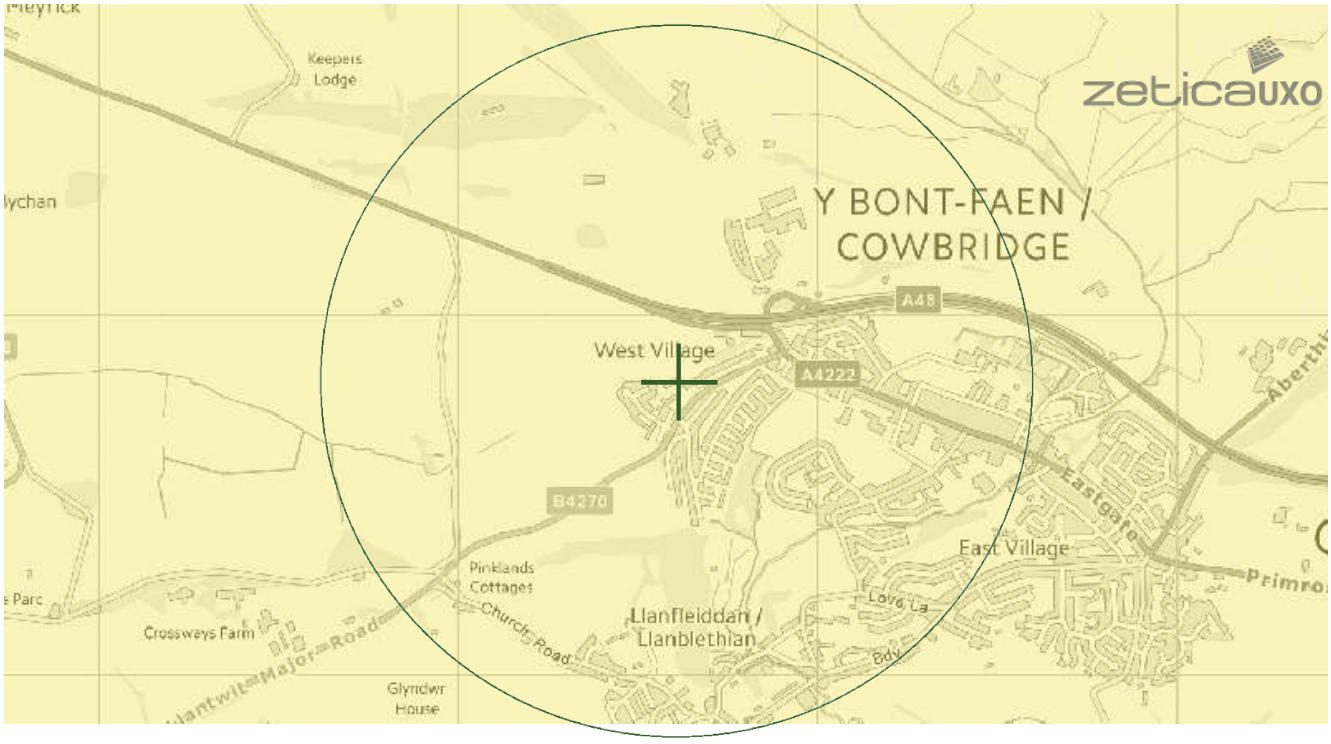
Zetica UXO risk maps

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 298577,174865



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to uxo@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

BGS radon report

GeoReports

British Geological Survey

Emily Wareing
Hydrock Consultants Ltd
Over Court Barns
Over Lane
Almondsbury
Bristol
BS32 4DF

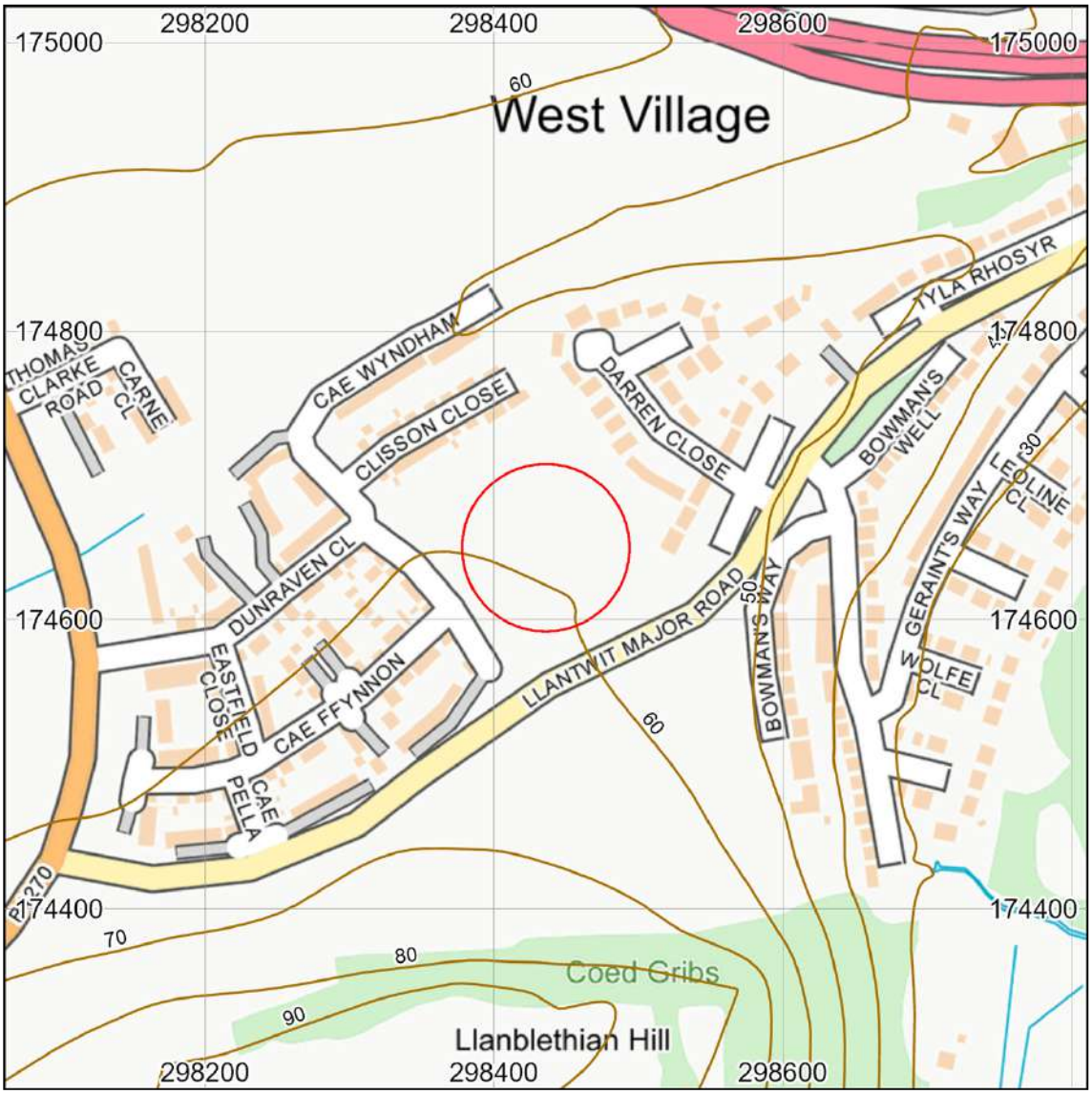
Radon Report

Advisory report on the requirement for radon protective measures in new buildings, conversions and extensions to existing buildings. The report also indicates whether a site is located within a radon Affected Area

Report Id: ***BGS_337360/52650***

Client reference: 31793

Search location



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Search location indicated in red

Area centred at: 298436,174650
Radius of site area: 58 metres

Radon Report: UK

When extensions are made to existing buildings in high radon areas, or new buildings are constructed in these areas, the Building Regulations for England, Wales, Scotland and Northern Ireland require that protective measures are taken against radon entering the building.

This report provides information on whether radon protective measures are required. Depending on the probability of buildings having high radon levels, the Regulations may require either:

1. No protective measures
2. Basic protective measures
3. Full protective measures

This is an advisory report on the requirement for radon protective measures in new buildings, conversions and extensions. The report also indicates whether a site is located within a radon Affected Area

Requirement for radon protective measures

The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2023 edition), which also provides guidance on what to do if the* result *indicates that protective measures are required.*

Is the property in an area where radon protective measures are required for new buildings or extensions to existing ones as described in publication BR211 (2023 edition) Radon: Guidance on protective measures for new buildings?

FULL RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

More details of the protective measures required are available in *BR211 Radon: Guidance on protective measures for new buildings (2023 Edition)*.

Whether or not the radon level in a building is above or below the radon Action Level can only be established by having the building tested. The UKHSA provides a radon testing service which can be accessed at www.ukradon.org or by telephone (01235 822622).

If you require further information or guidance, you should contact your local authority building control officer or approved inspector.

Radon Affected Area

	% Homes estimated to be at or above the action level
	0-1%
	1-3%
	3-5%
	5-10%
	10-30%
	30-100%

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Scale: 1:10 000 (1cm = 100 m)
Search area indicated in red

Is the property in a radon Affected Area as defined by the UK Health Security Agency (UKHSA) and if so what percentage of homes are estimated to be at or above the Action Level? YES

Additional Information

THE PROPERTY IS IN A RADON AFFECTED AREA WHERE 10 TO 30% OF HOMES ARE ESTIMATED TO BE AT OR ABOVE THE ACTION LEVEL.

The UKHSA recommends a radon 'Action Level' of 200 Becquerels per cubic metre of air (Bq m^{-3}) for the annual average of the radon gas concentration in a home. Where 1% or more of homes are estimated to be at or above the Action Level the area should be regarded as a radon Affected Area.

This report informs you whether the property is in a radon Affected Area and the percentage of homes that are estimated to be at or above the radon Action Level at this location. Being in an Affected Area does not necessarily mean there is a high radon level within the property; the only way to determine the radon level is to carry out a radon measurement.

The UKHSA advises that radon gas should be measured in all properties within radon Affected Areas and that homes with radon levels at or above the Action Level (200 Bq m^{-3}) should be remediated. Householders with levels between the Target Level (100 Bq m^{-3}) and Action Level should seriously consider reducing their radon level, especially if they are at greater risk, such as if they are current or ex smokers. Whether or not a home is in fact above or below the Action Level or Target Level can only be established by having the building tested. The UKHSA provides a validated radon testing service which can be accessed at www.ukradon.org.

The information in this report provides an answer to one of the standard legal enquiries on house purchase in England and Wales, known as Law Society CON29 Enquiries of the Local Authority (2016); 3.14 Radon Gas: Do records indicate that the property is in a “Radon Affected Area” as identified by the UKHSA. The data can also be used to advise house buyers and sellers in Scotland and Northern Ireland.

If you are buying a new build property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

If you are buying a currently occupied property in a radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were at or above the radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and if the results of re-testing confirmed the effectiveness of the measures.

Further information on radon is available from the UKHSA at www.ukradon.org.

What is radon?

Radon is a naturally occurring radioactive gas, which is produced by the radioactive decay of radium which, in turn, is derived from the radioactive decay of uranium. Uranium is found in small quantities in all soils and rocks, although the amount varies from place to place. Radon released from rocks and soils is quickly diluted in the atmosphere. Concentrations in the open air are normally very low and do not present a hazard. Radon that enters enclosed spaces such as some buildings (particularly basements), caves, mines, and tunnels may reach high concentrations in some circumstances. The construction method and degree of ventilation will influence radon levels in individual buildings. A person's exposure to radon will also vary according to how particular buildings and spaces are used.

Inhalation of the radioactive decay products of radon gas increases the chance of developing lung cancer. If individuals are exposed to high concentrations for significant periods of time, there may be cause for concern. In order to limit the risk to individuals, the Government has adopted an Action Level for radon in homes of 200 becquerels per cubic metre (Bq m^{-3}). The Government advises householders that, where the radon level is at or above the Action Level, measures should be taken to reduce the concentration.

Radon in workplaces

The Ionising Radiation Regulations 2017 require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.** BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.uk website: www.brebookshop.com

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General Terms & Conditions

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Important notes about this Report

- The data, information and related records supplied in this Report by BGS can only be indicative and should not be taken as a substitute for specialist interpretations, professional advice and/or detailed site investigations. You must seek professional advice before making technical interpretations on the basis of the materials provided.
- Geological observations and interpretations are made according to the prevailing understanding of the subject at the time. The quality of such observations and interpretations may be affected by the availability of new data, by subsequent advances in knowledge, improved methods of interpretation, and better access to sampling locations.
- Raw data may have been transcribed from analogue to digital format, or may have been acquired by means of automated measuring techniques. Although such processes are subjected to quality control to ensure reliability where possible, some raw data may have been processed without human intervention and may in consequence contain undetected errors.
- Detail, which is clearly defined and accurately depicted on large-scale maps, may be lost when small-scale maps are derived from them.
- Although samples and records are maintained with all reasonable care, there may be some deterioration in the long term.
- The most appropriate techniques for copying original records are used, but there may be some loss of detail and dimensional distortion when such records are copied.
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- The topography shown on any map extracts is based on the latest OS mapping and is not necessarily the same as that used in the original compilation of the BGS geological map, and to which the geological linework available at that time was fitted.
- Note that for some sites, the latest available records may be historical in nature, and while every effort is made to place the analysis in a modern geological context, it is possible in some cases that the detailed geology at a site may differ from that described.

Report issued by
BGS Enquiry Service

BGS SuDS Report

GeoReports

British Geological Survey

Emily Wareing
Hydrock Consultants Ltd
Over Court Barns
Over Lane
Almondsbury
Bristol
BS32 4DF

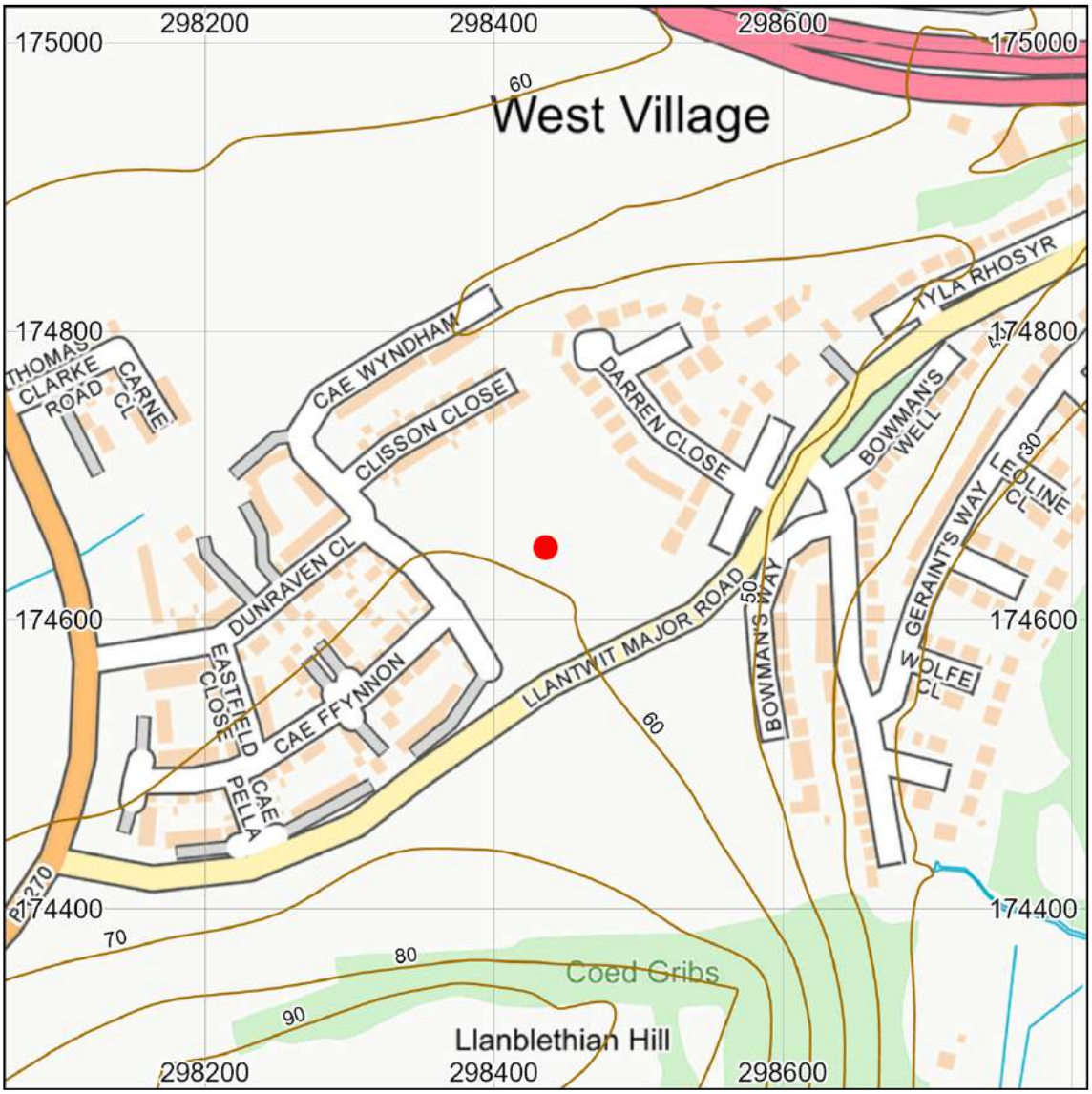
Infiltration SuDS GeoReport:

This report provides information on the suitability of the subsurface for the installation of infiltration sustainable drainage systems (SuDS). It provides information on the properties of the subsurface with respect to significant constraints, drainage, ground stability and groundwater quality protection.

Report Id: ***BGS_337360/52651***

Client reference: 31793

Search location



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Search location indicated in red

Point centred at: 298436,174650

Assessment for an infiltration sustainable drainage system

Introduction

Sustainable drainage systems (SuDS) are drainage solutions that manage the volume and quality of surface water close to where it falls as rain. They aim to reduce flow rates to rivers, increase local water storage capacity and reduce the transport of pollutants to the water environment. There are four main types of SuDS, which are often designed to be used in sequence. They comprise:

- **source control:** systems that control the rate of runoff
- **pre-treatment:** systems that remove sediments and pollutants
- **retention:** systems that delay the discharge of water by providing surface storage
- **infiltration:** systems that mimic natural recharge to the ground.

This report focuses on infiltration SuDS. It provides subsurface information on the properties of the ground with respect to drainage, ground stability and groundwater quality protection. It is intended principally for those involved in the preliminary assessment of the suitability of the ground for infiltration SuDS, and those involved in assessing proposals from others for sustainable drainage, but it may also be useful to help house-holders judge whether or not further professional advice should be sought. If in doubt, users should consult a suitably-qualified professional about the results in this report before making any decisions based upon it.

This GeoReport is structured in two parts:

- **Part 1. Summary data**.

  Comprises three maps that summarise the data contained within Part 2.

- **Part 2. Detailed data**.

  Comprises a further 24 maps in four thematic sections:

  - **Very significant constraints.** Maps highlight areas where infiltration may result in adverse impacts due to factors including: ground instability (soluble rocks, non-coal shallow mining and landslide hazards); persistent shallow groundwater, or the presence of made ground, which may represent a ground stability or contamination hazard.
  - **Drainage potential**. Maps indicate the drainage potential of the ground, by considering subsurface permeability, depth to groundwater and the presence of floodplain deposits.
  - **Ground stability**. Maps indicate the presence of hazards that have the potential to cause ground instability resulting in damage to some buildings and structures, if water is infiltrated to the ground.
  - **Groundwater protection**. Maps provide key indicators to help determine whether the groundwater may be susceptible to deterioration in quality as a result of infiltration.

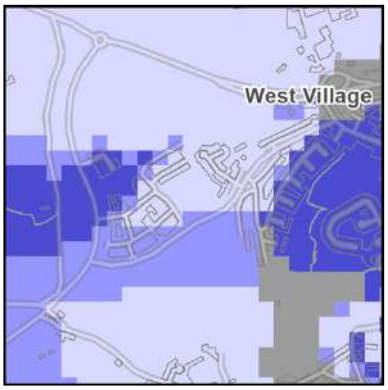
This report considers the suitability of the subsurface for the installation of infiltration SuDS, such as soakaways, infiltration basins or permeable pavements. It provides subsurface data to indicate whether, and which type of infiltration system may be appropriate. It does not state that infiltration SuDS are, or are not, appropriate as this is highly dependent on the design of the individual system. This report therefore describes the subsurface conditions at the site, allowing the reader to determine the suitability of the site for infiltration SuDS.

The map and text data in this report is similar to that provided in the '*Infiltration SuDS Map: Detailed'* national map product. For further information about the data, consult the '*User Guide for the Infiltration SuDS Map: Detailed'*, available from http://nora.nerc.ac.uk/16618/.

PART 1: SUMMARY DATA

This section provides a summary of the data.

In terms of the drainage potential, is the ground suitable for infiltration SuDS?



- Highly compatible for infiltration SuDS. The subsurface is likely to be suitable for free-draining infiltration SuDS.
- Probably compatible for infiltration SuDS. The subsurface is probably suitable although the design may be influenced by the ground conditions.
- Opportunities for bespoke infiltration SuDS. The subsurface is potentially suitable although the design will be influenced by the ground conditions.
- Very significant constraints are indicated. There is a very significant potential for one or more hazards associated with infiltration.

Is ground instability likely to be a problem?

- Increased infiltration is very unlikely to result in ground instability.
- Ground instability problems may be present or anticipated, but increased infiltration is unlikely to result in ground instability.
- Ground instability problems are probably present. Increased infiltration may result in ground instability.
- There is a very significant potential for one or more geohazards associated with infiltration.

Is the groundwater susceptible to deterioration in quality?

- The groundwater is not expected to be especially vulnerable to contamination.
- The groundwater may be vulnerable to contamination.
- The groundwater is likely to be vulnerable to contaminants.
- Made ground is present at the surface. Infiltration may increase the possibility of remobilising pollutants.

PART 2: DETAILED DATA

This section provides further information about the properties of the ground and will help assess the suitability of the ground for infiltration SuDS.

Section 1. Very significant constraints

Where maps are overlain by grey polygons, geological or hydrogeological hazards may exist that could be made worse by infiltration. The following hazards are considered:

- soluble rocks
- landslides
- shallow mining (not including coal)
- shallow groundwater
- made ground

For more information read ‘Explanation of terms’ at the end of this report.

Soluble rock hazard

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■ Very significant soluble rock hazard.

Soluble rocks are present with a very significant possibility of localised subsidence that could be initiated or made worse by infiltration. The site investigation should consider whether the potential for or the consequences of subsidence as a result of infiltration are significant.

☐ Very significant soluble rock hazards are not present; however this hazard may still need to be considered. See Part 3.

Landslide hazard

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■ Very significant landslide hazard.

Slope instability problems are almost certainly present and may be active. An increase in moisture content as a result of infiltration may cause the slope to fail. The site investigation should consider whether the potential for or the consequences of landslide as a result of infiltration are significant.

☐ Very significant landslide hazards are not present; however this hazard may still need to be considered. See Part 3.

Shallow mining hazard (not including coal)

■ Very significant mining hazard.

Shallow mining is likely to be present with a very significant possibility of localised subsidence that could be initiated or made worse by increased infiltration. Also, infiltration may increase the possibility of remobilising pollutants. The site investigation should consider whether the potential for or consequences of subsidence and/or remobilisation of pollutants as a result of infiltration are significant.

☐ Very significant mining hazards are not present; however this hazard may still need to be considered. See Part 3.

Persistent shallow groundwater

■ Very high likelihood of persistent or seasonally shallow groundwater.

Persistent or seasonally shallow groundwater is likely to be present. Infiltration may increase the likelihood of soakaway inundation, or groundwater emergence at the surface. The site investigation should consider whether the potential for or the consequences of groundwater level rise as a result of infiltration are significant.

☐ See Part 2 for the likely depth to water table.

Made ground

■ Made ground present.

Made ground is present at the surface. Infiltration may affect ground stability or increase the possibility of remobilising pollutants. The site investigation should consider whether the potential for or consequences of ground instability and/or pollutant leaching as a result of infiltration are significant.

☐ None recorded

Section 2. Drainage potential

The following pages contain maps that will help you assess the drainage potential of the ground by considering the:

- depth to water table
- permeability of the superficial deposits
- thickness of the superficial deposits
- permeability of the bedrock
- presence of floodplains

Superficial deposits are not present everywhere and therefore some areas of the *superficial deposit permeability* map may not be coloured. Where this is the case, the *bedrock permeability* map shows the likely permeability of the ground. Superficial deposits in some places are very thin and hence in these places you may wish to consider both the permeability of the superficial deposits and the permeability of the bedrock. The *superficial thickness* map will tell you whether the superficial deposits are thin (< 3 m thick) or thick (>3 m). Where they are over 3 m thick, the permeability of the bedrock may not be relevant.

For more information read ‘Explanation of terms’ at the end of this report.

Depth to groundwater table

	Groundwater is likely to be **more than 5 m** below the ground surface throughout the year.
	Groundwater is likely to be between **3 and 5 m** below the ground surface for at least part of the year.
	Groundwater is likely to be **less than 3 m** below the ground surface for at least part of the year.

Superficial deposit permeability

Superficial deposits are likely to be **free-draining**.

The superficial deposit permeability is **spatially variable**, but likely to permit moderate infiltration.

Superficial deposits are likely to be **poorly draining**.

These maps show the permeability range that is summarised above.

- Very Low
- Low
- Moderate
- High
- Very High

Minimum

Maximum

Superficial deposit thickness

The thickness of superficial deposits is **< 3 m** and hence the permeability of the ground may be dependent on both the superficial deposits (where present) and underlying bedrock (see below).

The thickness of superficial deposits is **> 3 m** and hence the permeability of the superficial deposits is likely to determine the permeability of the ground.

Bedrock permeability

Bedrock deposits are likely to be **free-draining**.

The bedrock permeability is **spatially variable**, but likely to permit moderate infiltration.

Bedrock deposits are likely to be **poorly draining**.

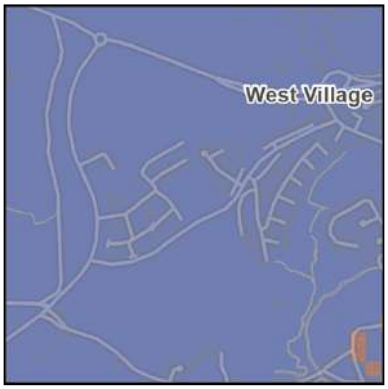
These maps show the permeability range that is summarised above.

Key

- Very Low
- Low
- Moderate
- High
- Very High

Minimum

Maximum



Geological indicators of flooding

Superficial floodplain deposits or low-lying coastal areas have been identified. Groundwater levels may rise in response to high river or tide levels, potentially causing inundation of subsurface infiltration SuDS.

Section 3. Ground stability

The following pages contain maps that will help you assess whether infiltration may impact the stability of the ground. They consider hazards associated with:

- soluble rocks
- landslides
- shallow mining
- running sands
- swelling clays
- compressible ground, and
- collapsible ground

In the following maps, geohazards that are identified in green are unlikely to prevent infiltration SuDS from being installed, but they should be considered during design. For more information read ‘Explanation of terms’ at the end of this report.

Soluble rocks

	Increased infiltration is unlikely to result in subsidence.
	Increased infiltration is unlikely to cause localised subsidence, but potential impacts should be considered.
	Increased infiltration may result in localised subsidence. The potential for or the consequences of subsidence associated with soluble rocks should be considered.
	Very significant possibility of localised subsidence that could be initiated or made worse by infiltration.

Landslides

- Increased infiltration is unlikely to lead to slope instability.
- Slope instability problems may be present or anticipated, but increased infiltration is unlikely to cause instability
- Slope instability problems are probably present or have occurred in the past, and increased infiltration may result in slope instability.
- Slope instability problems are almost certainly present and may be active. An increase in moisture content as a result of infiltration may cause the slope to fail.

Shallow mining

- Increased infiltration is unlikely to lead to subsidence.
- Shallow mining is possibly present. Increased infiltration is unlikely to cause a geohazard, but potential impacts should be considered.
- Shallow mining could be present with a significant possibility that localised subsidence could be initiated or made worse by increased infiltration.
- Shallow mining is likely to be present, with a very significant possibility that localised subsidence may be initiated or made worse by increased infiltration.

Running sand

- Increased infiltration is unlikely to cause ground collapse associated with running sands.
- Running sand is possibly present. Increased infiltration is unlikely to cause a geohazard, but potential impacts should be considered.
- Significant possibility for running sand problems. Increased infiltration may result in a geohazard.

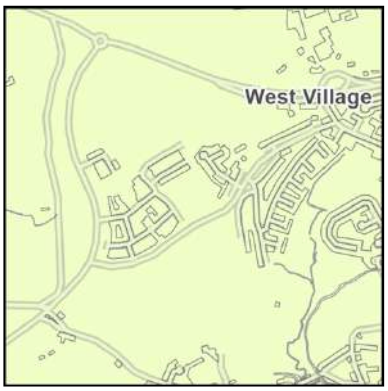
Swelling clays

- Increased infiltration is unlikely to cause shrink-swell ground movement.
- Ground is susceptible to shrink-swell ground movement. Increased infiltration is unlikely to cause a geohazard, but potential impacts should be considered.
- Ground is susceptible to shrink-swell ground movement. Increased infiltration may result in a geohazard.

Compressible ground

- Increased infiltration is unlikely to lead to ground compression.
- Compressibility and uneven settlement hazards are probably present. Increased infiltration may result in a geohazard.

Collapsible ground



- Increased infiltration is unlikely to result in subsidence.
- Deposits with potential to collapse when loaded and saturated are possibly present in places. Increased infiltration is unlikely to cause a geohazard, but potential impacts should be considered.
- Deposits with potential to collapse when loaded and saturated are probably present in places. Increased infiltration may result in a geohazard.

Section 4. Groundwater quality protection

The following pages contain maps showing some of the information required to ensure the protection of groundwater quality. Data presented includes:

- groundwater source protection zones (Environment Agency data)
- predominant flow mechanism
- made ground

For more information read ‘Explanation of terms’ at the end of this report.

Groundwater source protection zones

Derived in part from Source Protection Zone data provided under licence from the Environment Agency © Environment Agency 2024.

- Groundwater is not within a source protection zone.
- Source protection zone IV
- Source protection zone III
- Source protection zone II
- Source protection zone I

Predominant flow mechanism

- Water is likely to percolate through the unsaturated zone to the groundwater through either the pore space in granular media or through porespace and fractures; these processes have some potential for contaminant removal and breakdown.
- Water is likely to percolate through the unsaturated zone to the groundwater through fractures, a process which has little potential for contaminant removal and breakdown.

Made ground

Made ground is present at the surface. Infiltration may increase the possibility of remobilising pollutants.

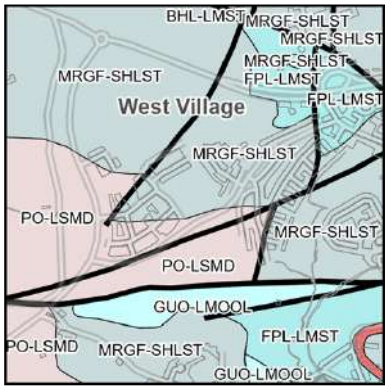
Section 5. Geological Maps

The following maps show the artificial, superficial and bedrock geology within the area of interest.

Artificial deposits

Superficial deposits

Bedrock



Fault

Coal, ironstone or mineral vein

Note: Faults and Coals, ironstone & mineral veins are shown for illustration and to aid interpretation of the map. Not all such features are shown and their absence on the map face does not necessarily mean that none are present

Key to Artificial deposits:

Map colour	Computer Code	Rock name	Rock type
	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

Key to Superficial deposits:

Map colour	Computer Code	Rock name	Rock type
	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

Key to Bedrock geology:

Map colour	Computer Code	Rock name	Rock type
	MRGF-SHLST	BLUE LIAS FORMATION (MARGINAL FACIES)	SHELL-LIMESTONE
	PO-LSMD	PORTHKERRY MEMBER	LIMESTONE AND MUDSTONE, INTERBEDDED
	PNG-MDST	PENARTH GROUP	MUDSTONE
	GUO-LMOOL	GULLY OOLITE FORMATION	LIMESTONE, OOIDAL
	BHL-LMST	BARRY HARBOUR LIMESTONE FORMATION	LIMESTONE
	FPL-LMST	FRIARS POINT LIMESTONE FORMATION	LIMESTONE

Limitations of this report:

- This report is concerned with the potential for infiltration-to-the-ground to be used as a SuDS technique at the site described. It only considers the subsurface beneath the search area and does NOT consider potential surface or subsurface impacts outside of that area.
- This report is NOT an alternative for an on-site investigation or soakaway test, which might reach a different conclusion.
- This report must NOT be used to justify disposal of foul waste or grey water.
- This report is based on and limited to an interpretation of the records held by the British Geological Survey (BGS) at the time the search is performed. The datasets used (with the exception of that showing depth to water table) are based on 1:50 000 digital geological maps and not site-specific data.
- Other more specific and detailed ground instability information for the site may be held by BGS, and an assessment of this could result in a modified assessment.
- To interpret the maps correctly, the report must be viewed and printed in colour.
- The search does NOT consider the suitability of sites with regard to:
    - previous land use,
    - potential for, or presence of contaminated land
    - presence of perched water tables
    - shallow mining hazards relating to coal mining. Searches of coal mining should be carried out via The Coal Authority Mine Reports Service: www.coalminingreports.co.uk.
    - made ground, where not recorded
    - proximity to landfill sites (searches for landfill sites or contaminated land should be carried out through consultation with local authorities/Environment Agency)
    - zones around private water supply boreholes that are susceptible to groundwater contamination.
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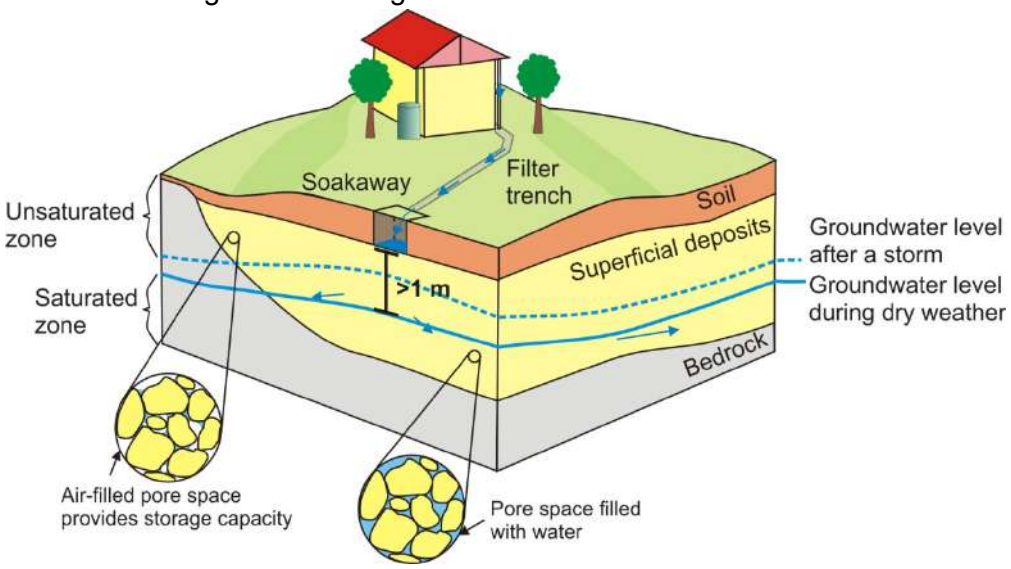
Explanation of terms

Depth to groundwater

In the shallow subsurface, the ground is commonly unsaturated with respect to water. Air fills the spaces within the soil and the underlying superficial deposits and bedrock. At some depth below the ground surface, there is a level below which these spaces are full of water. This level is known as the groundwater level, and the water below it is termed the groundwater. When water is infiltrated, the groundwater level may rise temporarily. To ensure that there is space in the unsaturated zone to accommodate this, there should be a minimum thickness of 1 m between the base of the infiltration system and the water table. An estimate of the *depth to groundwater* is therefore useful in determining whether the ground is suitable for infiltration.



Groundwater flooding

Groundwater flooding occurs when a rise in groundwater level results in very shallow groundwater or the emergence of groundwater at the surface. If infiltration systems are installed in areas that are susceptible to groundwater flooding, it is possible that the system could become inundated. The susceptibility map seeks to identify areas where the geological conditions and water tables indicate that groundwater level rise could occur under certain circumstances. A high susceptibility to groundwater flooding classification does not mean that groundwater flooding has ever occurred in the past, or will do so in the future as the susceptibility maps do not contain information on how often flooding may occur. The susceptibility maps are designed for planning; identifying areas where groundwater flooding might be an issue that needs to be taken into account.

Geological indicators of flooding

In floodplain deposits, groundwater level can be influenced by the water level in the adjacent river. Groundwater level may increase during periods of fluvial flood and therefore this should be taken into account when designing infiltration systems on such deposits. The *geological indicators of flooding* dataset shows where there is geological evidence (floodplain deposits) that flooding has occurred in the past.

For further information on flood-risk, the likely frequency of its recurrence in relation to any proposed development of the site, and the status of any flood prevention measures in place, you are advised to contact the local office of the Environment Agency (England and Wales) at www.environment-agency.gov.uk/ or the Scottish Environment Protection Agency (Scotland) at www.sepa.org.uk.

Artificial ground

Artificial ground comprises deposits and excavations that have been created or modified by human activity. It includes ground that is worked (quarries and road cuttings), infilled (back-filled quarries), landscaped (surface re-shaping), disturbed (near surface mineral workings) or classified as made ground (embankments and spoil heaps). The composition and properties of artificial ground are often unknown. In particular, the permeability and chemical composition of the artificial ground should be determined to ensure that the ground will drain and that any contaminants present will not be remobilised.

Superficial permeability

Superficial deposits are those geological deposits that were formed during the most recent period of geological time (as old as 2.6 million years before present). They generally comprise relatively thin deposits of gravel, sand, silt and clay and are present beneath the pedological soil in patches or larger spreads over much of Britain. The ease with which water can percolate through these deposits is controlled by their permeability and varies widely depending on their composition. Those deposits comprising clays and silts are less permeable and thus infiltration is likely to be slow, such that water may pool on the surface. In comparison, deposits comprising sands and gravels are more permeable allowing water to percolate freely.

Bedrock permeability

Bedrock forms the main mass of rock forming the Earth. It is present everywhere, commonly beneath superficial deposits. Where the superficial deposits are thin or absent, the ease with which water will percolate into the ground depends on the permeability of the bedrock.

Natural ground instability

Natural ground instability refers to the propensity for upward, lateral or downward movement of the ground that can be caused by a number of natural geological hazards (e.g. ground dissolution/compressible ground). Some movements associated with particular hazards may be gradual and of millimetre or centimetre scale, whilst others may be sudden and of metre or tens of metres scale. Significant natural ground instability has the potential to cause damage to buildings and structures, especially when the drainage characteristics of a site are altered. It should be noted, however, that many buildings, particularly more modern ones, are built to such a standard that they can remain unaffected in areas of significant ground movement.

Shrink-swell

A shrinking and swelling clay changes volume significantly according to how much water it contains. All clay deposits change volume as their water content varies, typically swelling in winter and shrinking in summer, but some do so to a greater extent than others. Contributory circumstances could include drought, leaking service pipes, tree roots drying-out the ground or changes to local drainage patterns, such as the creation of soakaways. Shrinkage may remove support from the foundations of buildings and structures, whereas clay expansion may lead to uplift (heave) or lateral stress on part or all of a structure; any such movements may cause cracking and distortion.

Landslides (slope stability)

A landslide is a relatively rapid outward and downward movement of a mass of ground on a slope, due to the force of gravity. A slope is under stress from gravity but will not move if its strength is greater than this stress. If the balance is altered so that the stress exceeds the strength, then movement will occur. The stability of a slope can be reduced by removing ground at the base of the slope, by placing material on the slope, especially at the top, or by increasing the water content of the materials forming the slope. Increase in subsurface water content beneath a soakaway could increase susceptibility to landslide hazards. The assessment of landslide hazard refers to the stability of the present land surface. It does not encompass a consideration of the stability of excavations.

Soluble rocks (dissolution)

Some rocks are soluble in water and can be progressively removed by the flow of water through the ground. This process tends to create cavities, potentially leading to the collapse of overlying materials and possibly subsidence at the surface. The release of water into the subsurface from infiltration systems may increase the dissolution of rock or destabilise material above or within a cavity. Dissolution cavities may create a pathway for rapid transport of contaminated water to an aquifer or water course.

Compressible ground

Many ground materials contain water-filled pores (the spaces between solid particles). Ground is compressible if a building (or other load) can cause the water in the pore space to be squeezed out, causing the ground to decrease in thickness. If ground is extremely compressible the building may sink. If the ground is not uniformly compressible, different parts of the building may sink by different amounts, possibly causing tilting, cracking or distortion. The compressibility of the ground may alter as a result of changes in subsurface water content caused by the release of water from soakaways.

Collapsible deposits

Collapsible ground comprises certain fine-grained materials with large pore spaces (the spaces between solid particles). It can collapse when it becomes saturated by water and/or a building (or other structure) places too great a load on it. If the material below a building collapses it may cause the building to sink. If the collapsible ground is variable in thickness or distribution, different parts of the building may sink by different amounts, possibly causing tilting, cracking or distortion. The subsurface underlying a soakaway will experience an increase in water content that may affect the stability of the ground. This hazard is most likely to be encountered only in parts of southern England.

Running sand

Running sand conditions occur when loosely-packed sand, saturated with water, flows into an excavation, borehole or other type of void. The pressure of the water filling the spaces between the sand grains reduces the contact between the grains and they are carried along by the flow. This can lead to subsidence of the surrounding ground. Running sand is potentially hazardous during the drainage system installation. During installation, excavation of the ground may create a space into which sand can flow, potentially causing subsidence of surrounding ground.

Shallow mining hazards (non coal)

Current or past underground mining for coal or for other commodities can give rise to cavities at shallow or intermediate depths, which may cause fracturing, general settlement, or the formation of crown-holes in the ground above. Spoil from mineral workings may also present a pollution hazard. The release of water into the subsurface from soakaways may destabilise material above or within a cavity. Cavities arising as a consequence of mining may also create a pathway for rapid transport of contaminated water to an aquifer or watercourse. The mining hazards map is derived from the geological map and considers the potential for subsidence associated with mining on the basis of geology type. Therefore if mining is known to occur within a certain rock, the map will highlight the potential for a hazard within the area covered by that geology.

For more information regarding underground and opencast **coal mining**, the location of mine entries (shafts and adits) and matters relating to subsidence or other ground movement induced by **coal mining** please contact the Coal Authority, Mining Reports, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG; telephone 0845 762 6848 or at www.coal.gov.uk**.** For more information regarding other types of mining (i.e. non-coal), please contact the British Geological Survey.

Groundwater source protection zones

In England and Wales, the Environment Agency has defined areas around wells, boreholes and springs that are used for the abstraction of public drinking water as source protection zones. In conjunction with Groundwater Protection Policy the zones are used to restrict activities that may impact groundwater quality, thereby preventing pollution of underlying aquifers, such that drinking water quality is upheld. The Environment Agency can provide advice on the location and implications of source protection zones in your area (www.environment-agency.gov.uk/)

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- Geological observations and interpretations are made according to the prevailing understanding of the subject at the time. The quality of such observations and interpretations may be affected by the availability of new data, by subsequent advances in knowledge, improved methods of interpretation, and better access to sampling locations.
- Raw data may have been transcribed from analogue to digital format, or may have been acquired by means of automated measuring techniques. Although such processes are subjected to quality control to ensure reliability where possible, some raw data may have been processed without human intervention and may in consequence contain undetected errors.
- Detail, which is clearly defined and accurately depicted on large-scale maps, may be lost when small-scale maps are derived from them.
- Although samples and records are maintained with all reasonable care, there may be some deterioration in the long term.
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- The topography shown on any map extracts is based on the latest OS mapping and is not necessarily the same as that used in the original compilation of the BGS geological map, and to which the geological linework available at that time was fitted.
- Note that for some sites, the latest available records may be historical in nature, and while every effort is made to place the analysis in a modern geological context, it is possible in some cases that the detailed geology at a site may differ from that described.

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Appendix E Preliminary geotechnical risk register

Geotechnical hazard identification – desk study stage

Potential geotechnical hazards have been assessed in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents CS 641 and CD 622. The following pages set out the identified geotechnical risks and hazards which are associated with the proposed development and establish the approach which is to be taken to manage the risks including the geotechnical input and analysis.

Table E.1 is a preliminary assessment of possible geotechnical hazards at the site at Desk Study stage. This information is used to assist with ground investigation design.

Table E.1: Possible geotechnical hazards

Hazard	Comment	Hazard status based on desk study	
		Could be present and / or affect site (i.e. Plausible)	Unlikely to be present and/or affect site
Uncontrolled Made Ground (variable strength and compressibility).	Limited thicknesses of Made Ground is anticipated to be present in the south-west of the site, associated with the former contractor compound, the northern part of the site associated with material storage and along the former access road through the centre of the site.	✔	-
Soft / loose compressible ground (low strength and high settlement potential).	The weathered clay fraction of the Porthkerry Member and Blue Lias Formation are potentially compressible which will impact the ground profile and may cause settlement issues. Made Ground is anticipated to be present.	✔	-
Shrink swell of the clay fraction of soils under the influence of vegetation.	The clay fraction of the Porthkerry Member and Blue Lias Formation is known to be vulnerable to shrink swell.	✔	-
Variable lateral and vertical changes in ground conditions.	The ground is likely to be variable due to the distribution and extent of Made Ground.	✔	-
High sulfates present in the soils.	The Blue Lias Formation is known to be sulfate bearing.	✔	
Adverse chemical ground conditions, (e.g. expansive slag).	Slag aggregate was imported to site by Geotechnology, and although it is claimed this has been largely removed, it is plausible that expansive slag material remains on site.	✔	-
Obstructions.	Obstructions are not expected due to the lack of structural developments that have been undertaken at this site.	-	✔

Shallow groundwater.	The BGS SuDS report indicates that groundwater is likely to be more than 5m below the ground surface throughout the year, and therefore is not considered to be shallow.	-	✔
Changing groundwater conditions.	Groundwater is at such a depth that changing groundwater conditions would not impact the surface of the site.	-	✔
Risk from erosion.	Not anticipated at this site.	-	✔
Risk from flooding.	Not anticipated at this site.	-	✔
Loose Made Ground, leading to difficulty with excavation and collapse of side walls.	A limited extent of Made Ground is anticipated to be present in the south of the site, associated with the former construction compound in this area.	✔	-
Slope stability issues – general slopes.	Not considered a risk at this site; this site is largely flat, with a small shallow slope in the north of the site down to the level of the housing estate.	-	✔
Slope stability issues – retaining walls.	Not present at this site.	-	✔
Earthworks – settlement (due to placement of fill on soft / loose ground)/ poor bearing capacity of new fill/ unsuitability of site won material to be reused as fill.	Hydrock are not aware of any proposals for earthworks as part of the plans for development.	-	✔
Cavities in the Superficial Deposits due to solution features.	Superficial deposits not present at this site.	-	✔
Dissolution/ Solution features in limestone.	Dissolution of the limestone components of the Blue Lias Formation and Porthkerry Member is possible, however is likely to be significantly impeded by interbedded mudstone pairings. Overall it is possible that surface depressions may be present on site, but deeper features are unlikely.	✔	-
Brine extraction.	Not present at this site.	-	✔
Mining.	Not present at this site.	-	✔
Cambered ground with gulls possibly present.	Not present at this site.	-	✔
Relict Slip Surfaces.	Not present at this site.	-	✔
Solifluction.	Not present at this site.	-	✔
Problematic soils (silts and rewetting etc.).	Not present at this site.	-	✔

Appendix F Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table F.2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2023) and additional risk assessment is required.

Source – Pathway – Receptor Linkages have been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but modified to add a 'no linkage' category and to remove low/moderate risk (See Table F.1).

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table F.1: Consequence versus probability assessment.

		Consequence			
Probability		Severe	Medium	Mild	Minor
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Extremely low risk
	No Linkage	No risk			

Table F.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Made Ground associated with historical construction related activities (construction materials and vehicle storage) and imported fill associated with haulage road, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, and PAHs (S01).	Ingestion and direct skin contact (P01) Inhalation of fugitive dust indoors and outdoors (P02). Vapour inhalation indoors and outdoors (P04)	Site end users (R01).	Likely	Medium	Moderate	The site has a very limited development history and therefore where made ground is present no significant contamination is anticipated. Made ground is anticipated to be limited in thickness and localised to the south-west of the site and northern part of the site and along the former access road.
	Inhalation of fugitive dust indoors and outdoors (P02) Vapour inhalation outdoors (P04)	Neighbours (R02).	Low likelihood	Medium	Low	No significant widespread contamination is anticipated within the surface soils. Dust is likely to be produced during construction activities, however this can be mitigated through the use of dust suppression techniques.
	Vertical and lateral migration of contaminant via leachate migration through the unsaturated zone in the Blue Lias Formation/Porthkerry Member Groundwater Body (P07).	Groundwater: Blue Lias Formation (Principal Aquifer) and Porthkerry Member (Secondary A Aquifer) (R04).	Low likelihood	Medium	Low	No significant widespread contamination is anticipated. Groundwater is anticipated to be greater than 5.0m below ground level. The presence of mudstone interbeds will limit the vertical migration of contamination from the made ground into the groundwater at depth. Any potential contamination present will likely experience significant attenuation by the time it migrates into the groundwater bodies.

	Surface water via base flow from groundwater (P06).	Surface water: River Thaw (R05)	Low likelihood	Medium	Low	No significant widespread contamination is anticipated. Groundwater is anticipated to be some 5.0m below ground level. The presence of mudstone interbeds will limit the vertical migration of contamination from the made ground into the groundwater at depth. The surface water is some 460m east of the site and it is anticipated that the potential contamination will attenuate over this distance.
Ground gases (carbon dioxide and methane) from organic materials in the Made Ground (S02).	Asphyxiation/ explosive risk from ground gas ingress via permeable soils and/or construction gaps (P02)	People (neighbours, site end users) (R01). Development end use (buildings, utilities and landscaping) (R02).	Low likelihood.	Medium.	Low.	The site has a very limited development history and therefore where made ground is present no significant contamination is anticipated. Made ground is anticipated to be limited in thickness and localised to the south-west of the site and northern part of the site and along the former access road. It is anticipated that any organic material within the Made Ground will also be limited and potential for gas generation will be inhibited. Natural deposits beneath the site are not anticipated to produce ground gas.
Radon (S03).	Radon ingress via permeable soils and/or construction gaps (P03)	Site end users (R01). Development end use (buildings, utilities and landscaping) (R02).	Likely.	Severe.	High.	The BGS Radon Report commissioned by Hydrock has indicated that the site is in an area where 10 to 30 % of homes are at or above the action level. Full radon protection measures are required for this development.
Petroleum hydrocarbons associated with vehicle maintenance, fuel storage and possible localised	Skin contact (P01) Vapour inhalation indoors and outdoors (P04)	Site end users (R01)	Low likelihood	Medium	Low	Potential source is limited to onsite use of vehicles and storage of fuel for plant with associated spillages – these are likely to be point sources with limited volumes (dependent on storage capacity) and it is assumed that with the construction activities, that any spillages that did occur would have been cleaned up at the time. No pollution
	Vapour inhalation outdoors (P04)	Neighbouring properties (R02)	Unlikely	Medium	Very Low	

spillages within the contractor's compound area (S04)						incidents are recorded on site and therefore it is concluded to be a low likelihood of risk.
	Ingress via incoming water supply lines (P08)	Site end users (R01) Development end use (buildings, utilities and landscaping) (R02).	Low likelihood	Mild	Low	With the potential for petroleum hydrocarbon contamination within the made ground, incoming supply lines are potentially vulnerable. Given petroleum hydrocarbon sources are likely to be localised and off limited quantity this is considered to pose a low risk. Should more significant petroleum hydrocarbon contamination be identified, design of the incoming supply can be altered to prevent ingress.