Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

Land Off Ysguborwen Road, Dwygyfylchi, LL34 6PU

Cartrefi Conwy

Ysguborwen Road, Dwygyfylchi

Phase I and Phase II Geo-Environmental Report

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Document Reference: 6005-CAU-XX-XX-RP-V-3004.S3.P01

March 2025

APPROVAL RECORD

Site:	Land Off Ysguborwen Road, Dwygyfylchi, LL34 6PU
Client:	Cartrefi Conwy
Project Title:	Ysguborwen Road, Dwygyfylchi
Document Title:	Phase I and Phase II Geo-Environmental Report
Document Ref:	6005-CAU-XX-XX-RP-V-3004.S3.P1
Report Status:	First Issue
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Approved	David Kitching Associate Director	**Date**	03.03.2025

Revision Log			
Revision	**Description of Change**	**Approved**	**Effective Date**

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Phase I and Phase II Geo-Environmental Report

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1.0 INTRODUCTION

1.1 Details of Commission

1.1.1 Caulmert Ltd. have been appointed by Cartrefi Conwy (the client) to undertake a combined Phase I desk study and Phase II geo-environmental appraisal at Land Off Ysguborwen Road, Dwygyfylchi, LL34 6PU. The Phase 1 and Phase 2 geoenvironmental has been undertaken to support a planning application and preliminary scheme design for the residential development of the site. A site location plan is provided as Figure 2, see over.

1.2 Limitations of this Study

1.2.1 This report is solely for the use of the Client and should not be relied upon by third parties without prior written consent from Caulmert.

1.2.2 Part of the information used within this report has been gathered from data sets compiled by third party organisations and purchased on behalf of the Client. The validity and accuracy of this third-party information is outside the control of Caulmert.

1.2.3 Interpretation and recommendations contained within this report should not be assumed valid for adjacent areas of land or alternative land uses and are based upon the proposed layout provided to Caulmert at the time of compiling this report.

1.2.4 Engineering /Geoenvironmental conclusions given in this report are based on data obtained from test locations described in this report but it should be noted that variations, which affect these conclusions, may occur between and beyond the test locations. Also, water levels may vary with time.

1.3 Objectives of Report

1.3.1 The objective of this report is to complete an assessment of potential environmental and geotechnical liabilities associated with the proposed residential development of the site. The scope of works consists of the following:

- A review of third-party information.
- A desk study and site walk-over reconnaissance to determine the nature of the site and its surroundings including current and former land uses, geology, hydrogeology, hydrology and geo-environmental data.
- An assessment of potential sources of pollutants on the site and in the immediate surrounding area.
- Derivation of a preliminary conceptual site model (CSM) identifying potential sources, pathways and receptors of contaminants.

- A ground investigation to formulate a ground and groundwater model and investigate the source-pathway-receptor linkage identified within the preliminary CSM.
- An assessment of ground conditions given the site's planned development, it's construction phase and the foundation requirements.
- Assess the underlying soils permeability and provide preliminary advise on drainage solutions for the development.
- Recommendations for further investigations (as necessary).

1.4 Previous Works

1.4.1 Caulmert are not aware of any previous ground investigation works carried out on site.

1.5 Sources of Information

1.5.1 This report comprises the review of the Envirocheck Report (ref: 366982679 dated 13.01.2025) and information obtained from readily available online sources:

- British Geological Survey (BGS) website
  - http://mapapps2.bgs.ac.uk/geoindex/home.html;
- Grid Reference Finder website
  - https://gridreferencefinder.com;
- DEFRA maps website
  - https://magic.defra.gov.uk;
- Coal Authority - Interactive Map Viewer, ArcGIS
  - https://datamine-cauk.hub.arcgis.com/;
- UKradon website (UK Health Security Agency)
  - https://www.ukradon.org;
- Zetica UXO Risk Maps
  - https://zeticauxo.com/downloads-and-resources/risk-maps/;
- Natural Resources Wales Flood Risk Map Viewer
  - https://maps.cyfoethnaturiolcymru.gov.uk/
- Surface Water and Small Water Courses Flood Zones
  - https://datamap.gov.wales/layers/inspire-nrw:NRW_FLOODZONE_SURFACE_WATER_AND_SMALL_WATERCOURSES

- Agricultural land classification: predictive map
    - https://datamap.gov.wales/layers/inspire-wg:wg_predictive_alc2

2.0 PROPOSED DEVELOPMENT

2.1.1 The proposed development will comprise a residential housing scheme comprising eight two-storey houses, one block of two-storey apartments, and two bungalows (total of fourteen mixed occupancy dwellings), with associated private gardens, access roads, parking bays, and public open space. The new access road will run through the centre of site, trending NW-SE. A bus stop which is currently located on Ysguborwen Road at the proposed site entrance will need to be relocated to accommodate the new access road. It is understood that initial discussions with the Local Authority have indicated that this will be to the east along Ysguborwen Road as indicated on the proposed development plan. The redevelopment will include a landscaped buffer zone of trees, between the A55 to the northwest and the proposed dwellings (Fig. 1).

2.1.2 The development will comprise low-rise properties of varying sizes. No construction details or structural loads have been made available at the time of writing this report. However, it is anticipated that loads will be light to moderate. An initial development layout is presented as Figure 1 below:

Figure 1: Proposed development area.

3.0 ENVIRONMENTAL CONTEXT

3.1 Site Location and Description

3.1.1 The site is located at land off Ysguborwen Road, Dwygyfylchi, Conwy, LL34 6PU(National Grid Reference: 273 150, 377 360). The site location plan is presented as Figure 2 below.

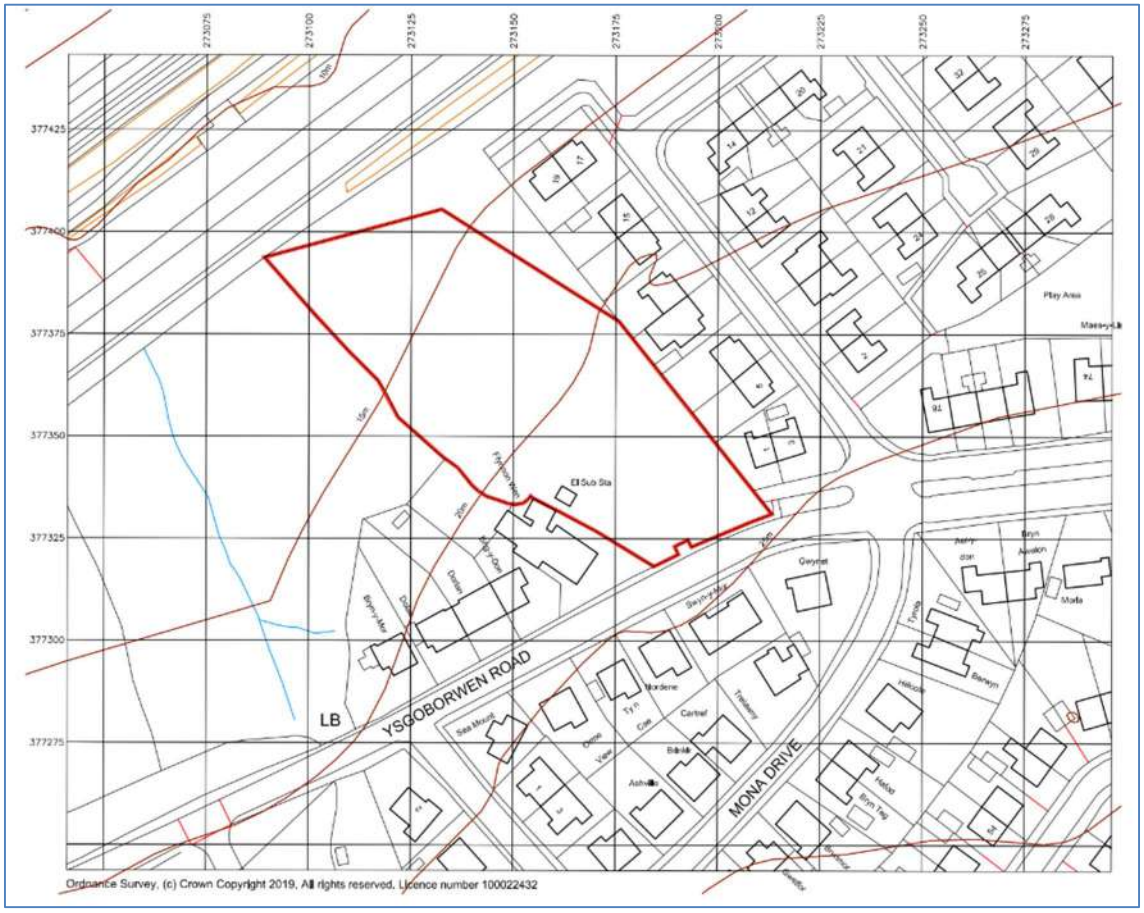

Figure 2: Site location plan.

3.1.2 The site is bordered to the north by the A55 dual carriageway, with the North Wales Coast Line railway and the Irish Sea foreshore further to the north. The Irish Sea foreshore is approximately 76m northwest from the site. To the south the site is bound by Ysguborwen Road, with an associated bus stop. The site slopes from south to north from approximately 25m AOD to 13m AOD.

3.1.3 The land is within a residential area of Dwygyfylchi. The site is roughly rectangular in shape, trending NW-SE, measuring approximately 0.5Ha. The site is bound by housing along the southern half of the eastern and western NW-SE boundaries, with the remaining land being open vegetated land. A open surface water course trending NNW-SSE, with a flow direction to the north/ northwest (towards the Irish Sea), is located along the western/southwestern site boundary. This appears to be culverted beneath Ysguborwen Road, however the line of it has not yet been proven but is unlikely to encroach onto the subject site.

3.1.4 The site has been greenfield agricultural livestock grazing land since the earliest historical map record (1888), and is currently covered with grassland, and scrub and trees. A electrical sub-station has been listed on the site since 1992.

3.1.5 A summary of the site and surrounding areas is presented in Table 1.

Table 1: Site description.

Site Location		
National Grid Reference		273 150, 377 360
Site Address		Land Off Ysguborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU, UK
Site Area		0.5 Hectares
Local Authority		Conwy County Borough Council
Pre-planning reference		Ref: PPA0008683
Site Setting / Description	Current Land Use	Greenfield agricultural livestock grazing land. Predictive Agricultural Land Classifications (ALC) ranging from grade 3a (good to moderate quality) in the northern end of the site, to 2 (good quality) in the northern half, to Unclassified in the southern half of the site. Covered with grassland, and roughly 48% of scrub and trees (to the west and north). Electricity sub-station located in southwest corner of the site, with possible electrical cables running below ground towards Ysguborwen Road (services plans not available).
	Surrounding Area	North: bound by A55 dual carriageway, with the North Wales Coast Line railway adjacent to the A55 to the north, and the foreshore of Irish Sea to the north of the railway.
		East: residential housing (Maes y Llan). Ca.370m northeast of site is a petrol and fuel filling station, currently Shell owned, and has been mapped as a filling station since the 1977-1991 available maps.
		South: Bordered by Ysguborwen Road, and a bus stop. Further south is residential houses and agricultural fields.
		West: A row of five houses along Ysguborwen begin at the southern half of the NW-SE boundary of the site. The remaining land is open vegetated land.

3.2 Site Walkover Survey

3.2.1 A site walkover survey was completed by a Caulmert Engineer on the 28th of January 2025 as part of the Phase 2 investigation works. A summary of the observations made during the site visit are presented in Table 2 below.

Table 2: Summary of observations from the site walkover survey.

Observations	Comments
Buildings and Structures	Electric substation in the southern, south-western part of the site. No other structures observed.
Topography	The site slopes to the north-west with the lowest point at ca. 12m AOD and the highest point in the south at ca. 24m AOD.
Site Access	Site is accessed via a locked gate off Ysguborwen Road to the south.
Site Surface	The site is covered by grass to the north.
Services	Possible electricity cables run along the sites south to southwestern boundary associated with the substation. The exact route is yet to be surveyed. No other live services are known to be present onsite.
Vegetation	The site is covered with grazing grass, trees and shrubs along the western, south-western, and the northwestern boundaries.
Invasive Species	None identified, note survey not carried out by qualified ecologist.
Surface Water Features	Watercourse along the western, south-western boundary. The watercourse was observed partially dry during the site visit.
Potential Contaminative Sources (on site)	Electric substation in the southern, south-western part of the site. Appears to be modern construction and therefore unlikely to be a significant contamination sources. No other contamination sources identified.
Potential Contaminative Sources (off site)	Expressway from 15m to 18m to the northwest. No other significant contamination sources identified. The rest of surrounds comprise residential housing and agricultural fields.
Other Information	None.

3.3 Site History

3.3.1 In compiling this desk study, historical maps and historical aerial photography from the Envirocheck report (2024) dating from 1888 to 2025 were analysed. The maps are presented in Appendix 8 with pertinent extracts provided below.

Table 3: Summary of historical maps 1888-2025.

Historical Map	Site	Surrounds
1888 1:10,560	The site is mapped as agricultural land.	A road (later listed as Ysguborwen Road) runs NE-SW along the southeast boundary of the site. A road (later listed as the A55) bordering the northwest edge of the site runs NE-SW. A railway line is mapped less than 50m northwest of the site, running NE-SW. A well is marked within 50m west of the site. Gas works are mapped ~275m southwest of the site. Foreshore of Irish Sea ~100m to the northwest of site.
1889 1:2,500	No significant changes.	No significant changes.

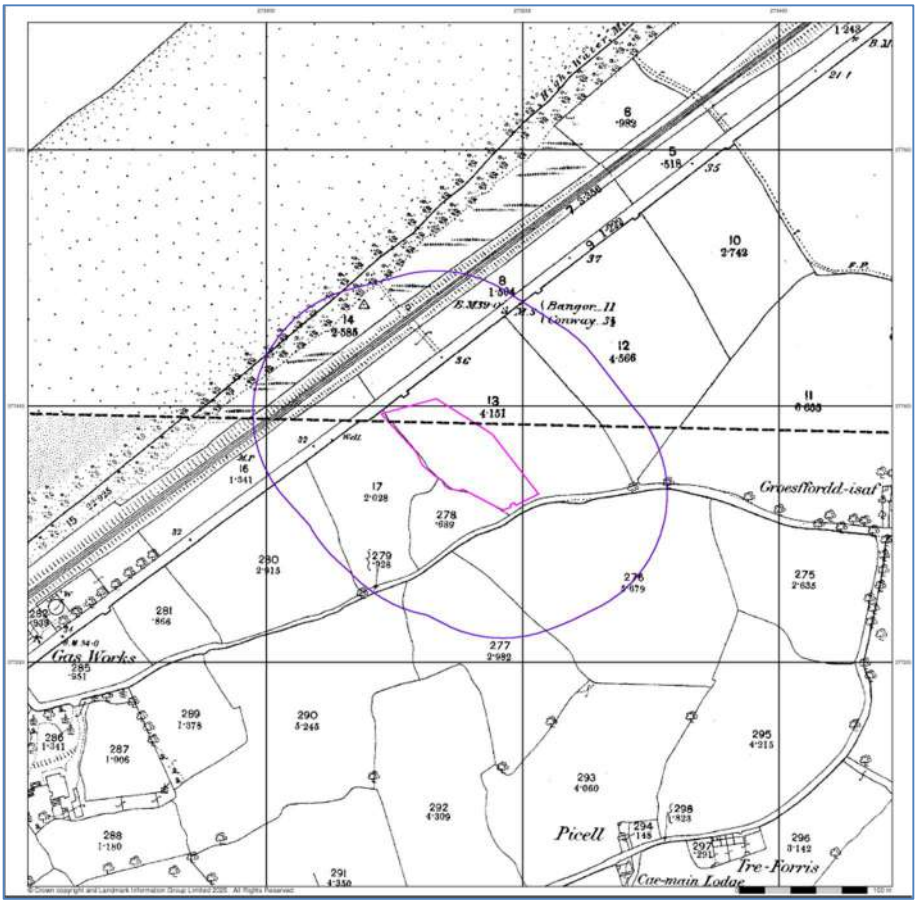

Figure 3A: Historical Map dated 1889 *(red line-site boundary).* Scale 1:2,500.

1900 1:2,500	No significant changes.	Housing development <250m to the southwest.
1901 1:10,560	No significant changes.	No significant changes.
1913 1:2,500	No significant changes.	The well marked within 50m southwest of site is no longer shown.
1938 1:10,560	No significant changes.	Gogarth Road joins onto Ysguborwen Road to the southeast, running NW-SE, roughly 50m to the southwest of the site. Mona Ave. connects Gogarth Road and Ysguborwen Road, running NE-SW, <50m to the southeast of the site. Housing developments along Gogarth Road and Mona Ave. to the south of the site. Housing development ~240m east of site, north of Ysguborwen Road.

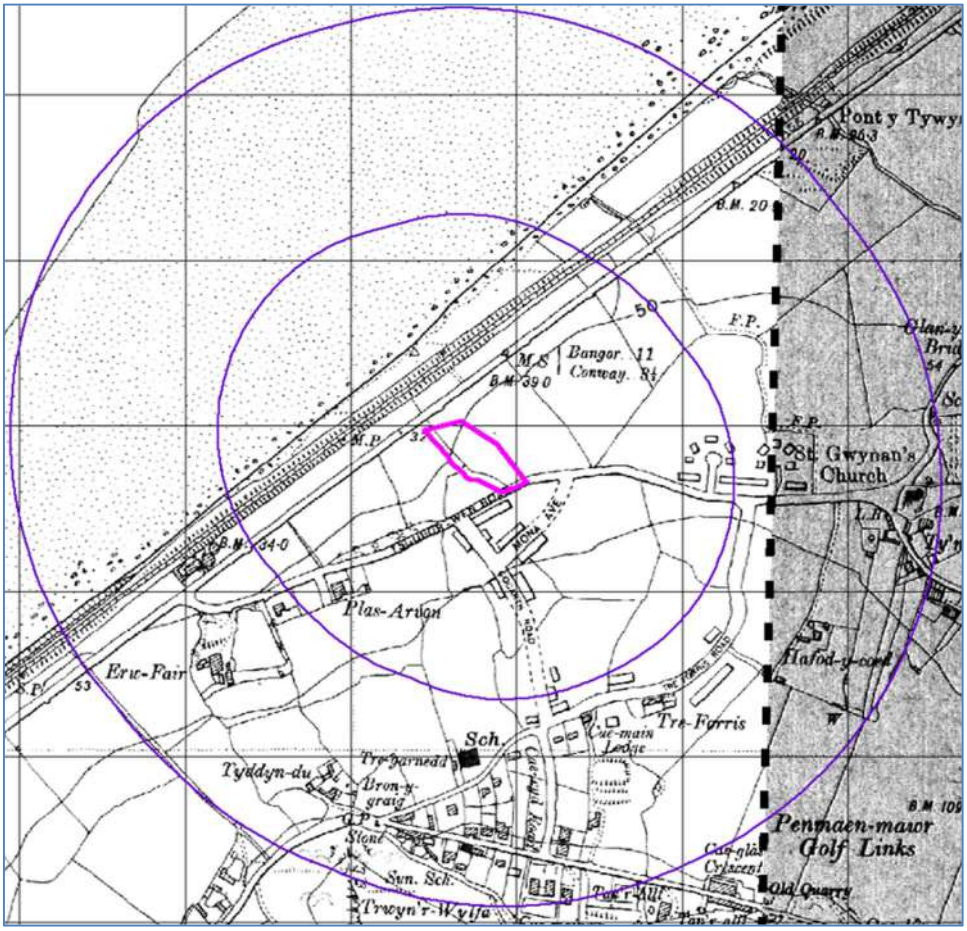

Figure 3B: Historical Map dated 1938 *(red line-site boundary).* Scale 1:10,560.

1953 1:10,560	No significant changes.	Building mapped bordering the western NW-SE boundary of the site, towards the southeastern end of the site, <10m to the northwest of Ysguborwen Road. Gas Works expansion, with gas holder marked ~200m to the west of the site. Further housing development along Gogarth Road and Mona Ave., on both sides. Housing development to the southeast of Ysguborwen Road, <20m from southeastern edge of site.

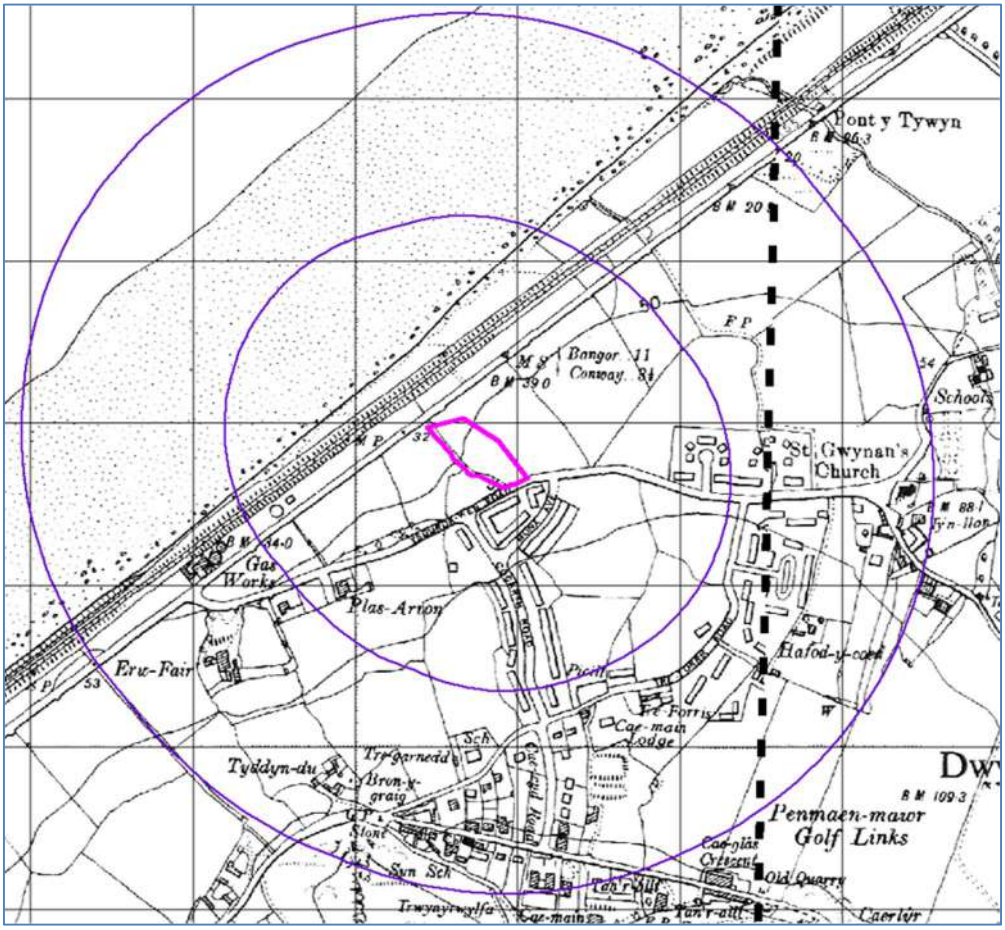

Figure 3C: Historical Map dated 1953 *(red line-site boundary).* Scale 1:10,560.

1959-1966 1:2,500	Building mapped near the southeastern end of the western NW-SE boundary, ~25m northwest from Ysguborwen Road.	Housing expansion to west of the site, along Ysguborwen Road. with the southern half of the NW-SE boundary bordered by housing (Ffynnon Wen). Housing development (Maes y Llan) to the east also along the southern half of the NW-SE boundary. These housing developments extend northeastwards and southeastwards.

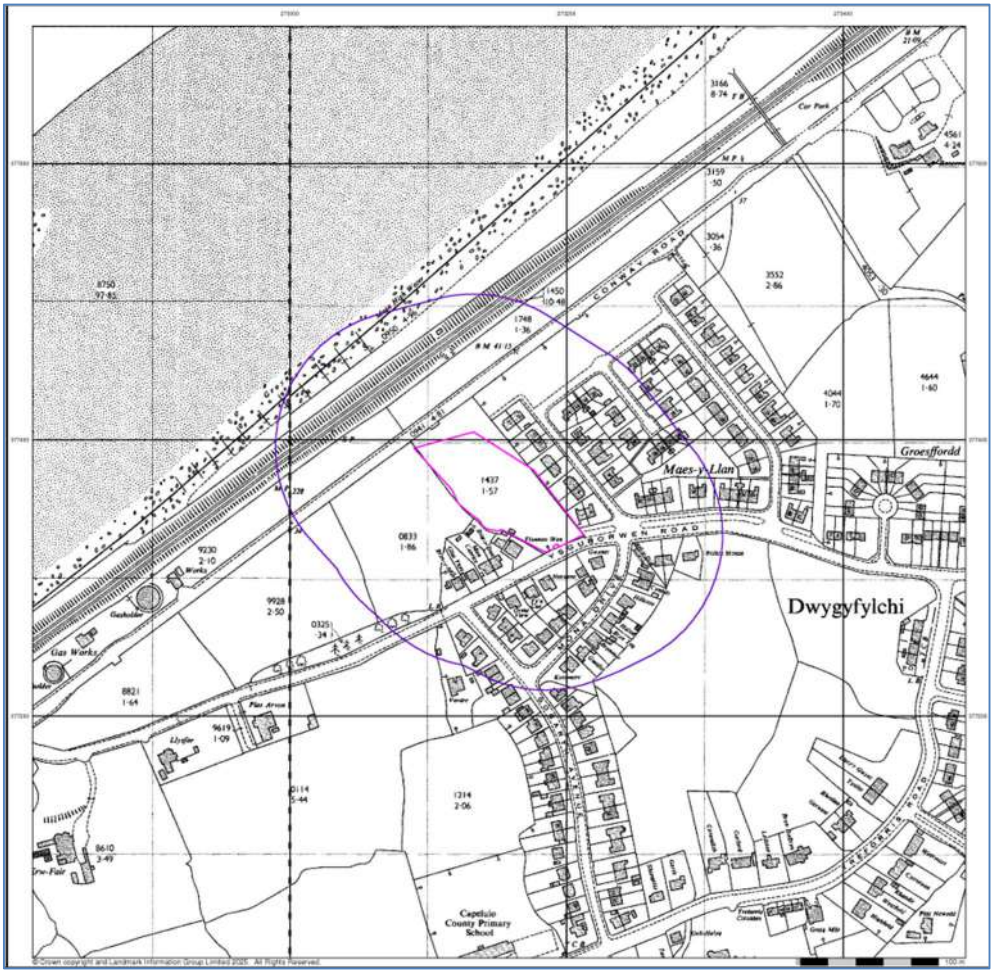

Figure 3D: Historical Map dated 1966 *(red line-site boundary).* Scale 1:2,500.

1973 1:2,500	No significant changes.	Housing development between 100m and 300m to the southeast of site, in between Gogarth Road and Ysguborwen Road.
1975 1:10,000	No significant changes.	No significant changes.
1977-1991 1:2,500	No significant changes.	Gas works to the west are absent. Filling station mapped to the northeast, ~320m from site.

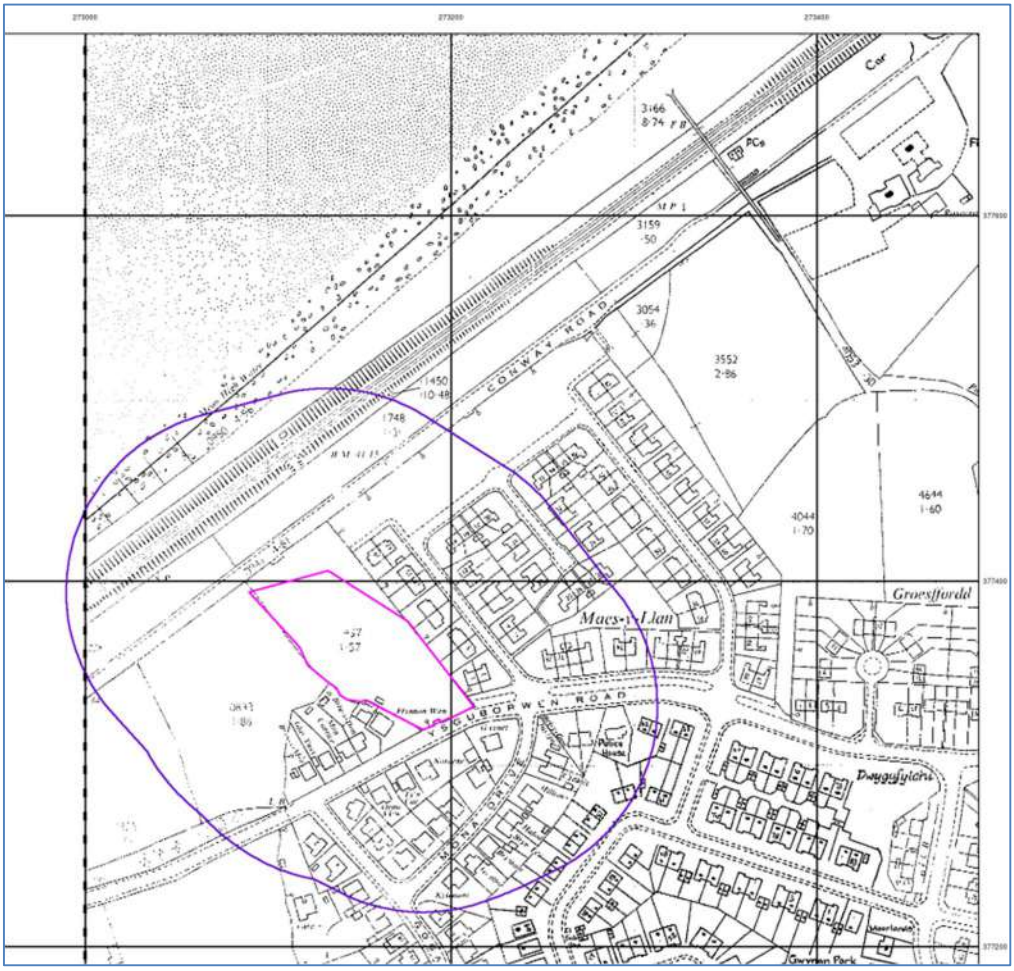

Figure 3E: Historical Map dated 1977 *(red line-site boundary)*. Scale 1:2,500.

1992 1:2,500	Electricity Substation now denotes building.	Dual carriageway development on A55 to the northwest of site. Embankment built along the southeastern edge of the A55, ~10m northeast of the site, with the slope to the northwest. Bus stop mapped along the southern NE-SW boundary of the site, northwest off Ysguborwen Road. An open surface watercourse is mapped trending NNW-SSE in the adjacent land parcel to the southwest of the site.

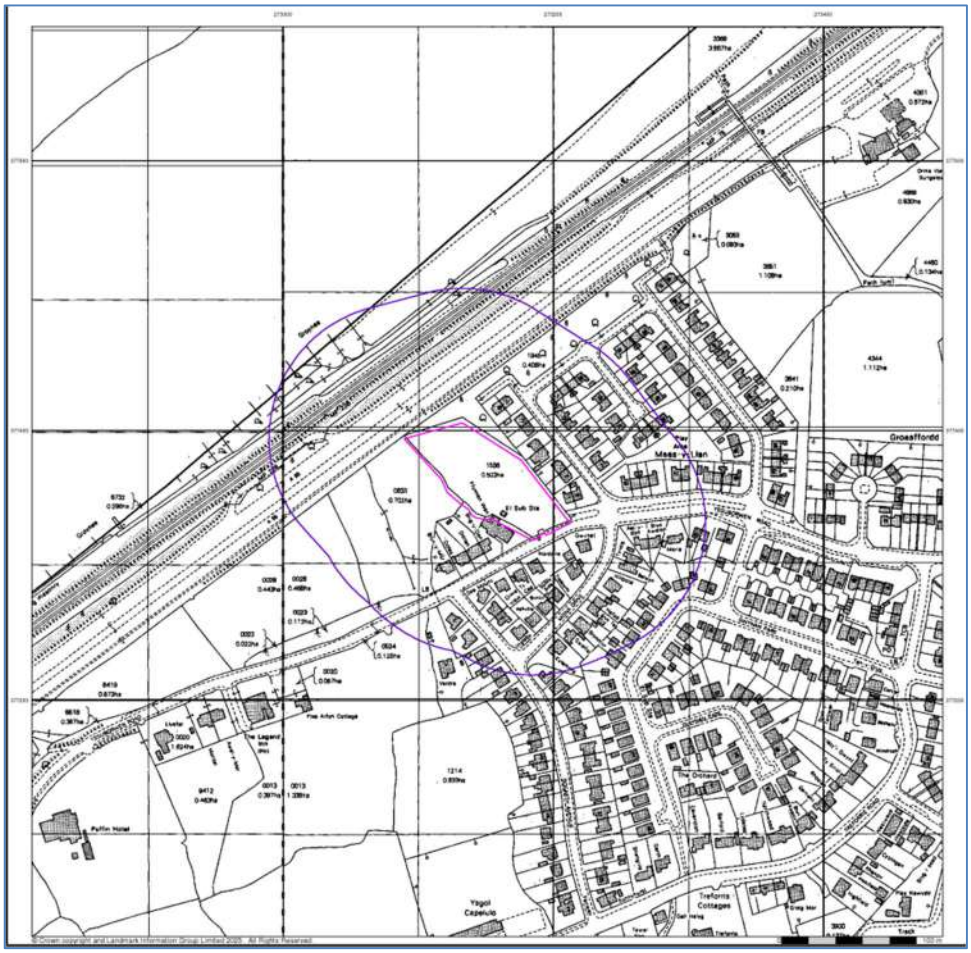

Figure 3F: Historical Map dated 1992 *(red line-site boundary).* Scale 1:2,500.

1995 1:2,500	No significant changes.	No significant changes.
20001:10,000	No significant changes.	No significant changes.

Figure 3G: Historical Aerial Photography dated 2000 *(red line-site boundary).* Scale 1:2,500.

2003 1:10,000	No significant changes.	No significant changes.
2006 1:10,000	No significant changes.	Mast mapped ~380m northeast from site.
2009 1:10,000	No significant changes.	No significant changes.
2013 1:10,000	No significant changes.	No significant changes.

2016 1:10,000	No significant changes.	No significant changes.
2024 1:10,000	No significant changes.	Housing development ~280m to the east/northeast of site (Gwel y Mor). Land adjacent to this housing area, to the northwest, is listed as recreational ground

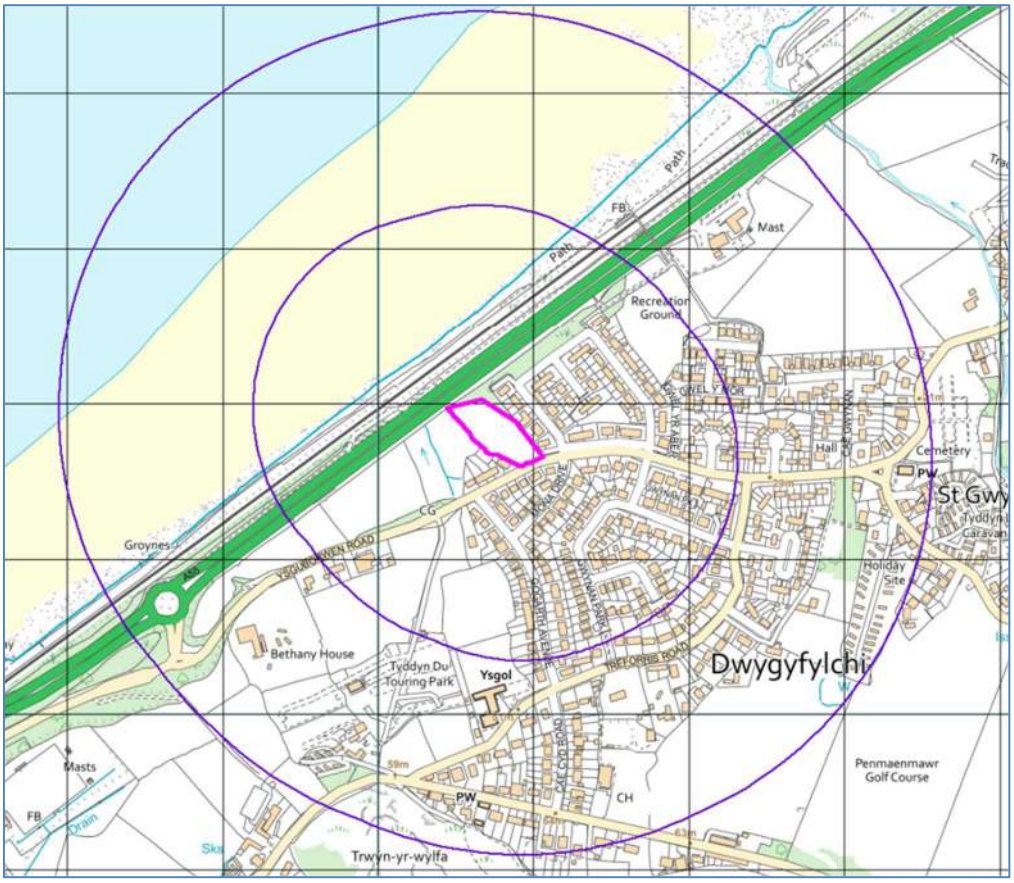

Figure 3H: Historical Aerial Photography dated 2024 *(red line-site boundary)*. Scale 1:10,000.

2025 1:10,000	No significant changes.	No significant changes.

3.3.2 The site is livestock grazed agricultural land and has been since the earliest available historical map of 1888. A building was mapped in the 1959-1966 historical maps, being listed as an electrical sub-station in the 1992 historical map. It is envisaged that no electrical cables run across the site however this should be confirmed with utility surveys.

3.3.3 The surrounding areas were mainly of agricultural land use from 1888 until 1900, when residential development commences in the southwest. From 1938 onwards there is residential development of the surrounding agricultural land, mainly to the east and south. The site has been historically bordered to the north by the A55 dual carriageway (becoming dual in the 1980s), with the North Wales Coast Line railway and the Irish Sea foreshore further to the north. The Irish Sea foreshore is approximately 76m northwest from the site. To the south the site is bound by Ysguborwen Road, with an associated bus stop. Gas works were present between the available records of 1888 and 1991, with an expansion eastwards illustrated in the 1953 map (200m to the west of site).

3.3.4 No significant contamination sources are identified within the vicinity of the site that are likely to significantly impact the site.

3.4 Geology

3.4.1 The British Geological Society online geological maps (1:50,000) indicate the following ground conditions at the site:

- Superficial – the site is shown to be underlain by Glacial Till of the Quaternary period comprising typically firm to very stiff slightly gravelly sandy clay with interbeds of laminated clay/silt and beds/lenses of sand and gravel.
- Bedrock – the site is shown to be underlain the Conwy Rhyolite Formation comprising rhyolite lavas and inter-flow breccias, tuff and intercalated sedimentary rocks.
- The nearest linear features comprise inferred faults, located 180m to southwest of the site (trending N-S), and 360m to the northeast (trending NW-SE).

3.4.2 There are a series of boreholes along the line of the A55, on the northern side, and the four nearest boreholes were selected. These are located 48m to the northwest, and 95m and 122m to the west, and 174m and 276m to the southwest. The westerly boreholes record Made Ground ranging from 0.95m thick to 3m thick. The Made Ground in these boreholes generally contain an upper layer of black and mauve sand, and gravel of ash and clinker, with varying mixtures of brick, timber, glass, concrete rubble, ceramic, iron and steel waste, and a thinner (0.30m- 1m thick) layer of brown clayey, very silty sand and gravel with some cobbles. Typical of mid to late Victorian land reclamation deposits.

3.4.3 A borehole was selected further inland (217m to the southeast of site) where the topography rises, to check presence of bedrock, no bedrock was recorded here. However, Made Ground was recorded here of brick and ash, with a clayed and sandy fill. This is likely associated with access roads of the residential housing of Gwynan Park.

3.4.4 The BGS records show Undivided Made Ground to the north/ northwest of the site, this corresponds with the embankment and ditches of the A55/ North Wales Coast Line railway/ Wales Coast Path, and the borehole 48m to the northwest (on the northern side of the A55) of the site corroborates this as it is outside the mapped Undivided Made Ground area and does not record Made Ground.

3.5 Mining

3.5.1 The site is not within a Coal Mining Reporting Area and there are no recorded coal outcrops or probable shallow coal workings in the vicinity of the site (Coal Authority Interactive viewer online). The risk from non-coal mining activities is defined as highly unlikely (BGS).

3.6 Ground Gas

3.6.1 We have provisionally assessed the risk of ground gas impacting the site, by reference to guidance given in the CL:AIRE RB17r "A pragmatic approach to ground gas risk assessment for the 21st Century" Card and Wilson, 2012. This is a follow up paper to the CIRIA Report 665 and is compatible with that document.

- No credible sources or pathways for landfill gas migration from an off-site landfill have been identified.
- The site has not been a registered landfill.
- Significant Made Ground is not expected on site.
- The site is not located on a carbonate rich rock that can produce carbon dioxide.
- The Envirocheck report indicates that the site is in the intermediate probability radon area (where between 1%-3% of homes are estimated to be at or above the Action Level). Radon protection measures are not required for this site.
- Table 2 in the Card and Wilson 2011 paper has been referenced and the site does not lie on a potential naturally organic soil or a humic or degradable Made Ground soil, as defined in this table.

3.6.2 There are no identified sources of ground gas at the site and the site is classified as low risk therefore in accordance with RB17 no ground gas monitoring is required, and no special precautions are required with respect to ground gas. However, this should be reviewed on completion of ground investigations and once ground conditions beneath the site have been confirmed.

4.0 ENVIRONMENTAL DATABASE

4.1 Environmental Database

4.1.1 A Envirocheck assessment report was procured (ref: 366982679 , 13.01.2025) and is presented as Appendix 8. The pertinent information from the report is presented in Table 4.

Table 4: Summary of environmental information.

Reference	Description
Historical Industrial Sites	
Potentially Contaminative Uses identified from Historical Mapping	Filling station, ca. 350m, NE Gas Works, ca. 200m, W (both are likely to be down gradient of the site)
Potentially Infilled Land	Potentially Infilled Land (Water) within 500m of the site: • Unknown Filled Ground (Pond, marsh, river, stream, dock etc), mapped in 1964, and located 350m to the northeast. • Unknown Filled Ground (Pond, marsh, river, stream, dock etc), mapped in 1964, and located 373m to the northeast. (both are likely to be down gradient of the site)
Environmental Permits, Incidents and Registers	
Discharge Consents	There are none recorded within 500m of the site.
Landfill and Other Waste	
Records of Environment Agency/BGS historic landfill sites	A recorded landfill site and a historical landfill are mapped southwest of the site at distances 503m and 616m respectively. (both are likely to be down gradient of the site)
Hydrogeology and Hydrology	
Bedrock Aquifer Designation	Secondary B Aquifer.
Superficial Aquifer Designation	Secondary Undifferentiated.
Groundwater Vulnerability	Secondary Superficial Aquifer- High Vulnerability. Secondary Bedrock Aquifer - High Vulnerability. Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer.
Source Protection Zones	None recorded within 500m of the site.

Reference	Description
Surface Water Features	A watercourse along the western, south-western boundary discharging to the north The watercourse was observed partially dry during the site visit. Another watercourse is located 50m west of the site. The main channel upstream/ source is ca.70m southwest from the southwestern end of the site, discharging at the boundary with the A55, ca.40m southwest from the northwestern end of the site. A tributary joins the main channel from the east, with the upstream/ source ca.50m west from the southwestern end of the site. Currently there is no record information regarding the upstream drainage networks connected to these channels. Afon Gyrach is located approximately 580m to the east of site, trending NNW/SSE, water direction towards the northwest, discharging into the Irish Sea.
Flooding (Rivers and Coastal)	The site is not in the area of risk of flooding from rivers or sea. The site is not in the area of flooding from surface waters.
Flooding (Groundwater)	The site is located in an area with limited potential for groundwater flooding to occur at surface.
Geological	
Mineral and Coal Extraction	The site is not within a Coal Mining Affected Areas. Non Coal Mining is highly unlikely to have occurred in site.
Radon	The Envirocheck report indicates that the site is in the intermediate probability radon area (where between 1%-3% of homes are estimated to be at or above the Action Level). No radon protective measures are necessary in the construction of new dwellings or extensions.
Potential for stability hazards	• Collapsible ground - Very low on site 80m to the NW of site- No hazard • Compressible ground – Very low on site • Ground dissolution - No hazard on site • Landslide – Low- Very low on site 109m to the northwest- Low 172m to the southwest- Very Low • Running sand - Very low on site 80m to the northwest- No hazard 99m to the northwest- Moderate • Shrinking and swelling of clay - Very low on site 80m to the northwest- No hazard 99m to the northwest- Low

Reference	Description
Industrial Land Use	
Records of potentially contaminative industrial sites	Active within 500m of the site: Petrol and Fuel Filling Stations, 368m, NE. (likely to be down gradient of the site)
Sensitive Land Use	
Special Areas of Conservation/ Site of Special Scientific Interest (SSSI)/ National Park	The site lies within 380m of the Liverpool Bay / Bae Lerpwl (Wales) Special Protection Area (SPA) to and Y Fenai a Bae Conwy / Menai Strait and Conwy Bay Special Area of Conservation (SAC) to the northeast/east. Snowdonia National Park, 437m, E Sychnant Pass SSSI, 929m, E SSSI Non River Designation Bio Mixed 300m Buffer Dissolved, ~650m, E
Ancient Woodland	860m to the east.

5.0 PRELIMINARY RISK ASSESSMENT

5.1 Preliminary Risk Assessment

5.1.1 An Environmental Risk has been addressed by adopting a site-specific, qualitative approach, to identify the risk of environmental harm. The guiding principle of this approach is an attempt to establish connecting links between a hazardous 'source', via an exposure 'pathway', to a potential 'receptor'. This is in accordance with the Department of the Environment, Transport and Regions (DETR) guidance on Contaminated Land and the Construction Industry Research and Information Association.

5.1.2 This assessment will identify where pollutant linkages may exist, by considering where a viable pathway may exist, which connects a potential source with a receptor. A pollutant linkage is the term used by the DETR in their standard procedure on risk assessment. If there is no pollutant linkage, then there is no risk. The site has been assessed using 'residential with private gardens' end-use model.

5.2 Preliminary Conceptual Site Model

5.2.1 Contaminated land risk assessment is based on the development of a conceptual model for the site. This is a representation of the relationship between potential contaminant sources, pathways and receptors. A preliminary conceptual site model is based on the inferred ground conditions and environmental data obtained from existing data sources. A preliminary conceptual site model is discussed in the following sections.

5.3 Identified Potential Sources

5.3.1 The following potential sources of contamination have been identified from historic uses of the site and the surrounding area:

5.4 On-site Sources

5.4.1 Potential sources of contamination associated with the historical and current activities on the site include:

- Electrical sub-station present at site (although given its size and year of construction it is likely to have limited potential to significantly impact the site).

5.5 Offsite Sources

5.5.1 Petrol and fuel filling station ca. 370m northeast of site, currently Shell owned, and has been mapped as a filling station since the 1977-1991 available maps (interpreted as being downstream of the site and therefore unlikely to impact the subject site).

5.5.2 A55 dual carriageway at between 1m and 18m to the north, northwest of the site (interpreted as being downstream of the site and therefore unlikely to impact the subject site).

Gas works were present between the available records of 1888 and 1991, with an expansion eastwards illustrated in the 1953 map (ca. 200m to the west of site) (interpreted as being downstream of the site and therefore unlikely to impact the subject site).

5.6 Receptors

5.6.1 The following receptors have been identified:

- Future site users (residents).
- Construction workers during development works.
- Controlled Waters (groundwater) – superficial secondary undifferentiated aquifer and bedrock secondary B aquifer.
- Surface waters - unnamed watercourse along the southwestern, western boundary.
- In ground services and construction materials.

5.7 Pathways

5.7.1 The following pathways link the potential contaminants with the sensitive receptors:

- Contact, ingestion and inhalation of contaminated soil and dust.
- Leaching and migration via soil mass and rock discontinuities.
- Humans: ingestion, skin contact, inhalation of dust and outdoor air.
- Buildings: direct contact.
- Buildings: ingress via permeable soils and/or construction gaps.
- Underlying groundwater: migration of leachable contaminants.
- Surface water: overland flow/ lateral migration of contaminants in ground.
- Surface water: drainage discharge.
- Plant uptake.

5.8 Qualitative Risk Assessment

5.8.1 A qualitative risk assessment has been undertaken for these potential source-pathway-receptor linkages. This is based on consideration of both:

- The likelihood of an event (takes into account both the presence of the hazard and receptor and the integrity of the pathway).
- The severity of the potential consequence (takes into account both the potential severity of the hazard and the sensitivity of the receptor).

- The risk assessment has been based on development of the site with a proposed 'Residential with private gardens' end-use (Table 5).

Table 5: Qualitative risk ratings.

Probability (P)	Impact (I)				
	Negligible	Minor	Moderate	Significant	Severe
Very Likely	Low/Med	Medium	Med/High	High	High
Likely	Low	Low/Med	Medium	Med/High	High
Possible	Low	Low/Med	Medium	Med/High	Med/High
Unlikely	Low	Low/Med	Low/Med	Medium	Med/High
Very Unlikely	Low	Low	Low/Med	Medium	Medium

Table 6: Summary of potential pollutant linkages (Preliminary Conceptual Site Model).

Potential Source	Potential Contaminant	Potential Pathways	Potential Receptor	Pollutant Linkage Present	Impact	Risk	Comments
Made Ground.	Metals, semi-metals, non-metals, PAH, petroleum hydrocarbons	Inhalation	Human Health – End user and on-site worker	Very Unlikely	Minor	Low	No significant Made Ground anticipated to be present
		Ingestion					
		Direct contact					
		Infiltration	Groundwater and Surface Water Quality				
		Lateral migration; groundwater					
		Vertical diffusion; groundwater					
	Asbestos	Inhalation Ingestion Direct contact	Human Health – End user and on-site worker	Very Unlikely	Minor	Low	No significant Made Ground anticipated to be present
Ground gas generation from Made Ground or organic soils.	Carbon dioxide, carbon monoxide and hydrogen sulphide	Inhalation	Human Health – Future site users and site workers	Very Unlikely	Minor	Low	No ground gas sources have been identified on site. Organic soils not anticipated.
		Migration through Superficial Deposits					
		Vertical migration; groundwater.	Groundwater and Surface Water Quality.				
Radon gas from natural ground.	Radon gas.	Inhalation	Humans – future site users.	Very Unlikely	Moderate	Low	The site is in the intermediate probability radon area. No radon protective measures are necessary in the construction of new dwellings or extensions.
Off-site sources	Heavy metals, TPH, PAHs, ground gas and vapours.	Inhalation	Human Health – site workers. Humans – future site users.	Unlikely	Moderate	Low/ Med	The groundwater flow in the area is anticipated to be towards the Irish Sea in a south to north direction. Therefore, the potential offsite sources of contamination (fuel filling station, former gas works etc) are unlikely to impact the site. The remaining area has historical been agricultural land or
		Ingestion		Unlikely	Moderate	Low/ Med	
		Direct contact		Unlikely	Moderate	Low/ Med	

Potential Source	Potential Contaminant	Potential Pathways	Potential Receptor	Pollutant Linkage Present	Impact	Risk	Comments
		Lateral migration; groundwater	Groundwater and Surface Water Quality	Unlikely	Moderate	Low/ Med	residential development.
		Vertical diffusion; groundwater		Unlikely	Moderate	Low/ Med	

6.0 GROUND INVESTIGATION

6.1.1 The site works were carried out by PT Drainage Limited and supervised by Caulmert following the procedures based on BS 5930:2015+A1:2020 – Code of Practice for Site Investigations and BS 10175:2011+A2:2017 - Investigation of Potentially Contaminated Sites. The soils encountered have been described in accordance with BS5930:2015+A1:2020.

6.1.2 Welsh Water utility plans were provided by the client, however electricity and gas utility plans were not provided and a more detailed survey is required.

6.1.3 A total of ten machine excavated trial pits were formed at the site on the 27th and the 28th of January 2025 including soakaway testing in two trial pits. The positions of the exploratory holes were selected by Caulmert to provide a wide coverage of information on the site areas. The exploratory hole location plan is provided in Appendix 1 and the logs are provided in Appendix 3.

6.1.4 The trial pits, TP1 to TP8, and SA1 and SA2 were excavated with a 3 ton mini excavator to a maximum dig depth of 1.9m below ground level. due to difficult excavation for a 3 tonne excavator. Environmental samples were collected at shallow depths and small-disturbed samples were taken at regular intervals down to the base of the holes for subsequent laboratory testing and inspection. Additional bulk samples were collected for CBR testing.

6.1.5 Soakaway testing was undertaken in trial pits SA1 and SA2 in general accordance with BRE Digest 365 ‘Soakaway Design’.

6.1.6 On completion, all trial pits were carefully backfilled with arisings in thin layers, ensuring that excavated material was replaced in the same order as it had been removed.

7.0 SAMPLING STRATEGY

7.1 General

7.1.1 The principal objectives of the study were to examine the ground conditions present on site. The strategy was to provide a general assessment of the environmental risks, geotechnical constraints and liabilities for the proposed development and while no significant contamination sources were identified in the preliminary risk assessment chemical laboratory testing was required to confirm the findings of the desk study.

7.2 Chemical Testing

7.2.1 Environmental samples were collected and submitted to the laboratory by a Caulmert Engineer. Chemical laboratory testing of soils was carried out by i2 Analytical Ltd laboratories accredited by UKAS, working where possible to MCERTS and / or ISO 17025 accreditation. Chain of custody documentation was completed and is retained by Caulmert.

7.2.2 Contamination analyses have been performed on six soil samples; five samples of Topsoil and one sample of underlying subsoil. Given no contamination sources were identified on site or within the close vicinity of the site all samples were tested to determine a default suite of general contaminants which include:

- Total petroleum hydrocarbons (TPHs), aromatic and aliphatic, from the TPH Criteria Working Group suite.
- Polycyclic(polyaromatic) aromatic hydrocarbons (PAHs), sixteen compounds (16MS).
- Benzene, ethylbenzene, toluene, xylene (BTEX), and MTBE.
- Metals, semimetals (As, Cd, Cu, Cr, Cr *hexavalent,* Pb, Hg, Ni and Zn).
- Asbestos.
- pH and organic content.

7.2.3 Five samples of subsoil were tested for soil soluble sulphates and pH according to BRE SD1 Concrete in aggressive ground.

7.2.4 Summaries of locations and strata of the samples are provided below:

Table 7: Summary of soil chemical testing.

Strata	Sample ref	Depth (m bgl)	Laboratory testing
Topsoil	TP1ES1	0.20	Asbestos/Metals/OM/PAH/TPH/BTEX
	TP3ES1	0.20	Asbestos/Metals/OM/PAH/TPH/BTEX
	TP6ES1	0.20	Asbestos/Metals/OM/PAH/TPH/BTEX
	TP7ES1	0.20	Asbestos/Metals/OM/PAH/TPH/BTEX
	TP8ES1	0.10	Asbestos/Metals/OM/PAH/TPH/BTEX
Glacial Till	TP1D2	0.80	BRE
	TP2D1	0.70	BRE
	TP3D2	0.70	BRE
	TP5ES1	0.20	Asbestos/Metals/OM/PAH/TPH/BTEX
	TP6D1	0.80	BRE
	TP7D1	0.60	BRE

Asbestos – asbestos screen

Metals – general metals/inorganics suite

OM – soil organic matter

PAH – soil PAHs suite

TPH – soil TPHs suite inc. BTEX & MTBE

BRE – pH and SO_4

7.3 Geotechnical Laboratory Testing

7.3.1 In total, seven geotechnical samples were collected and submitted for classification testing and re-moulded CBR testing to the laboratory by a Caulmert Engineer. The laboratory testing of soils was carried out by i2 Analytical Ltd laboratory accredited by UKAS, working in accordance with BS.1377: 1990.

Table 8: Summary of soil geotechnical testing.

Strata	Sample ref	Depth (m bgl)	Laboratory testing
Glacial Till	TP1D1	0.60	PSD/Plasticity Index/MC
	TP4B1	0.80	CBR
	TP6D2	1.20	PSD/Plasticity Index/MC
	TP7D2	0.70	PSD/Plasticity Index/MC
	TP8B1	0.80	CBR
	SA1D1	1.00	PSD
	SA2D1	1.00	PSD

PSD – particle size distribution (BS1377-2-2022 Clause 10)

Plasticity Index - 1 Point Liquid Limit (BS1377-2-2022 Clause 5.3)

MC – moisture content (BS1377-2-2022 Clause 4.1)

CBR – California Bearing Ratio

8.0 GROUND CONDITIONS

8.1 General Stratigraphy

8.1.1 The general stratigraphy at the site comprised a thin veneer of Topsoil overlying Glacial Till present across the entire site. Bedrock was not observed during the ground investigation. This generally reflected the published geology and the site history.

8.2 Topsoil

8.2.1 Topsoil was recorded across the site at depth of between 0.15m and 0.3m below ground level (bgl) and generally comprised dark brown slightly sandy clayey topsoil with grass roots.

8.3 Glacial Till

8.3.1 Glacial Till was encountered directly below the Topsoil from between 0.15m and 0.3m bgl down to the base of trial pits at 1.9m. Typically, Glacial Till comprise stiff to very stiff slightly sandy to sandy slightly gravelly to very gravelly CLAY occasionally with cobbles of limestone. Gravel is fine course subrounded limestone. Clayey gravel and cobbles were observed in TP5 from 0.5m to 1m, TP7 from 0.2m to 1.7m, TP8 from 0.2m to 1.7m, and in SA2 from 0.2 to 1.4m.

8.3.2 Atterberg Limit tests on three abovementioned samples recorded a moisture content of 13.1%, 14% and 19.8%, and a Modified Plasticity Index value of 9% and 19%. This would correspond to non-plastic soils and soils with a low volume change potential.

8.3.3 The correlations based on the laboratory results indicate consistency index (I_C) typical for stiff or very stiff soils, liquidity index (I_L) corresponding to overconsolidated soils, and medium compressibility (C_C).

Table 9: Summary of soil geotechnical testing.

Sample ID	TP1D1	TP6D2	TP7D2	SA1D1	SA2D1
Depth (m bgl):	0.60	1.20	0.70	1.00	1.00
Stratum	Glacial Till				
Sieve 0.425 mm	49	88	51		
Liquid Limit L_L (%)	44.00	42.00	42.00		
Plastic Limit L_P (%)	25.00	20.00	24.00		
Plasticity Index PI (%)	19.00	22.00	18.00		
Moisture(%)	14.0	19.8	13.1		
Modified PI' %	9	19	9		
Consistency Index I_c (%)	1.58	1.00	1.61		
Liquidity Index I_L (%)	-0.58	0.00	-0.61		
Compression index C_c	0.31	0.29	0.29		
Classification	CI	CI	CI		
Gravel %	42	6	35	41	19
Sand %	22	18	33	29	34
Fines %	36	76	32	30	47
Soil Description	gravelly slightly sandy CLAY	slightly gravelly slightly sandy CLAY	gravelly slightly sandy CLAY	very clayey very sandy GRAVEL	slightly gravelly slightly sandy CLAY

8.3.4 Five samples were tested for Particle Size Distribution and the results show the percentage of fines varying between 30% and 76%.

8.3.5 According to Unified Soil Classification System (USCS) the cohesive soils can be classified as CI; intermediate plasticity clay.

8.4 Groundwater

8.4.1 Groundwater was observed during the intrusive ground investigation as seepage in TP4, TP5, TP6, TP7, TP8, SA1 and SA2 the latter as water rapid inflow.

Table 10: Summary of groundwater inflow in exploratory holes *(depth in metres below ground level)*.

Inflow/ Depth	Exploratory Hole									
	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	SA1	SA2
Seepage	*Dry*	*Dry*	*Dry*	0.90	0.60	0.80	0.60	0.70	0.70	
Inflow										0.50

8.4.2 The groundwater inflow (seepage and ingress) were observed as drainage downhill within more granular lenses.

8.4.3 It is recommended that groundwater monitoring is undertaken to understand seasonal variations of groundwater levels.

8.5 Permeability Testing

8.5.1 The permeability testing was undertaken on the 28th of January 2025 and comprised the excavation of two trial pits, SA1 and SA2, with follow on infiltration tests, which were undertaken in general accordance with BRE 365.

8.5.2 The permeability testing was carried out in the higher lying southern part of the site (SA1) and in the low lying area to the north of the site (SA2) to provide spatial distribution across the site. Only one fill cycle was possible in each of the test locations due to the slow infiltration rate and groundwater seepage in the holes.

8.5.3 The tests were carried out in during the winter months on a rainy day, which could be considered worst-case conditions.

8.5.4 The data of the SA1 had to be extrapolated to allow a infiltration rate to be calculated however are not considered to be representative due to the groundwater seepage.

Table 11: Summary of permeability tests.

Location	Depth (mbgl)	Design Infiltration Rate (m/s)	Comments
SA1	1.20	5.1×10^{-6}	Poor drainage. Seepage in the excavation at 0.7m.
SA2	1.40	failed	Drainage downhill to the north of the site

8.5.5 The extrapolated infiltration tests result in the SA1 and general drainage conditions, permeable strata already saturated, on site indicate that soakaways would not provide a viable drainage solution on site.

9.0 CONTAMINATION ASSESSMENT

9.1 Methodology for Contamination Risk Assessment

9.1.1 This section assesses the likely potential contamination to be present, and the risk it may pose to human health, the natural environment and the built environment.

9.1.2 In the United Kingdom, the legislative regime for identifying and dealing with contaminated land is set out in Part IIA of the Environmental Protection Act 1990. The Act, together with associated Regulations and Guidance (published separately for England, Wales, Scotland and Northern Ireland), describe the regulatory functions and actions aimed at identifying contaminated land, and defining the persons liable for voluntary or enforced remediation.

9.1.3 The methodology recommended for identifying contaminated land is outlined in the DEFRA / EA published guidance document, CLR11 "Model Procedures for the Management of Land Contamination" (2004). The methodology takes the form of the identification of potential contaminant sources, pathways and sensitive receptors and their likely predilection to be linked. Under the guidance, this is termed a "pollutant linkage".

9.1.4 For there to be a potential risk from contamination, a complete-source-pathway-receptor pollutant linkage must exist, or potentially exist, during and after development of the site. Risk can be defined as the combination of the consequence of a harmful effect and the probability of its occurrence. Each aspect of the pollutant linkage is defined below:

- Source (contaminant): A substance that is in or under the land that has the potential to cause harm to the receptor.
- Pathway: The route(s) or means via which a receptor can be exposed to, or affected by, a contaminant.
- Receptor: The factor (person, built environment or ecosystems) that might adversely be affected by the source.

9.1.5 The potential sources, pathways and receptors for each site are encapsulated into a conceptual site model (CSM). A CSM is the means by which the sources, pathways and receptors are systematically considered; and either discounted, or else earmarked as potentially valid and warranting further investigation.

9.1.6 In accordance with the approach advocated in CLR11, a CSM has therefore been derived for the site using information obtained during the desk study and site walkover, as reported earlier in this document, as well as the results from the ground investigation and from the laboratory chemical analyses of the samples collected from site.

9.2 Human Health - Generic Assessment Criteria (GAC)

9.2.1 A total six samples, five samples of Topsoil and one sample of underlying superficial deposits were selected for laboratory chemical testing.

9.2.2 The pH values of the samples ranged between 6.1 and 6.7.

9.2.3 The soil organic matter content of the samples ranged between 5.1% and 11%. The results have been compared to 1% soil organic matter content values, in the first instance, as the most conservative value.

9.2.4 The results of the laboratory testing confirmed that all of the analysed metals, metalloids, and all poly aromatic hydrocarbons (PAH) are present at concentrations below the appropriate GAC threshold value for residential with plant uptake values.

9.2.5 All TPH CWG bandings are present at concentrations below the limit of detection or below the appropriate GAC threshold values for residential with plant uptake end use.

9.2.6 No visual or olfactory evidence of chemical contamination was encountered during the investigation.

9.2.7 All the samples submitted for testing also underwent asbestos screening, no fibres were identified within any samples.

9.2.8 No remedial action is required with respect to the proposed end use. However, should any olfactory or visual evidence of contamination be encountered during groundworks then Caulmert should be contact immediately and work cease until appropriate investigation has been completed.

9.3 Plant Life

9.3.1 All samples were below the most conservative GAC threshold criteria for a 'residential' end-use, for all inorganic and organic contaminant species assessed. Where there is no exceedance of a GAC, the risks are deemed to be insignificant and the site is suitable for use without further consideration.

9.3.2 Further advice from a landscape architect should be sought with regards to reusing topsoil onsite and depth of a clean growing medium within proposed landscaped areas.

9.4 Groundwater

9.4.1 The European Water Framework Directive (2000/60/EC) (WFD) and its daughter Directives establish a consolidated way of controlling water quality. The Environment Agency (July 2008) has issued a revised Groundwater Protection Policy (known as GP3). The UK Government has set out a timetable for the adoption of the WFD which formalises the way in which the quality of surface water and groundwater are to be assessed. This is set out in 'The River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions' 2017.

9.4.2 A groundwater body is defined as groundwater in an aquifer capable of supporting an abstraction of $10m^3$/day or 50 people over a sustained period under the WFD. Groundwater bodies are a strategic resource, even if there is no current abstraction. Lesser amounts of

groundwater in an aquifer are not considered as receptors in their own right but may still be pathways to other receptors such as surface water bodies or aquatic ecosystems.

9.4.3 No potentially contaminative sources have been identified onsite and the soil testing indicates that there are no elevated concentrations of Chemicals of Concern within the soils to surface water features identified within close proximity to the site and the presence of low permeability Glacial Tills will limit any vertical migration to the underlying Secondary B Aquifer. It is therefore concluded that the site does not pose a significant risk to Controlled Waters and no mitigation measures are required.

9.5 Ground Gas

9.5.1 No potential sources of ground gas were found in the desk study and therefore in accordance with RB17 no ground gas monitoring was undertaken.

9.5.2 The intrusive ground investigations undertaken to date have recorded Glacial Till across the site and confirmed that the that the gas generation potential at the site is very low. With no significant Made Ground, peat or organic soils observed during the ground investigation.

9.5.3 The site is in the intermediate probability radon area (where between 1%-3% of homes are estimated to be at or above the Action Level). Radon protection measures are not required for this site.

9.5.4 Based on the above findings no special precautions are required for the proposed development with respect to ground gas or radon gas. However, should ground conditions be found to vary during the site strip from those record then Caulmert should be contacted for advice.

9.6 Conceptual Site Model (CSM)

9.6.1 An updated CSM has been derived from the desk study, site walkover, ground investigation and laboratory testing is presented in Table 12 below.

Table 12: Summary of updated potential pollutant linkages (Conceptual Site Model).

Potential Source	Potential Contaminant	Potential Pathways	Potential Receptor	Pollutant Linkage Present	Impact	Risk	Comments
Made Ground.	Metals, semi-metals, non-metals, PAH, petroleum hydrocarbons	Inhalation	Human Health – End user and on-site worker	Very Unlikely	Minor	Low	Agricultural and no made Ground observed. No elevated contaminants identified during GI.
		Ingestion					
		Direct contact					
		Infiltration	Groundwater and Surface Water Quality				
		Lateral migration; groundwater					
		Vertical diffusion; groundwater					
	Asbestos	Inhalation Ingestion Direct contact	Human Health – End user and on-site worker	Very Unlikely	Minor	Low	No Made Ground observed and no asbestos fibres detected in samples.
Ground gas generation from Made Ground or organic soils.	Carbon dioxide, carbon monoxide and hydrogen sulphide	Inhalation	Human Health – Future site users and site workers	Very Unlikely	Minor	Low	No ground gas sources have been identified on site. No Made Ground recorded during the site investigation. No significant deposits of organic soils recorded.
		Migration through Superficial Deposits					
		Vertical migration; groundwater.	Groundwater and Surface Water Quality.				
Radon gas from natural ground.	Radon gas.	Inhalation	Humans – future site users.	Unlikely	Moderate	Low/ Med	The site is in the intermediate probability radon area. No radon protective measures are necessary in the construction of new dwellings or extensions.
Off-site sources	Heavy metals, TPH, PAHs.		Human Health – site workers. Humans – future site users.	Very Unlikely	Minor	Low	Historical agricultural land use followed by residential development. No elevated contaminants identified during GI.

10.0 ENVIRONMENTAL ASSESSMENT AND RECOMMENDATIONS

10.1 Human Health

10.1.1 The risk assessment undertaken in previous section indicates that there are no contaminants of concern with respect to the proposed residential end –use. It is also worth noting that the majority of TPH and some PAH concentrations are below the limit of detection. The site is suitable for the proposed end use within its current state and no remedial measures are required in respect to contamination.

10.1.2 However, should unlikely contamination be encountered during the ground works/construction then works should be ceased in that area until it has been assessed by Caulmert.

10.1.3 At this stage, the CSM constitutes a risk assessment which determines only the likelihood of a linkage being present. The CSM should be refined and revised if during site works ground conditions are found to differ and potential contamination is encountered.

10.1.4 The identification of a potential pollutant linkage does not necessarily mean that there is a risk, or that the linkage is present, but that further investigation is required to establish whether or not that risk exists. Whereby a risk is identified and verified, the potential consequence of harmful effect and the likelihood of its occurrence should then be established in order to determine whether the risk is acceptable or unacceptable.

10.1.5 Table 12 assumes that the land uses will be residential with private gardens and is not valid for other land uses.

10.2 Plant Life

10.2.1 The risk assessment undertaken in Section 9 indicates that there are no contaminants of concern in concentrations which may be harmful to plant life present on-site. The results indicate that the topsoil is chemically suitable, however it is recommended that a landscape architect is contacted for further advice regarding the requirements for any growing medium associated with landscaped areas.

10.3 Controlled Waters

10.3.1 No contamination sources have been identified and therefore it is concluded that the site is currently unlikely to pose a significant risk to controlled waters.

10.4 Precautions Against Ground Gas

10.4.1 No radon protective measures are necessary in the construction of new dwellings or extensions and no special precautions are required with respect to ground gas based on the recorded ground conditions within this report.

10.5 Water Supply Pipes

10.5.1 Permeation and accelerated deterioration of pipe material can occur due to chemical reactions between the pipe and contaminants in the ground in which it is laid. This can lead to premature failures resulting in leakage and loss of water quality.

10.5.2 No contaminants of concern have been identified and standard PPE water supply pipes are anticipated to be appropriate at the site however water supply pipes should be specified and laid in accordance with the regional water supply company's specifications.

10.6 Waste Management

10.6.1 The handling, re-use or disposal of waste is regulated by Natural Resources Wales. Any material excavated on-site may be classified as waste and it is the responsibility of the holder of a material to form their own view on whether or not it is waste. One of the ways this can be achieved is set out in the Development Industry Code of Practice (CoP; Ref. 9). This builds on the Environment Agency guidance document Definition of waste: developing greenfield and brownfield sites (2006). The Agency will take into account the use of the CoP in deciding whether to regulate materials as waste. If materials are dealt with in accordance with the CoP, the Agency considers that those materials are unlikely to be waste at the point when they are to be used for the purpose of land development.

10.6.2 All material proposed for off-site disposal (e.g. during future construction works) should be given a proper description and waste classification assessment as required by the Environmental Protection Duty of Care Regulations (Ref. 10), and in accordance with WM3 and the Environment Agency Technical Guidance on the assessment and classification of Hazardous Waste.

10.6.3 It is anticipated that all soils onsite would be classified as 'inert'.

10.7 Outline Remedial Measures

10.7.1 No specific risks have been identified which require remedial action at this stage. As previously mentioned, should any visual or olfactory evidence of contamination be encountered during ground works then all work in that area should stop until the risks have been fully assessed.

11.0 PRELIMNARY GEOTECHNICAL ASSESSMENT AND RECOMMENDATIONS

11.1 Proposed Development

11.1.1 The proposed development will comprise of low rise housing with private gardens, along with associated access roads and public open space. No detailed information is available on the site levels at this stage and it is understood that this will be developed shortly by the design team.

11.1.2 However, it is assumed that structures will be typically low rise and lightly loaded. Due to the sloping nature of the site some minor changes in levels are anticipated on site to create level development plots. Once site levels have been fixed Caulmert should be contacted to confirm the recommendations outlined below are still valid and where necessary a Earthworks Specification produced.

11.2 Geotechnical Categorization of the Proposed Development

11.2.1 Eurocode 7, Section 2 advocates the use of geotechnical categorization of the proposed structure(s) to establish the design requirements. Initial categorisation can be made before site investigation and can be used to define the scope and extent of geotechnical investigation required. For the purposes of this investigation, the proposed structures have been classed as follows:

- Geotechnical Category 2.

11.3 Site Preparation, Earthworks, Groundworks and Landscaping

11.3.1 A Topsoil strip should be undertaken at the start of the enabling groundworks and appropriately stockpiled. Where more clayey soils are present at shallow depth, they are likely to be susceptible to ‘wetting up’ and trafficking and should be protected by the construction of an appropriate working platform.

11.3.2 Groundwater seepage was encountered during the ground investigations at depths between 0.5m and 0.9m, with inflow within gravel and cobbles in SA2 at 0.5m depth. The observed groundwater seepage and inflow indicates a general drainage downslope to the north, northwest. It is envisaged that any groundwater seepages will generally be minor to moderate and may be controlled by sump pumping methods. Care should be taken to ensure no significant loss of fines.

11.3.3 However, given the low permeability of the more cohesive soils surface water runoff and ponding within excavations may be an issue during wetter months or during and following heavy precipitation. Again, it is envisaged that surface water run-off and ponding can be controlled through temporary drainage and sump pumping methods.

11.3.4 It should be noted that while the trial pits were generally stable at shallow depth down to a depth of 1.9m. It is recommended that no site personnel enter any trenches unless there is adequate support, and this has been assessed by a competent person. Trench support may also be required for any long term excavations over 1m deep.

11.3.5 No buried structures were encountered during the ground investigation and given the site has not been previously developed no relic structures are anticipated. Where they are encountered and they cannot be removed there location will need to be assessed by the scheme's designers. All excavations are anticipated to be achievable with standard plant and there is unlikely to be a need for a pneumatic breaker.

11.4 Foundations

11.4.1 It is understood that the development will comprise low-rise dwellings with private gardens.

11.4.2 Although no loadings are known at this stage it is anticipated that loadings will be light to moderate.

11.4.3 The Glacial Till Deposits are considered to be a suitable bearing stratum for conventional shallow foundations at not less than 0.75m below existing ground level or 0.20m into the top of the formation, whichever is the deeper. To coincide with NHBC Standards for soils with a low volume change potential.

11.4.4 Based on the visual assessment during the ground investigation by a geotechnical engineer at the abovementioned depths an allowable safe bearing capacity of 150kPa may be adopted for foundation design for foundations up to1.0m in width. This allows for a factor of safety of three against shear failure and will limit the total foundation settlement to less than 25mm and differential settlement to half this value.

11.4.5 In order to minimise differential settlement of spread foundations spanning variable soils, the variable content of fines within the soils, it is recommended that suitable reinforcing be incorporated into the foundations to avoid the occurrence of localised movement and the creation of hard spots.

11.4.6 It is recommended that a detailed foundation assessment in accordance with NHBC guidance is undertaken on a plot by plot basis once a development layout has been fixed and a tree survey completed.

11.4.7 The depth of foundations should be designed, and the formations inspected by a competent geotechnical engineer. Any sub-formation materials deemed as unsuitable such as soft or loose zones should be excavated and replaced with well compacted suitable granular fill or lean mix concrete.

11.4.8 The laboratory test results indicate the plasticity index in one sample is higher than 20% consequently the soil not considered to be frost susceptible. The plasticity index is less than 20% in other two samples and more than 10% is finer than 0.075mm with these values indicating intermediate permeability and consequently frost susceptible soils.

11.4.9 Foundation excavations should be protected from water and inclement weather including frost and any water should be removed by pumping from a sump in the base of the excavation.

Care should be taken to prevent the removal of fines when controlling groundwater. Further guidance should be sought if further groundwater control measures are required.

11.5 Ground Floor Slabs

11.5.1 It is recommended that suspended ground floor slabs are initially considered for all properties given the potential for low volume change soils to be present at shallow depth across the site. Once a development layout has been fixed and detailed review should take place. Provided all Topsoil is stripped off, it may be possible to adopt ground bearing floor slabs in areas where non shrinkable soils are present at shallow depth.

11.6 Roads and Pavements

11.6.1 The conditions prevailing at the time of construction will affect the CBR of the subgrade soil and its strength.

11.6.2 Research has shown the importance of the equilibrium moisture content of the subgrade. The relationship between soil suction and the moisture content shows that a soil that becomes wet during construction will retain water and will therefore be weaker under the pavement in the equilibrium condition than a foundation that has remained dry, particularly for soils of low to medium plasticity.

11.6.3 The formation for new pavements is likely to be comprise mainly Glacial Till cohesive soils, however granular soils were observed locally.

11.6.4 Equilibrium CBR values for various materials for poor and good construction conditions are given in a report by the TRRL (Report 1132), these equilibrium CBR values are indicated for poor and good construction conditions assuming a high water table, and a thick pavement construction, in the TRRL Report.

11.6.5 The average values of two laboratory CBR test results were 1.8% and 3%. This may indicate the CBR values across the site to be less than 2.5%, and the sub-grade may be unsuitable for both the trafficking of site plant and as support for a permanent foundation, without improvement works being undertaken.

11.6.6 It is recommended that further insitu CBR testing is undertaken to better assess design CBR value for the shallow soils.

11.6.7 Any Improvement works should be carried out in accordance with CD255 - Design for new pavement foundations. In summary, consideration may be given to the following potential remedial techniques:

- excavation and re-engineering or replacement of weaker soils.
- the inclusion of geosynthetic reinforcement within the unbound layers of the capping and sub-grade.

11.6.8 If any loose or soft spots observed than proof rolling of the formation level would be required and any loose or soft spots to be removed and replaced with an engineered fill, in accordance with a suitable Specification. The formation level will also need to be protected during inclement weather from deterioration.

11.6.9 Prior to the placement of the founding materials and the construction of the road pavement, the sub-formation and formation will need to be inspected and checked in accordance with a suitable Specification to ensure the ground conditions are as expected. All testing should be carried out in accordance with DMRB IAN 73/06 and confirm that the ground conditions at time of construction are consistent with the previous design parameters.

11.7 Protection of Buried Concrete

11.7.1 Thirty-one samples submitted for chemical and geotechnical testing were tested for pH and sulphate content (2:1 water soluble extraction). The testing results were as follows:

Table 13: Assessment of aggressive chemical environment for concrete.

	Results Range
pH (units)	6.8-8.2
Water soluble sulphate (SO_4) (mg/l)	14.9-58.5

11.7.2 The results have been compared to the guidance contained in BRE Special Digest 1, Concrete in aggressive ground, 2005. Based on Greenfield conditions and a mobile groundwater regime, in the range of proposed foundations, the site is classed as follows:

Table 14: Assessment of concrete classification.

Design Sulphate class	DS-1
ACEC Class	AC-1

11.7.3 Concrete below ground must comply with the requirements of Parts D to F of Special Digest 1, as appropriate.

12.0 FURTHER WORKS

12.1.1 The results of the laboratory testing confirmed that all of the analysed contaminants are present at concentrations below the appropriate GAC threshold value for residential with plant uptake values.

12.1.2 All the samples submitted for testing also underwent asbestos screening, no fibres were identified within any samples.

12.1.3 No specific risks have been identified which require remedial action at this stage.

12.1.4 Although the risk of unidentified contamination being present on site is very low it is recommended that groundworkers are briefed over the potential for contamination to exist and to contact Caulmert should any visual or olfactory evidence be identified.

12.1.5 It is recommended that a detailed geotechnical assessment including detail foundation assessment is undertaken for each plot, as part of the design appraisal once a development layout has been confirmed and structural loadings are known. In situ CBR testing is recommended once site levels have been set to better assess and confirm a design CBR value for the development's pavements.

13.0 REFERENCES

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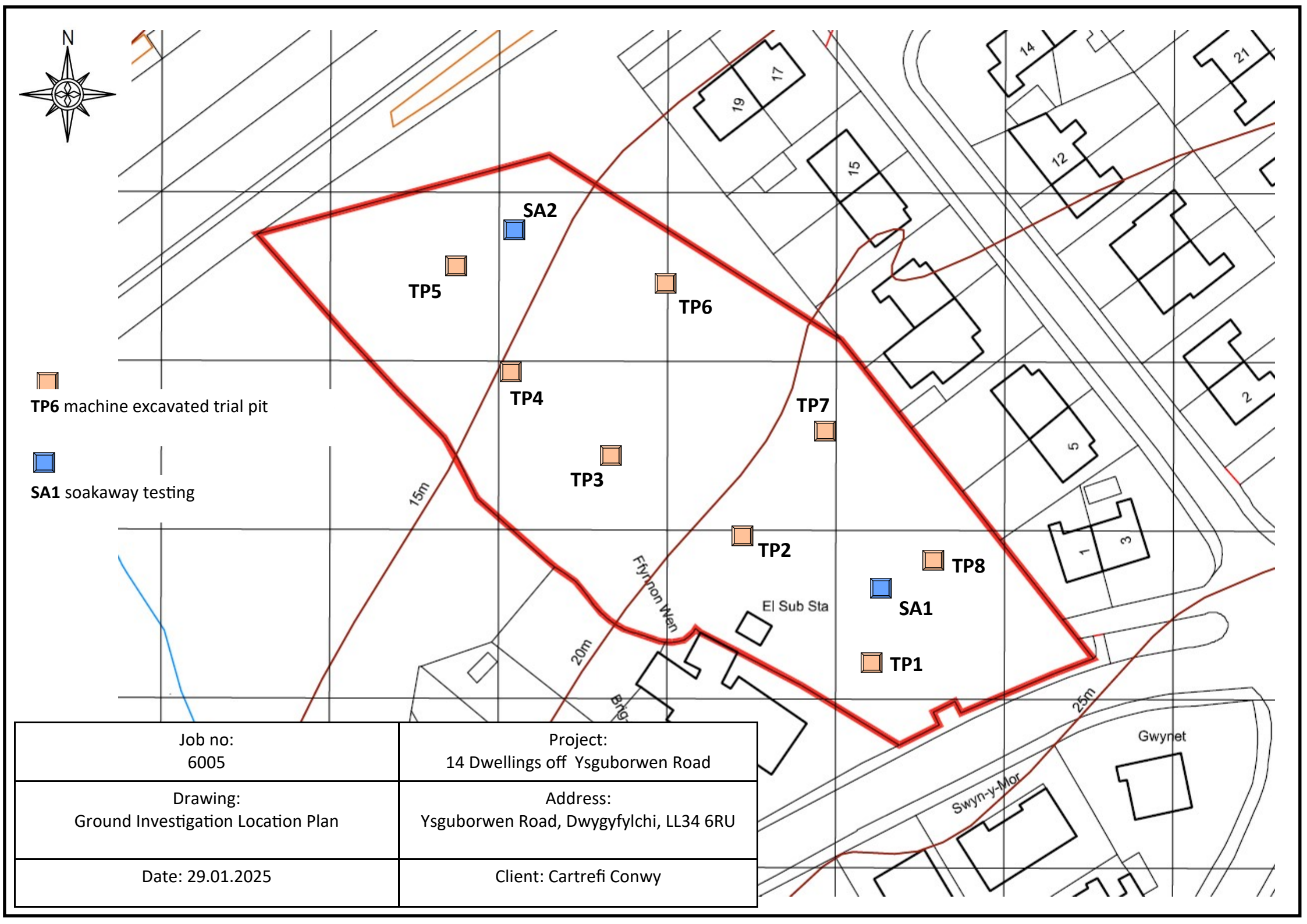
APPENDICES

APPENDIX 1

Ground Investigation Location Plan



TP6 machine excavated trial pit

SA1 soakaway testing

Job no: 6005	Project: 14 Dwellings off Ysguborwen Road
Drawing: Ground Investigation Location Plan	Address: Ysguborwen Road, Dwygyfylchi, LL34 6RU
Date: 29.01.2025	Client: Cartrefi Conwy

APPENDIX 2

Site Walkover Photographs

A general view to the south.

Overgrown scrubs along the western boundary.

Residential housing to the east.

Site access from Ysguborwen Road.

Electrical substation in the southwestern part of the site.

Stonewall along the Ysguborwen Road, site's southern boundary.

Watercourse along the western, southwestern boundary.

APPENDIX 3

Exploratory Holes Logs

Hole ID	Project	Date
TP 1	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	ES1 at 0.2m
0.20-1.10	Brown gravelly slightly sandy CLAY with cobbles of limestone. Gravel is fine course subrounded limestone.	D1 at 0.6m $D2_{BRE}$ at 0.8m
Terminated at 1.10 due to difficult excavation.		
Groundwater	*not observed*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 2	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	
0.20-1.90	Light brown locally light grey sandy very gravelly CLAY with cobbles of limestone.	$D1_{BRE}$ at 0.7m
Terminated at 1.90 due to difficult excavation.		
Groundwater	*not observed*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 3	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	ES1 at 0.2m
0.20-1.60	Brown sandy very gravelly CLAY with cobbles of limestone. Gravel is fine course subrounded limestone.	$D2_{BRE}$ at 0.7m
Terminated at 1.60 due to difficult excavation.		
Groundwater	*not observed*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 4	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	
0.20-0.60	Brown slightly sandy slightly gravelly weathered CLAY.	
0.60-1.80	Stiff becoming very stiff to the base reddish brown locally light grey slightly sandy slightly gravelly CLAY with cobbles of limestone. Gravel is fine course subrounded limestone.	B1 at 0.8m
Terminated at 1.80 due to difficult excavation.		
Groundwater	*Seepage from 0.9m*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 5	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.15	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	
0.15-0.50	Stiff brown slightly sandy gravelly CLAY.	ES1 at 0.2m
0.50-1.00	Clayey GRAVEL and COBBLES of subrounded limestone.	
1.00-1.80	Stiff brown slightly sandy gravelly CLAY.	
Terminated at 1.80 due to difficult excavation.		
Groundwater	*Seepage from 0.6m*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 6	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.30	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	ES1 at 0.2m
0.30-0.50	Brown slightly sandy slightly gravelly weathered CLAY.	
0.50-0.80	Light brown locally light grey slightly sandy very gravelly CLAY.	
0.80-1.90	Stiff reddish brown locally light grey slightly sandy slightly gravelly CLAY. Gravel is fine course subrounded limestone.	$D1_{BRE}$ at 0.8m D2 at 1.2m
Terminated at 1.90 due to difficult excavation.		
Groundwater	*Seepage from 0.8m*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 7	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	ES1 at 0.2m
0.20-1.70	Light brown gravelly slightly sandy CLAY with cobbles of subrounded limestone.	$D1_{BRE}$ at 0.6m D2 at 0.7m
Terminated at 1.70 due to difficult excavation.		
Groundwater	*Seepage from 0.6m*	
Sidewalls	*stable*	

Hole ID	Project	Date
TP 8	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	ES1 at 0.1m
0.20-1.70	Light brown slightly clayey sandy fine to coarse GRAVEL and occasional cobbles of subrounded limestone.	B1 at 0.8m
Terminated at 1.70 due to difficult excavation.		
Groundwater	*Seepage from 0.7m*	
Sidewalls	*stable*	

Hole ID	Project	Date
SA 1	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	
0.20-1.20	Light brown very clayey very sandy fine to coarse GRAVEL and occasional cobbles of subrounded limestone.	D1 at 1m
Terminated at 1.20 to carry out permeability testing.		
Groundwater	*Seepage from 0.7m*	
Sidewalls	*stable*	

Hole ID	Project	Date
SA2	Land off Ysguborwen Rd., Dwygyfylchi	27.01.2025
	Job no	Client
	6005	Cartrefi Conwy
Depth (m bgl)	Description of Strata	Samples
0.00-0.20	TOPSOIL: dark brown slightly sandy clayey topsoil with grass roots.	
0.20-1.40	Light brown slightly gravelly slightly sandy CLAY with cobbles of subrounded limestone.	D1 at 1m
Terminated at 1.40 to carry out permeability testing.		
Groundwater	*Water ingress at 0.5m*	
Sidewalls	*stable*	

APPENDIX 4

Ground Investigation Photographs

TP1

TP2

Caulmert
engineering environmental planning

TP3

TP4

TP5

TP6

TP7

TP8

SA1

Start

End

SA2

Start

End

APPENDIX 5

Permeability Tests Results

BRE365 SOIL INFILTRATION RATE TEST SA1

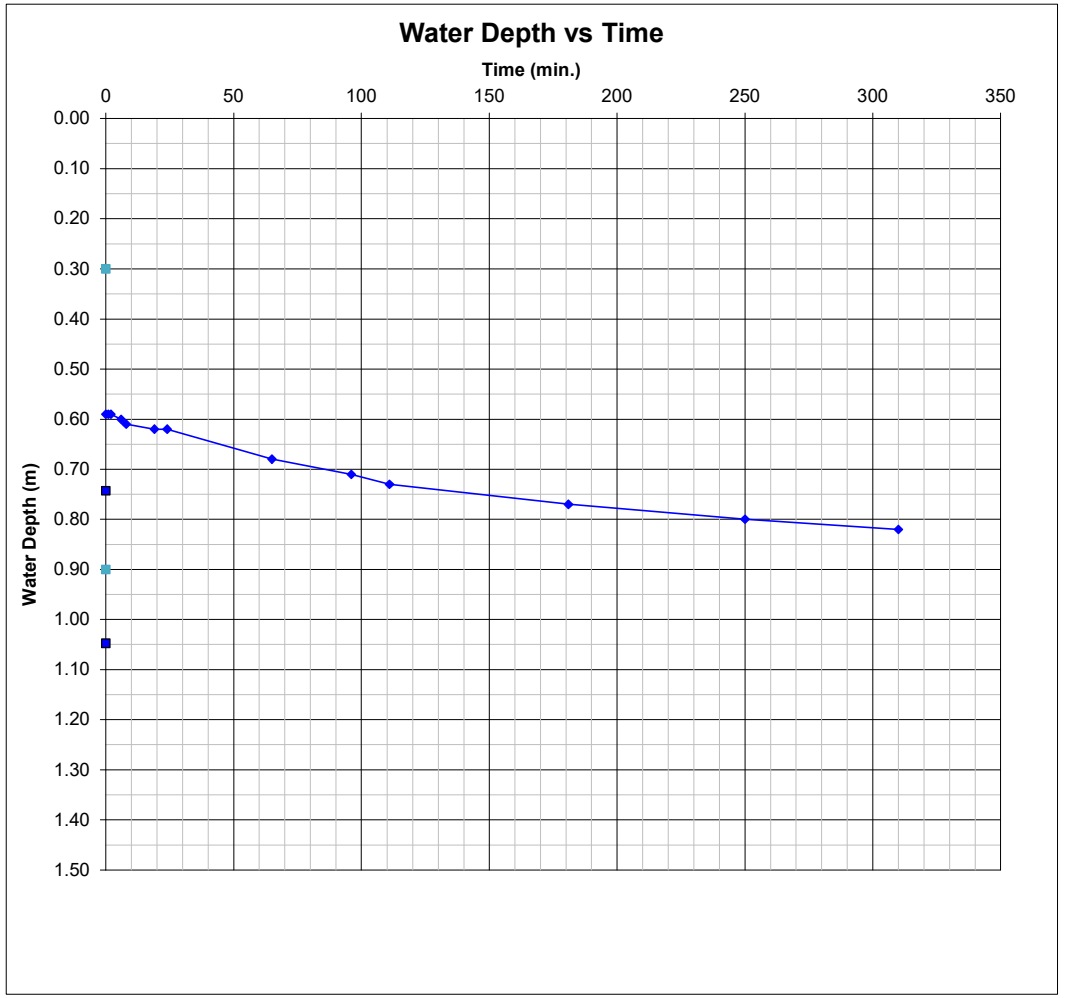
6005 Land off Ysguborwen Road, Dwygyfylchi

Trial Pit Information	
Length (m)	1.60
Width (m)	0.40
Depth (m)	1.20
Groundwater	none
Weather Conditions	rain
Date	28.01.2025

Remarks	
seepage downhill observed at ech trial pit	k
value extrapolated	

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.59				
1	0.59				
2	0.59				
6	0.60				
8	0.61				
19	0.62				
24	0.62				
65	0.68				
96	0.71				
111	0.73				
181	0.77				
250	0.80				
310	0.82				

Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	1.20		
Water Depths (m)			
Water depth at start of test	0.59		
Water depth at end of test	0.82		
Effective depth (measured)	0.23		
% Effective storage depth	0.38		
Effective Storage Depths (m)			
Effective storage depth (100%)	0.61		
Effective storage depth (75%)	0.46		
Effective storage depth (50%)	0.31		
Effective storage depth (25%)	0.15		
Outflow Time (min)			
Time for measured outflow	310		
Time for 100% outflow	1000		
Time for 75-25% outflow	610		
Volume of Outflow (m^3)			
Over measured effective depth	0.15		
Over 100% effective depth	0.39		
From 75% - 25% effective depth	0.20		
Surface Area (m^2)			
For 100% effective storage	3.08		
For 50% effective storage	1.86		
Over measured depth	1.56		
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth	2.1E-06		
Over measured depth	5.1E-06		
Over 75% - 25% effective depth	**2.9E-06**		



Design Soil Infiltration Rate: 5.1×10^{-6} m/s

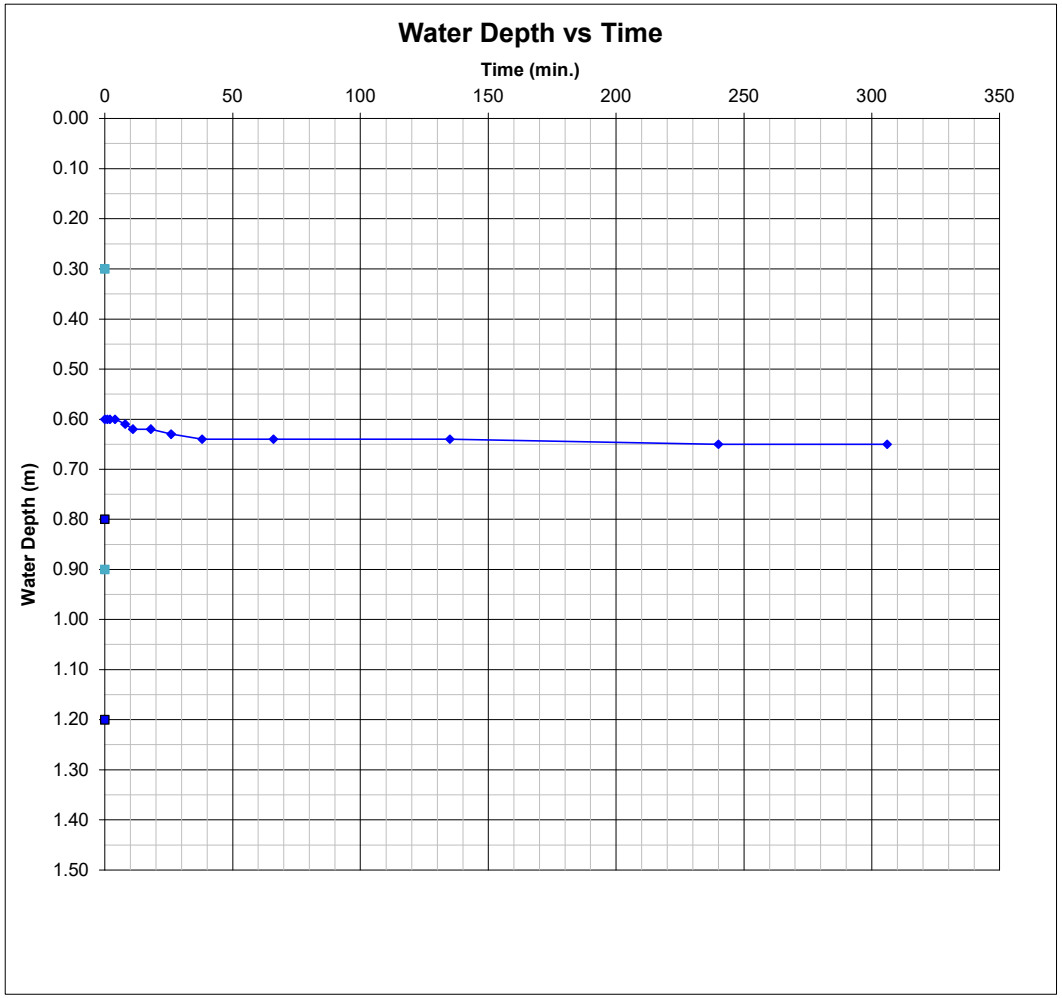
BRE365 SOIL INFILTRATION RATE TEST SA2

6005 Land off Ysguborwen Road, Dwygyfylchi

Trial Pit Information	
Length (m)	1.60
Width (m)	0.40
Depth (m)	1.20
Groundwater	none
Weather Conditions	rain
Date	28.01.2025

Remarks
groundwater ingress at 0.5m
seepage downhill observed at ech trial pit

Cycle 1		Cycle 2		Cycle 3	
Time (min)	Depth (m)	Time (min)	Depth (m)	Time (min)	Depth (m)
0	0.60				
1	0.60				
2	0.60				
4	0.60				
8	0.61				
11	0.62				
18	0.62				
26	0.63				
38	0.64				
66	0.64				
135	0.64				
240	0.65				
306	0.65				



Final Excavation Depth (m)	Cycle 1	Cycle 2	Cycle 3
At end of testing cycle	1.40		
Water Depths (m)			
Water depth at start of test	0.60		
Water depth at end of test	0.65		
Effective depth (measured)	0.05		
% Effective storage depth	0.06		
Effective Storage Depths (m)			
Effective storage depth (100%)	0.80		
Effective storage depth (75%)	0.60		
Effective storage depth (50%)	0.40		
Effective storage depth (25%)	0.20		
Outflow Time (min)			
Time for measured outflow	306		
Time for 100% outflow	–		
Time for 75-25% outflow	–		
Volume of Outflow (m^3)			
Over measured effective depth	0.03		
Over 100% effective depth	0.51		
From 75% - 25% effective depth	0.26		
Surface Area (m^2)			
For 100% effective storage	3.84		
For 50% effective storage	2.24		
Over measured depth	0.84		
Soil Infiltration Rate (m/s)	**Cycle 1**	**Cycle 2**	**Cycle 3**
Over 100% effective depth			
Over measured depth			
Over 75% - 25% effective depth			

Soakaway not practicable due to genaral downhill drainage condition

APPENDIX 6

Chemical Laboratory Testing Results

Caulmert Ltd
Glyndwr Innovations Ltd
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St Asaph
LL17 0JD

e: CezarySalwa@caulmert.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 25-004313

Project / Site name:	Dwygyfylchi	**Samples received on:**	31/01/2025
Your job number:	6005	**Samples instructed on/ Analysis started on:**	31/01/2025
Your order number:	18300	**Analysis completed by:**	06/02/2025
Report Issue Number:	1	**Report issued on:**	07/02/2025
Samples Analysed:	11 soil samples		

Signed:

Charlotte Andrew
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438492	438493	438494	438495
Sample Reference				TP1ES1	TP1D2	TP2D1	TP3ES1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10	0.80	0.70	0.20
Date Sampled				27/01/2025	27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	36	10	12	36
Total mass of sample received	kg	0.1	NONE	1.4	1.2	1.2	1.1
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KMC	-	-	KMC
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	6.4	6.9	8.2	6.1
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	30	44	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	14.9	22.1	-
Organic Matter (automated)	%	0.1	MCERTS	11	-	-	8.7
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	0.06	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.08	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.19	-	-	0.07
Pyrene	mg/kg	0.05	MCERTS	0.18	-	-	0.07
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.1	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.12	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	-	< 0.80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	-	-	5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	-	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	-	-	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	-	-	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	32	-	-	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9	-	-	7.8
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	-	-	48

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438492	438493	438494	438495
Sample Reference				TP1ES1	TP1D2	TP2D1	TP3ES1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10	0.80	0.70	0.20
Date Sampled				27/01/2025	27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	-	11
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	-	-	11
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	-	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	-	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	-	< 10
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	-	< 10
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	-	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438496	438497	438498	438499
Sample Reference				TP3D1	TP5ES1	TP6ES1	TP6D1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.60	0.20	0.10	0.80
Date Sampled				27/01/2025	27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	23	30	11
Total mass of sample received	kg	0.1	NONE	1.3	1.2	1.4	1.2
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	-	KMC	KMC	-
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	8.2	6.4	6.1	6.8
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	45	-	-	36
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	22.4	-	-	18.2
Organic Matter (automated)	%	0.1	MCERTS	-	5.1	6.4	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	0.08	0.08	-
Pyrene	mg/kg	0.05	MCERTS	-	0.07	0.06	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	< 0.05	0.07	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	< 0.80	< 0.80	-
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	9.6	6.6	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	24	26	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	21	15	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	30	27	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	13	11	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	81	63	-

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438496	438497	438498	438499
Sample Reference				TP3D1	TP5ES1	TP6ES1	TP6D1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.60	0.20	0.10	0.80
Date Sampled				27/01/2025	27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**				
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	< 10	< 10	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	< 10	< 10	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	< 10	< 10	-
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	-	< 8.0	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438500	438501	438502
Sample Reference				TP7ES1	TP7D1	TP8ES1
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				0.20	0.60	0.10
Date Sampled				27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	39	12	30
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.4
Asbestos						
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KMC	-	KMC
General Inorganics						
pH (L099)	pH Units	N/A	MCERTS	6.1	8	6.7
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	120	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	58.5	-
Organic Matter (automated)	%	0.1	MCERTS	11	-	6.7
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	0.06
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.1	-	0.12
Pyrene	mg/kg	0.05	MCERTS	0.08	-	0.09
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.06
Chrysene	mg/kg	0.05	MCERTS	0.06	-	0.06
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	0.09
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	< 0.80
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	-	7.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	-	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	-	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	-	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.9	-	14
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	49	-	89

Analytical Report Number: 25-004313
Project / Site name: Dwygyfylchi
Your Order No: 18300

Lab Sample Number				438500	438501	438502
Sample Reference				TP7ES1	TP7D1	TP8ES1
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				0.20	0.60	0.10
Date Sampled				27/01/2025	27/01/2025	27/01/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Petroleum Hydrocarbons						
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	-	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	< 10
VOCs						
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-004313
Project / Site name: Dwygyfylchi

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
438492	TP1ES1	None Supplied	0.1	Brown loam and clay with gravel and vegetation
438493	TP1D2	None Supplied	0.8	Brown clay and sand with gravel
438494	TP2D1	None Supplied	0.7	Brown clay and sand with gravel and vegetation
438495	TP3ES1	None Supplied	0.2	Brown loam and clay with gravel and vegetation
438496	TP3D1	None Supplied	0.6	Brown loam and clay with gravel and vegetation
438497	TP5ES1	None Supplied	0.2	Brown loam and clay with gravel and vegetation
438498	TP6ES1	None Supplied	0.1	Brown loam and clay with gravel and vegetation
438499	TP6D1	None Supplied	0.8	Brown clay and loam with gravel and vegetation
438500	TP7ES1	None Supplied	0.2	Brown loam and clay with gravel and vegetation
438501	TP7D1	None Supplied	0.6	Brown loam and clay with gravel and vegetation
438502	TP8ES1	None Supplied	0.1	Brown loam and clay with gravel and vegetation

Analytical Report Number : 25-004313
Project / Site name: Dwygyfylchi

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

APPENDIX 7

Geotechnical Laboratory Testing Results

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

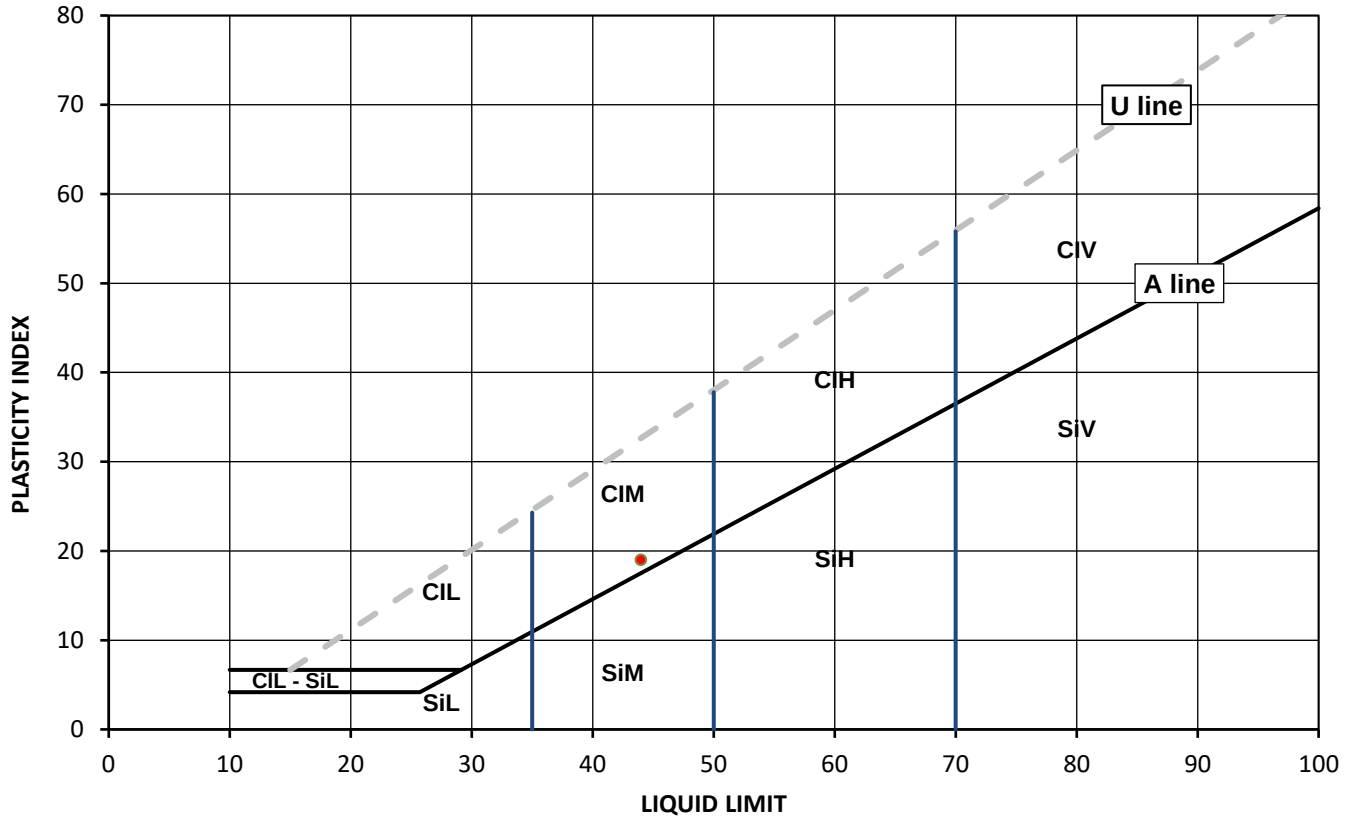
Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438680	Depth Top [m]:	0.60
Hole No.:	TP1 D1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >0.425 mm;		
Cone Type:	80g/30deg		

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
14.0	44	1.000	25	19	-0.58	1.58	49



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 360.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

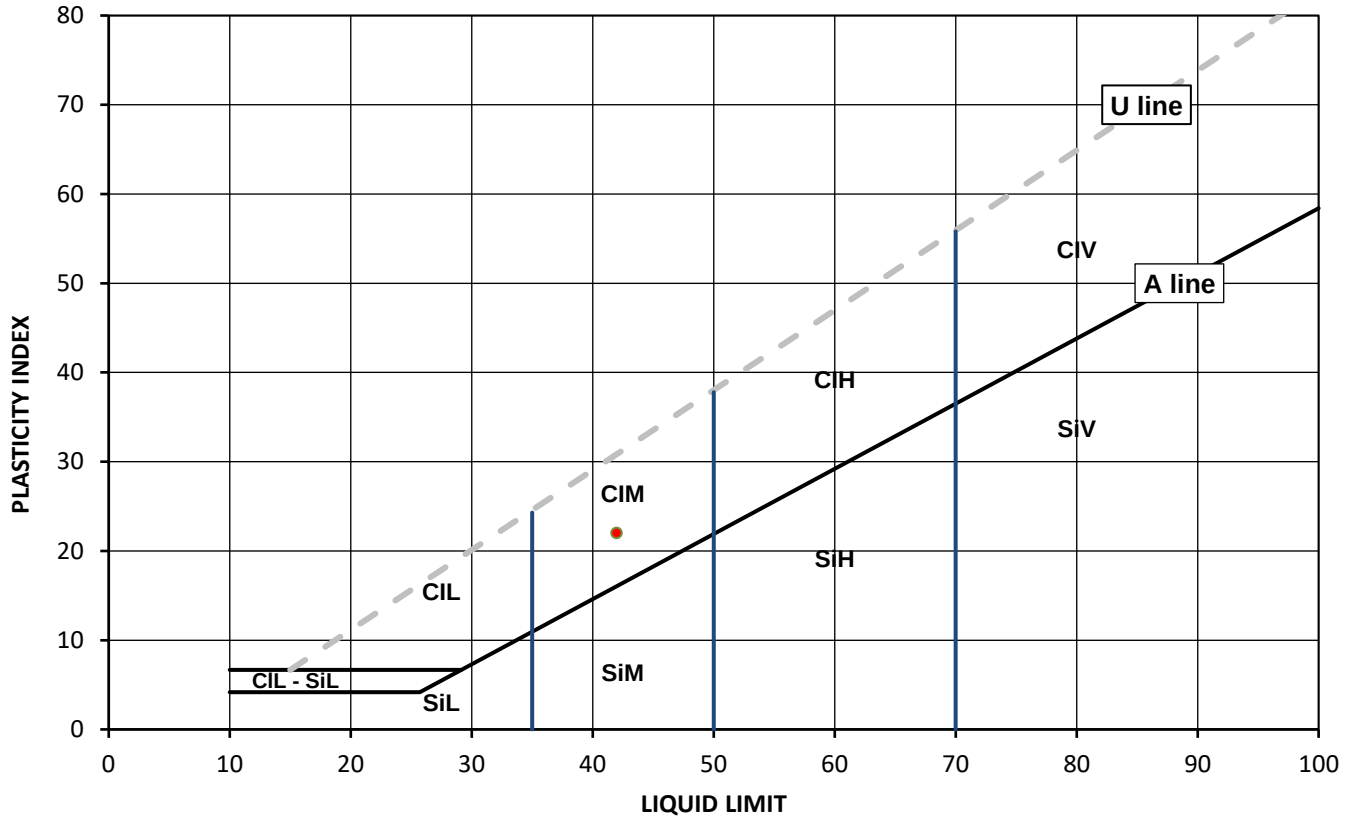
Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438682	Depth Top [m]:	1.20
Hole No.:	TP6 D2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >0.425 mm;		
Cone Type:	80g/30deg		

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
19.8	42	1.000	20	22	0.00	1.00	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 360.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

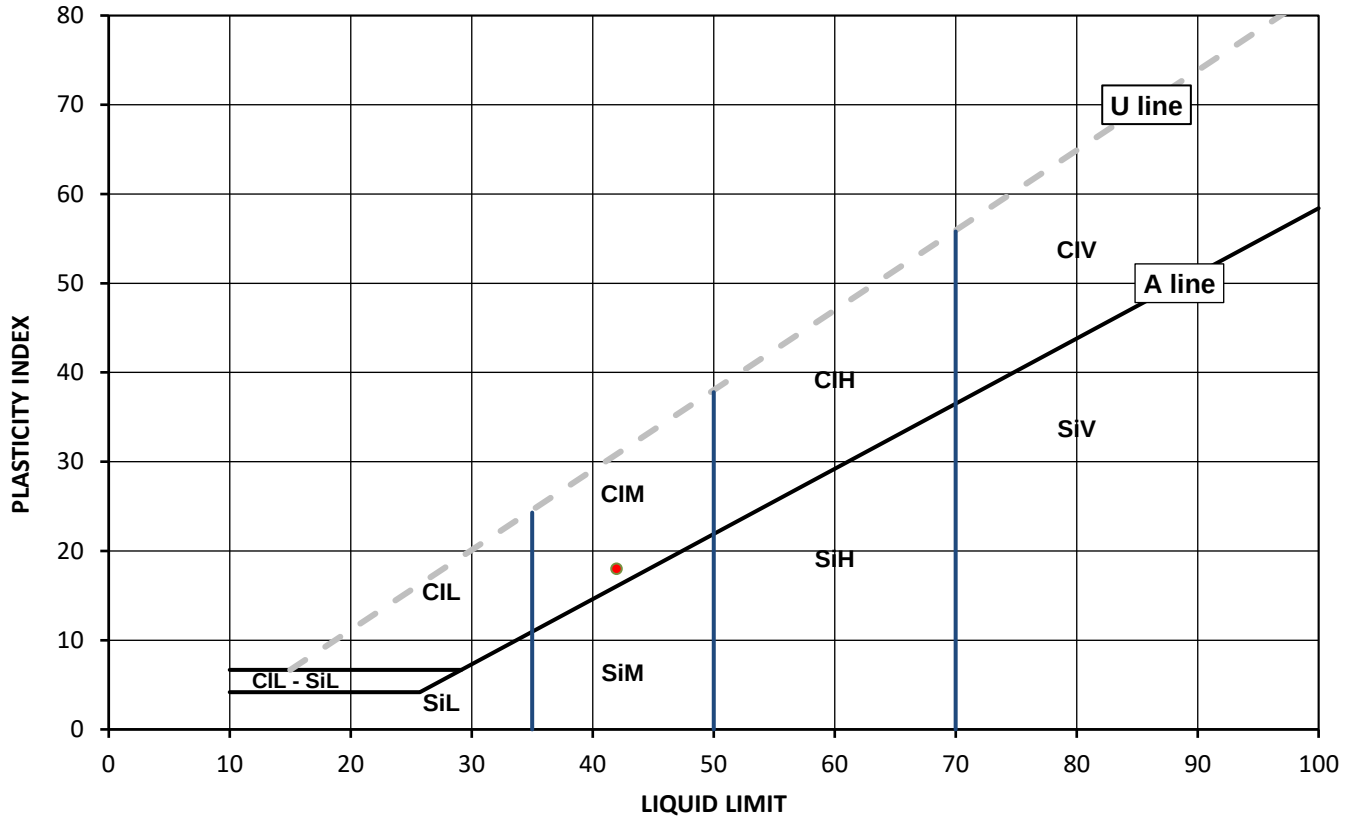
Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438683	Depth Top [m]:	0.70
Hole No.:	TP7 D2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brownish grey gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >0.425 mm;		
Cone Type:	80g/30deg		

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
13.1	42	0.984	24	18	-0.61	1.61	51



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 360.13

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Tested in Accordance with:

BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6. Correlation Factor by Clayton C.R.I and Jukes A.W (1978). W by BS EN ISO 17892-1:2014+A1:2022.

4041

Client: Caulmert Ltd

Client Address: Glyndwr Innovations Ltd, St Asaph Business Park,
St Asaph, LL17 0JD

Contact: Cezary Salwa

Site Address: Dwygyfylchi

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 6005
Job Number: 25-004359-1
Date Sampled: Not Given
Date Received: 31/01/2025
Date Tested: 05/02/2025
Sampled By: Client - CS

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit							Density		
		Reference	Depth Top m	Depth Base m	Type			%	% Passing 425um %	WL* %	Correlation Factor	Wp %	Ip %	Cone type	Sample Preparation	bulk Mg/m3	dry Mg/m3	PD Mg/m3
438680	TP1 D1	Not Given	0.60	Not Given	B	Yellowish brown gravelly slightly sandy CLAY	Atterberg 1 Point	14.0	49	44	1.000	25	19	80g/30 deg	WR			
438682	TP6 D2	Not Given	1.20	Not Given	B	Brown slightly gravelly slightly sandy CLAY	Atterberg 1 Point	19.8	88	42	1.000	20	22	80g/30 deg	WR			
438683	TP7 D2	Not Given	0.70	Not Given	B	Brownish grey gravelly slightly sandy CLAY	Atterberg 1 Point	13.1	51	42	0.984	24	18	80g/30 deg	WR			

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0.425mm removed by hand, WR - Tested after washing to remove >425mm; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025 **GF 361.15**

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Caulmert Ltd

Client Address: Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD

Contact: Cezary Salwa

Site Address: Dwygyfylchi

Client Reference: 6005
Job Number: 25-004359-1
Date Sampled: Not Given
Date Received: 31/01/2025
Date Tested: 05/02/2025
Sampled By: Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top m	Depth Base m	Type			%											
438680	TP1 D1	Not Given	0.60	Not Given	B	Yellowish brown gravelly slightly sandy CLAY		14.0											
438682	TP6 D2	Not Given	1.20	Not Given	B	Brown slightly gravelly slightly sandy CLAY		19.8											
438683	TP7 D2	Not Given	0.70	Not Given	B	Brownish grey gravelly slightly sandy CLAY		13.1											

Comments:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

4041

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

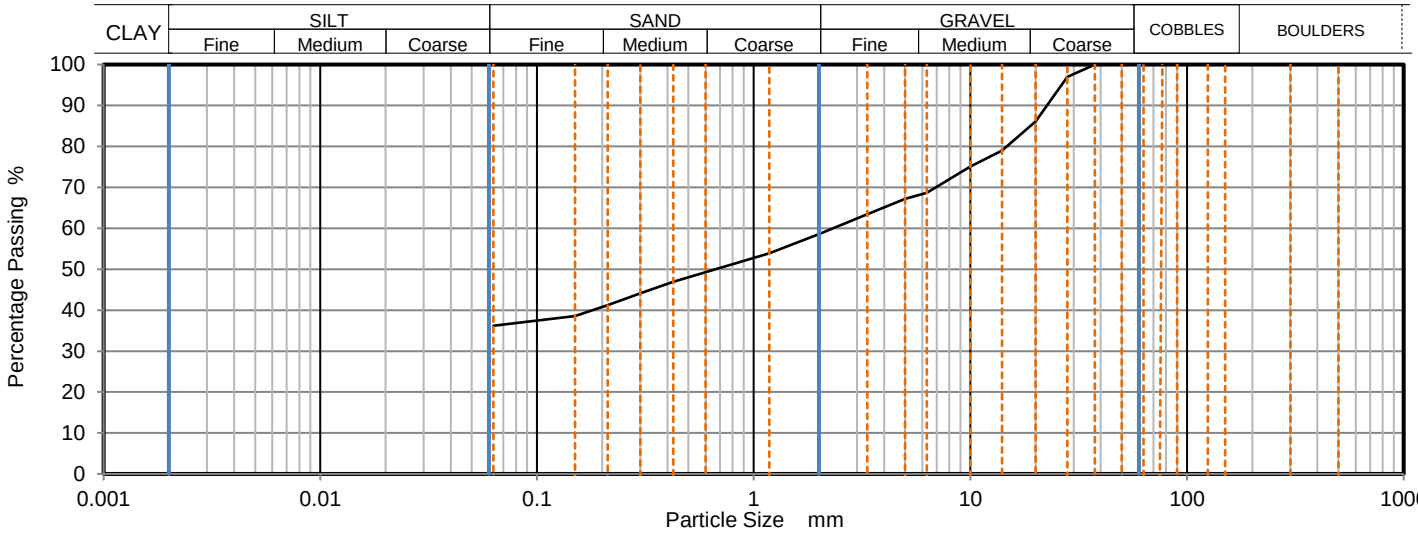
Environmental Science

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438680	Depth Top [m]:	0.60
Hole No.:	TP1 D1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown gravelly slightly sandy CLAY		
Sample Preparation:	Sample was whole tested, oven dried at 108.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	86		
14	79		
10	75		
6.3	69		
5	67		
3.35	63		
2	59		
1.18	54		
0.6	49		
0.425	47		
0.3	44		
0.212	41		
0.15	39		
0.063	36		

Sample Proportions	% dry mass
Very coarse	0
Gravel	42
Sand	22
Fines <0.063 mm	36

Grading Analysis		
D100	mm	37.5
D60	mm	2.33
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 366.12

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

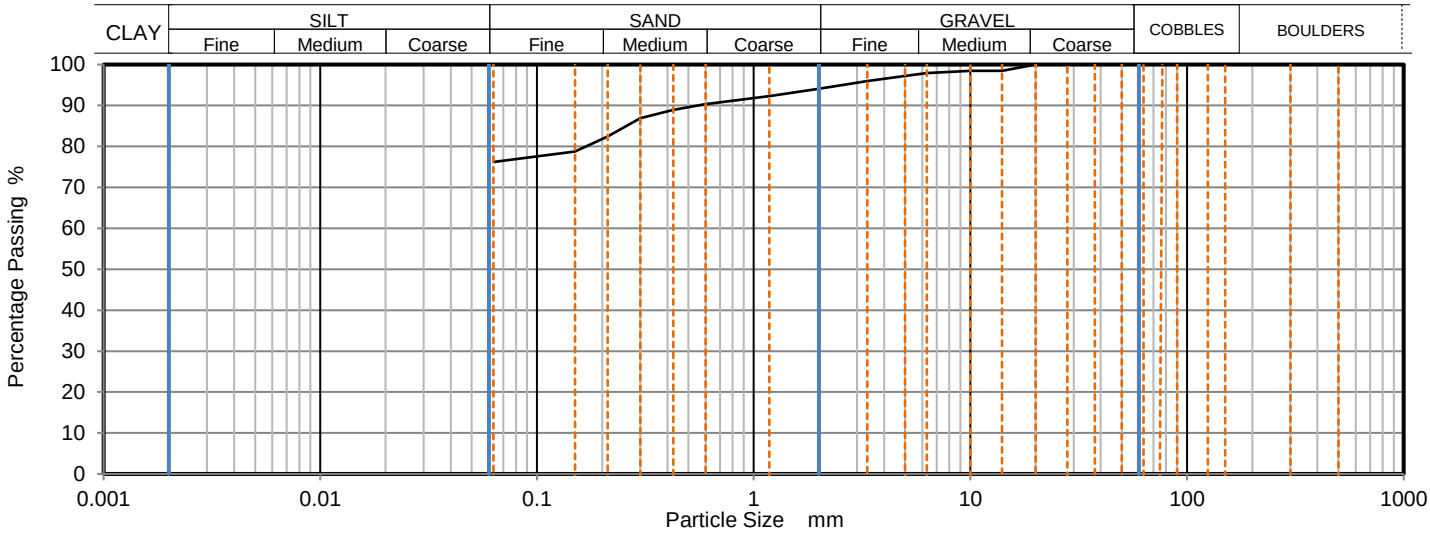
4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438682	Depth Top [m]:	1.20
Hole No.:	TP6 D2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Sample was quartered, oven dried at 108.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	97		
3.35	96		
2	94		
1.18	92		
0.6	90		
0.425	89		
0.3	87		
0.212	82		
0.15	79		
0.063	76		

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	18
Fines <0.063 mm	76

Grading Analysis		
D100	mm	20
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 366.12

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

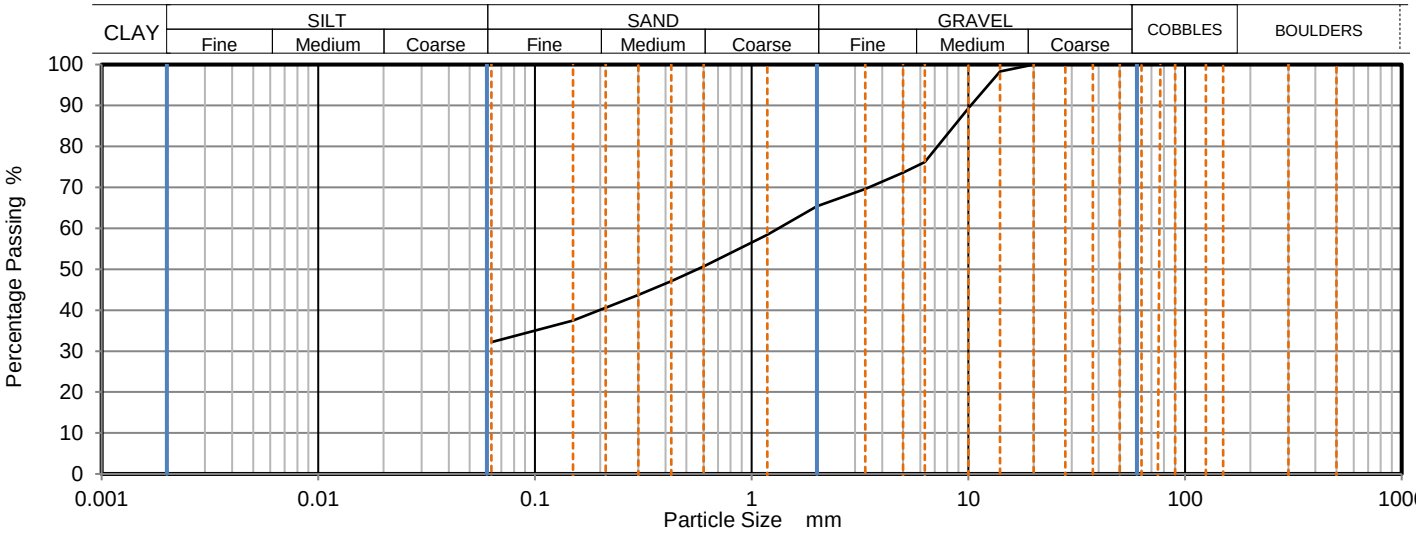
4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438683	Depth Top [m]:	0.70
Hole No.:	TP7 D2	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brownish grey gravelly slightly sandy CLAY		
Sample Preparation:	Sample was quartered, oven dried at 108.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	89		
6.3	76		
5	74		
3.35	70		
2	65		
1.18	58		
0.6	51		
0.425	47		
0.3	44		
0.212	41		
0.15	38		
0.063	32		

Sample Proportions	% dry mass
Very coarse	0
Gravel	35
Sand	33
Fines <0.063 mm	32

Grading Analysis		
D100	mm	20
D60	mm	1.33
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 366.12

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

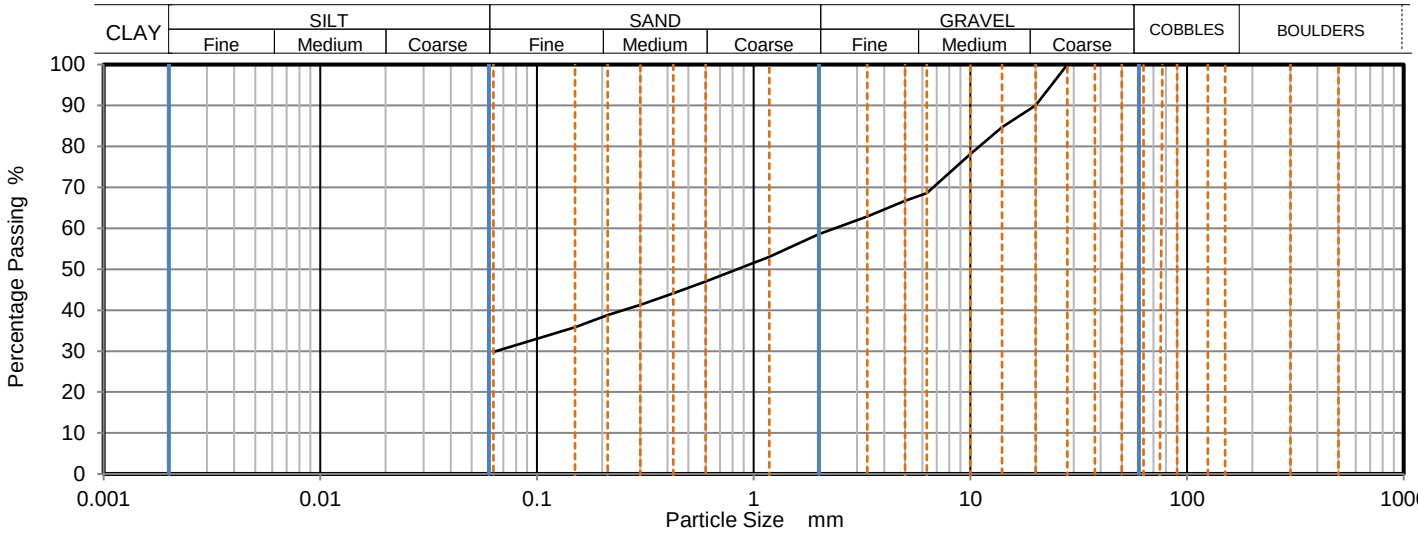
4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438685	Depth Top [m]:	1.00
Hole No.:	SA1 D1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown gravelly slightly sandy CLAY		
Sample Preparation:	Sample was whole tested, oven dried at 108.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	90		
14	85		
10	78		
6.3	69		
5	67		
3.35	63		
2	59		
1.18	53		
0.6	47		
0.425	44		
0.3	41		
0.212	39		
0.15	36		
0.063	30		

Sample Proportions	% dry mass
Very coarse	0
Gravel	41
Sand	29
Fines <0.063 mm	30

Grading Analysis		
D100	mm	28
D60	mm	2.37
D30	mm	0.0645
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 366.12

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

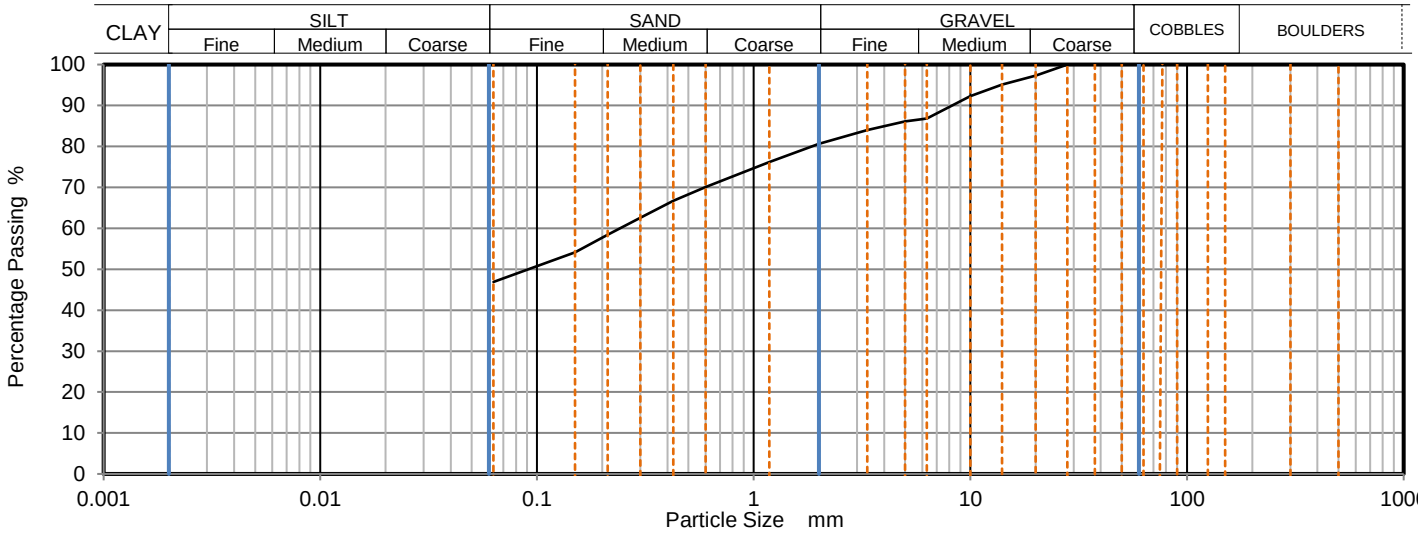
4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	05/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	438686	Depth Top [m]:	1.00
Hole No.:	SA2 D1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Sample was quartered, oven dried at 108.6 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	95		
10	92		
6.3	87		
5	86		
3.35	84		
2	81		
1.18	76		
0.6	70		
0.425	67		
0.3	63		
0.212	58		
0.15	54		
0.063	47		

Sample Proportions	% dry mass
Very coarse	0
Gravel	19
Sand	34
Fines <0.063 mm	47

Grading Analysis		
D100	mm	28
D60	mm	0.242
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 366.12

TEST CERTIFICATE

DETERMINATION OF THE CALIFORNIA BEARING RATIO (CBR)

Tested in Accordance with: BS 1377-2:2022 Cl. 15

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	07/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

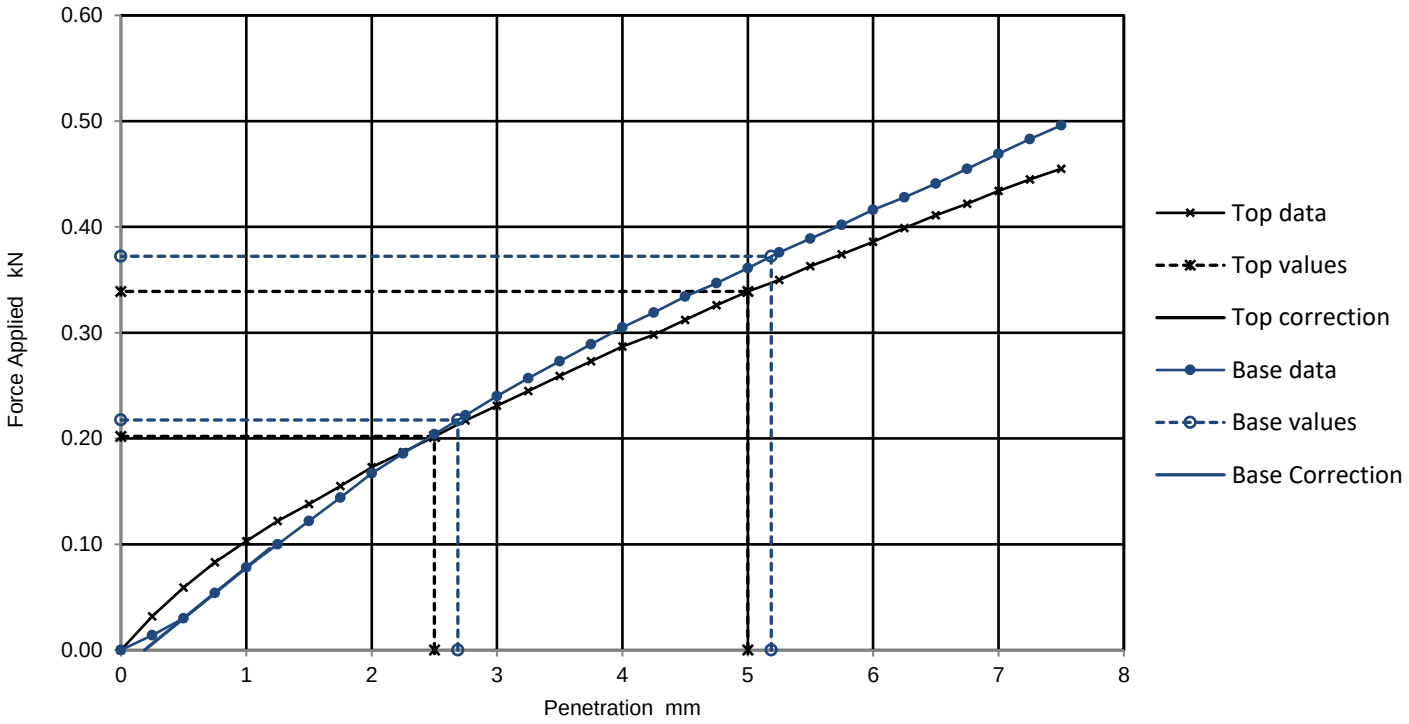
Test Results:

Laboratory Reference:	438681	Depth Top [m]:	0.80
Hole No.:	TP4 B1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly sandy gravelly CLAY		

Specimen Preparation:

Condition	Remoulded			Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	days
				Time to surface	days
				Amount of swell recorded	mm
Material retained on 20mm sieve removed		5	%	Dry density after soaking	Mg/m3
Initial Specimen details	Bulk density	2.06	Mg/m3	Surcharge applied	8 kg
	Dry density	1.72	Mg/m3		4.8 kPa
	Water content	20	%		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	1.5	1.7	1.7	1.8	20
BASE	Yes	1.6	1.9	1.9		19

Remarks:

Test/ Specimen specific remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 593.1

TEST CERTIFICATE

DETERMINATION OF THE CALIFORNIA BEARING RATIO (CBR)

Tested in Accordance with: BS 1377-2:2022 Cl. 15

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client:	Caulmert Ltd	Client Reference:	6005
Client Address:	Glyndwr Innovations Ltd, St Asaph Business Park, St Asaph, LL17 0JD	Job Number:	25-004359-1
		Date Sampled:	Not Given
		Date Received:	31/01/2025
Contact:	Cezary Salwa	Date Tested:	07/02/2025
Site Address:	Dwygyfylchi	Sampled By:	Client - CS

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

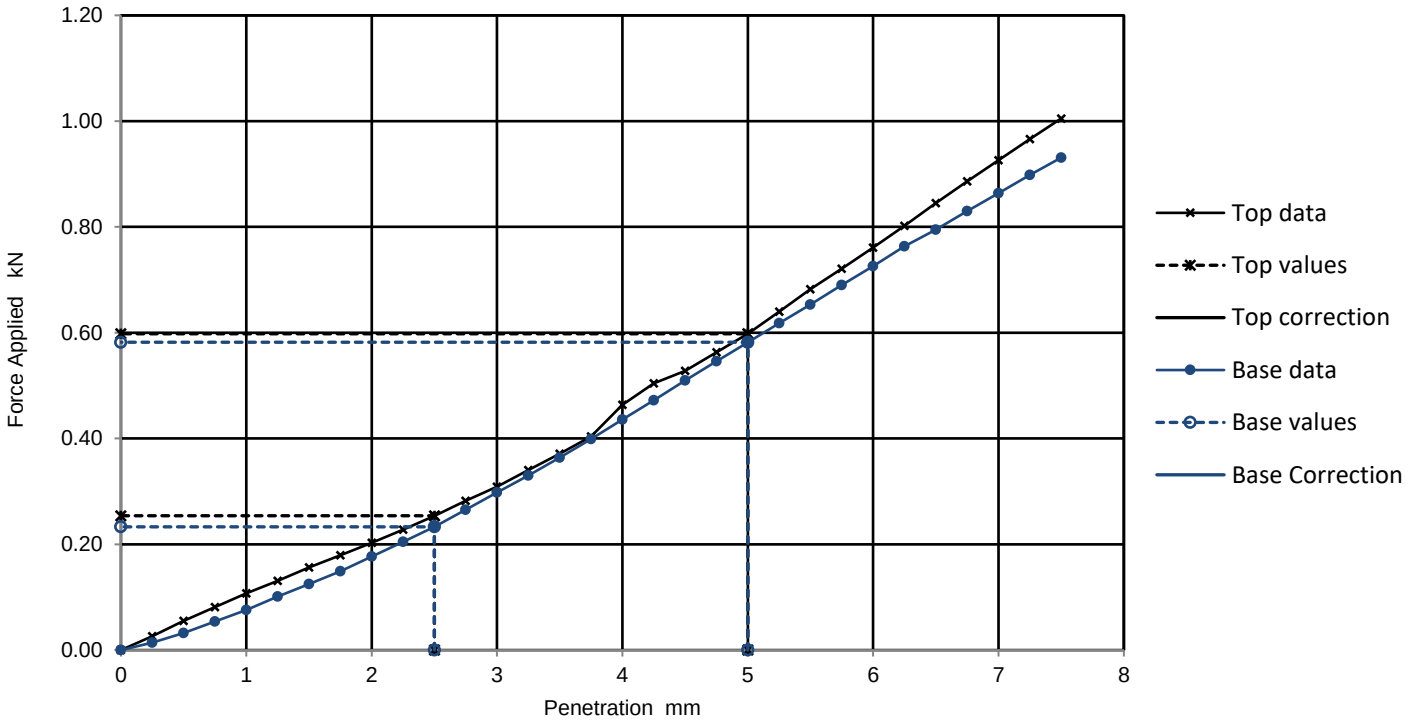
Laboratory Reference:	438684	Depth Top [m]:	0.80
Hole No.:	TP8 B1	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown sandy gravelly CLAY		

Specimen Preparation:

Condition	Remoulded	Soaking details	Not soaked
Details	Recompacted with specified standard effort using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	11 %	Dry density after soaking	Mg/m3

Initial Specimen details	Bulk density	2.22	Mg/m3	Surcharge applied	8 kg
	Dry density	1.97	Mg/m3		4.9 kPa
	Water content	13	%		

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Water Content %
		2.5mm	5mm	Highest	Average	
TOP	No	1.9	3	3	3	13
BASE	No	1.8	2.9	2.9		13

Remarks:

Test/ Specimen specific remarks:

Signed: Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 19/02/2025

GF 593.1

APPENDIX 8

Envirocheck Report and Historical Maps

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
366982679_1_1

Customer Reference:
6005

National Grid Reference:
273150, 377360

Slice:
A

Site Area (Ha):
0.5

Search Buffer (m):
1000

Site Details:

Land Off Ysgoborwen Road
Dwygyfylchi
Penmaenmawr
LL34 6PU

Client Details:

Mr A Jones
Caulmert Ltd
Unit 14
InTec
Parc Menai
Bangor
Gwynedd
LL57 4FG

Prepared For:

Cartrefi Conwy Ltd

Envirocheck®
LANDMARK INFORMATION GROUP®

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	24
Hazardous Substances	-
Geological	25
Industrial Land Use	31
Sensitive Land Use	34
Data Currency	35
Data Suppliers	40
Useful Contacts	41

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.

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Stantec Copyright Notice

Radon Potential dataset Copyright Notice

Natural Resources Wales Copyright Notice

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 3				50
Prosecutions					
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	pg 15			1	
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 15		Yes		
Pollution Incidents to Controlled Waters	pg 15				2
Historical Prosecutions					
Registered Radioactive Substances					
Substantiated Pollution Incident Register	pg 16				1
Water Abstractions	pg 16				(*5)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 17	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 17	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 17	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 17		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 17		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 17		3	3	47
Water Framework Directive - Catchment					
Water Framework Directive - Groundwater	pg 23	Yes			
Water Framework Directive - Surface Waters	pg 23		Yes		

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 24				1
Historical Landfill Sites	pg 24				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 24	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 24				1
Potentially Infilled Land (Non-Water)	pg 24				6
Potentially Infilled Land (Water)	pg 24			2	
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					
Planning Hazardous Substance Enforcements					

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Summary

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 25	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 25	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 28				6
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		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 29	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 29	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 29	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 29	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 30	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 31		1	3	
Fuel Station Entries	pg 31			1	
Points of Interest - Commercial Services					
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 31				8
Points of Interest - Public Infrastructure	pg 32			3	11
Points of Interest - Recreational and Environmental	pg 33		2	1	
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 34				1
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	pg 34			1	
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 34				1
Special Areas of Conservation	pg 34			1	
Special Protection Areas	pg 34			2	
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	A13NW (W)	0	1	273150 377363
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	0	1	273100 377363
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	0	1	273151 377363
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	0	1	273150 377400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	3	1	273100 377400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (N)	5	1	273151 377400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	40	1	273100 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	45	1	273150 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	48	1	273151 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	74	1	273200 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SW (SW)	90	1	273050 377300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	90	1	273000 377363
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	116	1	273200 377500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	143	1	273250 377500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	147	1	272950 377350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (W)	169	1	272950 377300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	185	1	273250 377550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	196	1	273000 377200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	201	1	272950 377250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	245	1	273350 377550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (S)	254	1	273050 377100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	332	1	273450 377100

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 (SE)	339	1	273400 377050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	358	1	273550 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (SE)	359	1	273350 377000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	365	1	273000 377000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	369	1	273450 377050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	378	1	273550 377500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	381	1	273400 377000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	387	1	272950 377000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (NE)	402	1	273550 377550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	408	1	273450 377000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	410	1	273550 377100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (SW)	431	1	272950 376950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	451	1	273350 376900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	452	1	273600 377100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	454	1	273650 377450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SW)	456	1	272900 376950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	469	1	273650 377500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	488	1	273700 377350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	488	1	273700 377363

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Penamenmawr Dwygyfylchi - Sso Authority: Natural Resources Wales Catchment Area: Afon Gyrach Reference: CG0099501 Permit Version: 1 Effective Date: 15th April 1980 Issued Date: 15th April 1980 Revocation Date: 19th July 2001 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Gyrach **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	545	2	273520 377800
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0099501 Permit Version: 2 Effective Date: 20th July 2001 Issued Date: 19th July 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gyrach **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0099501 Permit Version: Not Supplied Effective Date: 20th July 2001 Issued Date: 19th July 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gyrach **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0099501 Permit Version: 2 Effective Date: 20th July 2001 Issued Date: 19th July 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gyrach **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0099501 Permit Version: 2 Effective Date: 20th July 2001 Issued Date: 19th July 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Gyrach **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works - Water Company Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0393901 Permit Version: 1 Effective Date: 1st June 2001 Issued Date: 19th July 2001 Revocation Date: 31st October 2001 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works - Water Company Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0393801 Permit Version: 1 Effective Date: 19th July 2001 Issued Date: 19th July 2001 Revocation Date: 31st October 2001 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	551	2	273530 377800
2	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Dwygyfylchi Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: CG0141401 Permit Version: 2 Effective Date: 23rd February 1993 Issued Date: 23rd November 1992 Revocation Date: 30th March 2001 Discharge Type: Saline Water - Non Designated Bathing Beaches Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A18SE (N)	575	2	273240 377970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Dwygyfylchi Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0141401 Permit Version: 1 Effective Date: 24th September 1987 Issued Date: 24th September 1987 Revocation Date: 22nd February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A18SE (N)	575	2	273240 377970
3	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132301 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	591	2	272649 377001
3	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132302 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	595	2	272629 377018
4	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132304 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	599	2	272592 377061

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132305 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	599	2	272586 377070
4	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132306 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	599	2	272586 377071
4	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132303 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No4 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	600	2	272599 377050
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0393801 Permit Version: Not Supplied Effective Date: 1st November 2001 Issued Date: 31st October 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	710	2	273220 378110

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0393901 Permit Version: Not Supplied Effective Date: 1st November 2001 Issued Date: 31st October 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	710	2	273220 378110
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0393801 Permit Version: 2 Effective Date: 1st November 2001 Issued Date: 31st October 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	710	2	273220 378110
5	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewage Disposal Works Location: Penmaenmawr Wwtw Penmaenmawr, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0393901 Permit Version: 2 Effective Date: 1st November 2001 Issued Date: 31st October 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Of Conwy Bay **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	710	2	273220 378110
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132203 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 26th February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	781	2	272461 376931

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132206 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	781	2	272449 376948
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132202 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 26th February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	782	2	272461 376930
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132204 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	782	2	272454 376939
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132205 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	782	2	272449 376947

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132207 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	782	2	272448 376947
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132208 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	782	2	272448 376948
6	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132201 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	785	2	272461 376925
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132217 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	784	2	272412 377001

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132218 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	784	2	272412 377000
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132212 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	787	2	272422 376978
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132213 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	787	2	272428 376968
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132209 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	788	2	272421 376977

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132210 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	788	2	272421 376978
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132211 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	788	2	272422 376977
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132214 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	788	2	272428 376967
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132215 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	788	2	272427 376968

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132216 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 8th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No30 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	789	2	272427 376967
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Cso And Eo, The Promenade (Opposite Side Of A55 To The Railway Station), Penmaenmawr, Ll34 6nj Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0148301 Permit Version: Not Supplied Effective Date: 26th August 2022 Issued Date: 26th August 2022 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Off Penmaenmawr **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	872	2	272240 377198
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Cso And Eo, The Promenade (Opposite Side Of A55 To The Railway Station), Penmaenmawr, Ll34 6nj Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0148301 Permit Version: 4 Effective Date: 26th August 2022 Issued Date: 26th August 2022 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Off Penmaenmawr **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	872	2	272240 377198
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Cso And Eo, The Promenade (Opposite Side Of A55 To The Railway Station), Penmaenmawr, Ll34 6nj Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0148301 Permit Version: Not Supplied Effective Date: 26th August 2022 Issued Date: 26th August 2022 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters Off Penmaenmawr **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	872	2	272240 377198

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Ps, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0148301 Permit Version: 3 Effective Date: 22nd March 2002 Issued Date: 21st March 2002 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	874	2	272240 377190
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Ps, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0148301 Permit Version: 3 Effective Date: 22nd March 2002 Issued Date: 21st March 2002 Revocation Date: Not Supplied Discharge Type: Miscellaneous Discharges - Emergency Discharges Discharge Environment: Controlled Sea Receiving Water: Coastal Waters **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	874	2	272240 377190
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Ps, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0148301 Permit Version: 3 Effective Date: 22nd March 2002 Issued Date: 21st March 2002 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Controlled Sea Receiving Water: Coastal Waters **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	874	2	272240 377190
8	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Staions Location: Penmaenmawr Promenade Ps, Gwynedd Authority: Natural Resources Wales Catchment Area: CONWY BAY Reference: Cg0148301 Permit Version: 3 Effective Date: 22nd March 2002 Issued Date: 21st March 2002 Revocation Date: Not Supplied Discharge Type: Miscellaneous Discharges - Emergency Discharges Discharge Environment: Controlled Sea Receiving Water: Coastal Waters **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A12SW (W)	874	2	272240 377190

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132101 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 26th February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No29 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	925	2	272310 376897
9	**Discharge Consents** Operator: Welsh Office - Highways Group Property Type: Undefined Or Other Location: Penmaenmawr A55 Stage 3 Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0132102 Permit Version: 1 Effective Date: 21st January 1987 Issued Date: 21st January 1987 Revocation Date: 26th February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Diverted Culvert No29 A55 **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	925	2	272310 376898
10	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: CG0141501 Permit Version: 2 Effective Date: 16th March 1994 Issued Date: 16th December 1993 Revocation Date: 12th March 2002 Discharge Type: Sewerage System Discharge Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A11SE (W)	998	2	272130 377120
10	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: CG0148301 Permit Version: 2 Effective Date: 23rd February 1993 Issued Date: 23rd November 1992 Revocation Date: 21st March 2002 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A11SE (W)	998	2	272130 377120

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0141501 Permit Version: 1 Effective Date: 24th September 1987 Issued Date: 24th September 1987 Revocation Date: 15th March 1994 Discharge Type: Sewerage System Discharge Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A11SE (W)	998	2	272130 377120
10	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Sewers - Water Company Location: Penmaenmawr, Conwy Authority: Natural Resources Wales Catchment Area: Boundary Of HA 65 & HA 66 Reference: Cg0148301 Permit Version: 1 Effective Date: 24th September 1987 Issued Date: 24th September 1987 Revocation Date: 22nd February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Coastal Waters **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A11SE (W)	998	2	272130 377120
11	**Local Authority Pollution Prevention and Controls** Name: Shell Orme View Location: Orme View, Ysgubor Wen Road, Dwygyfylchi, PENMAENMAWR, Gwynedd, LL34 6UN Authority: Conwy County Borough Council, Environmental Health Department Permit Reference: PVR 42 Dated: 22nd December 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	376	3	273459 377625
	Nearest Surface Water Feature	A13SW (W)	38	-	273076 377335
12	**Pollution Incidents to Controlled Waters** Property Type: Land Location: Stream, Golf Course Authority: Environment Agency, Welsh Region Pollutant: Miscellaneous - Vehicle Washings And De Waxing Note: Not Supplied Incident Date: 31st August 1994 Incident Reference: 20802 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	595	4	273790 377190
13	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Other Location: Iron Bridge, PENMAENMAWR Authority: Environment Agency, Welsh Region Pollutant: Farm Effluent/Slurry Note: Not Supplied Incident Date: 19th May 1995 Incident Reference: 23988 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	A19SW (NE)	615	4	273500 377900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Substantiated Pollution Incident Register** Authority: Natural Resources Wales Incident Date: 10th April 2008 Incident Reference: 577777 Water Impact: Category 4 - No Impact Air Impact: Category 4 - No Impact Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Inert : Other	A14NW (NE)	512	2	273583 377688
	Water Abstractions Operator: Mr J John Baxter Licence Number: 23/65/19/0026 Permit Version: 1 Location: Tributary Of Afon Gyrach Authority: Environment Agency, Welsh Region Abstraction: Private Non-Industrial Amenity: Lake And Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Ponds At Glyn Uchaf, Dwygyfylchi Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (SE)	1249	4	274119 376473
	Water Abstractions Operator: Mr H Jones Licence Number: 23/65/19/0027 Permit Version: 1 Location: Un-Named Stream Near Plas Uchaf Farm, Penmaenmawr Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Craiglwyd Fishery Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 15th December 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2SE (S)	1696	4	272620 375720
	Water Abstractions Operator: Mr H Jones Licence Number: 23/65/19/0027 Permit Version: 1 Location: Un-Named Stream Near Plas Uchaf Farm Authority: Environment Agency, Welsh Region Abstraction: Private Non-Industrial Amenity: Lake And Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Craig Lwyd Lodge Fishery, Penmaenmawr Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 15th December 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A2SE (S)	1696	4	272620 375720
	Water Abstractions Operator: Huw Jones Licence Number: Wa/065/0019/0018 Permit Version: Not Supplied Location: Cwm Graiglwyd, Graiglwyd Fly Fishing & Fisheries, Graiglwyd Road, Penmaenmawr, Ll34 6er Authority: Natural Resources Wales Abstraction: Aquaculture: Transfer between sources Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): 0 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 10m	A2SE (S)	1696	2	272620 375720

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr H Jones Licence Number: 23/65/19/0023 Permit Version: 100 Location: Stream Near Plas Uchaf Farm,Penmaenmawr Authority: Environment Agency, Welsh Region Abstraction: Aquaculture: Fish Farm/Cress Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Stream Near Plas Uchaf Farm;Penmaenmawr Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th September 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1753	4	272650 375650
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: >10m Superficial Recharge: Low	A13NE (NE)	0	2	273151 377363
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A13NE (NE)	0	2	273151 377363
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (NE)	0	2	273151 377363
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (NW)	68	2	273080 377470
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (NW)	69	2	273080 377470
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 72.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A13SW (W)	38	5	273076 377335
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A13SW (SW)	49	5	273106 377302

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A13SW (SW)	60	5	273088 377305
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 30.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 2	A14SW (SE)	461	5	273573 377044
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 2	A9NW (SE)	476	5	273570 377017
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 2	A9NW (SE)	480	5	273572 377014
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 425.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	504	5	272743 377022
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 104.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A19SW (NE)	545	5	273506 377811
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.6 Watercourse Level: Underground Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A19SW (NE)	552	5	273550 377784
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 561.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A19SW (NE)	556	5	273576 377764
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 78.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SW (E)	591	5	273803 377311

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 84.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A14SW (E)	592	5	273804 377313
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A12SE (SW)	601	5	272582 377073
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A12SE (SW)	606	5	272566 377090
29	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A12SE (SW)	606	5	272568 377087
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A12SE (SW)	607	5	272564 377091
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 87.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SW (E)	615	5	273820 377236
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 48.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	616	5	272813 376816
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 91.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	627	5	272662 376930
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 112.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	634	5	272674 376906

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SW (E)	649	5	273823 377113
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SW (E)	649	5	273823 377113
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 99.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	650	5	273856 377246
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	651	5	273859 377257
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 51.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	662	5	272794 376773
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 31.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	695	5	273861 377082
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 292.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	697	5	272809 376724
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	697	5	272809 376724
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.0 Watercourse Level: Underground Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	704	5	273901 377185

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 395.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Gyrach Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	707	5	273904 377183
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	718	5	272590 376873
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	723	5	272586 376870
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A8SW (SW)	725	5	272824 376685
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	726	5	273888 377065
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 17.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SE (E)	726	5	273888 377065
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	730	5	273830 376942
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 29.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SE (SE)	733	5	273888 377047
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A14SE (SE)	733	5	273889 377050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 29.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	737	5	273879 377017
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	737	5	273880 377019
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	741	5	273852 376958
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	742	5	273854 376959
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	743	5	273871 376988
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	744	5	273870 376985
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	744	5	272569 376857
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	744	5	272569 376857
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 63.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NE (SW)	744	5	272579 376845

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 14.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	746	5	273846 376938
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	748	5	273865 376967
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	753	5	273860 376948
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 47.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	754	5	273859 376944
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A9NE (SE)	754	5	273860 376945
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 31.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Ogwen Ddu Primacy: 1	A7NW (SW)	988	5	272268 376847
	Water Framework Directive - Groundwater Waterbody Name: Llyn and Eryri Waterbody ID: GB41002G204600 URL Address: Not Available Overall Rating: Poor Chemical Rating: Poor Quantitative Measure: Good Year: 2023	A13NE (NE)	0	2	273151 377363
68	**Water Framework Directive - Surface Waters** Class Code: Coastal Waterbody Name: Conwy Bay Waterbody ID: GB671010400000 URL Address: Not Supplied Overall Rating: Moderate Chemical Rating: Moderate Classification Year: 2023	A13NW (NW)	110	2	273047 377499

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**BGS Recorded Landfill Sites** Site Name: Bion Wylfa Location: PENMAENMAWR, Caernarvon Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Derived	A7NE (SW)	503	-	272765 376999
70	**Historical Landfill Sites** Licence Holder: Penmaenmawr Urban District Council Location: Penmaenmawr, Conwy Name: Football Ground at Pen-y-Cae Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14186 First Input Date: 31st December 1949 Last Input Date: 31st December 1969 Specified Waste Type: Deposited Waste included Inert, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6905/0010 BGS Ref: Not Supplied Other Ref: CL5E2	A7NE (SW)	616	2	272676 376929
	Local Authority Landfill Coverage Name: Conwy County Borough Council - Has supplied landfill data		0	3	273151 377363
71	**Local Authority Recorded Landfill Sites** Location: Penmaenmawr, Conwy Road, Penmaenmawr, Conwy Reference: Not Supplied Authority: Conwy County Borough Council, Environmental Health Department **Last Reported Status: Closed** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A7NE (SW)	506	3	272772 376989
72	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A9NW (SE)	610	-	273501 376795
73	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A9NW (SE)	646	-	273554 376783
74	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A9NW (SE)	714	-	273603 376734
75	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A19SW (NE)	750	-	273690 377924
76	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A9SW (SE)	869	-	273619 376563
77	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8SW (S)	989	-	272984 376352
78	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13NE (NE)	350	-	273418 377631
79	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1964	A13NE (NE)	373	-	273455 377626

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Unnamed Extrusive Rocks, Ordovician	A13NE (NE)	0	1	273151 377363
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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	A13NE (NE)	0	1	273151 377363
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 60 - 120 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	A13NW (NW)	99	1	273043 377484
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: no data Cadmium Concentration: <1.8 mg/kg Chromium Concentration: no data Lead Concentration: <100 mg/kg Nickel Concentration: no data	A13NW (NW)	329	1	272877 377646
	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	A8NW (S)	432	1	272981 376935
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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	A12SE (SW)	481	1	272671 377158
	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	A12SE (W)	498	1	272627 377209

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: 25 - 35 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	A8NE (S)	507	1	273170 376813
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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	A8SW (S)	677	1	272961 376680
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 60 - 120 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)	699	1	273500 378000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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)	732	1	273561 378000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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	A9NW (SE)	736	1	273631 376726
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 60 - 120 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	A7NW (SW)	774	1	272420 377003

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: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SW (W)	777	1	272357 377130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 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	A7NW (SW)	815	1	272399 376962
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 60 - 120 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	A12SW (W)	863	1	272258 377166
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: no data Cadmium Concentration: <1.8 mg/kg Chromium Concentration: no data Lead Concentration: 100 - 200 mg/kg Nickel Concentration: no data	A19NW (NE)	873	1	273500 378197
	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	A7SE (SW)	963	1	272700 376481
	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	A15SW (E)	963	1	274175 377318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	**BGS Recorded Mineral Sites** Site Name: Cae-Main Gravel Pit Location: Capelulo, Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 177960 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Head Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A8NE (S)	560	1	273223 376761
81	**BGS Recorded Mineral Sites** Site Name: Tai-Bach Location: Dwygyfylchi, Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 177947 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Conwy Rhyolite Formation Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	608	1	273507 376800
81	**BGS Recorded Mineral Sites** Site Name: Caerlyr Lodge Location: Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 177956 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Conwy Rhyolite Formation Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	640	1	273554 376791
82	**BGS Recorded Mineral Sites** Site Name: Pant-Y-Ffynnon Gravel Pit Location: Dwygyfylchi, Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 177939 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary, Devensian Geology: Till, Devensian Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	705	1	273606 376747
83	**BGS Recorded Mineral Sites** Site Name: Brickfield Cottage Beickfield Location: Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 245889 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary, Devensian Geology: Till, Devensian Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	850	1	273750 378004
84	**BGS Recorded Mineral Sites** Site Name: Pant-Y-Ffynnon Location: Dwygyfylchi, Conwy, Gwynedd Source: British Geological Survey, National Geoscience Information Service Reference: 177940 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Conwy Rhyolite Formation Commodity: Igneous and Metamorphic Rock Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	866	1	273623 376569

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	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	A13NE (NE)	0	1	273151 377363
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	80	1	273060 377472
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	273092 377397
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	273140 377357
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	273147 377373
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	109	1	272991 377440
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	172	1	273033 377203
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	80	1	273060 377472
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	99	1	273043 377484
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	273151 377363
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	80	1	273060 377472
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	99	1	273043 377484
	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	A13NE (NE)	0	1	273151 377363

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	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	A13NE (NE)	0	1	273151 377363

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
85	**Contemporary Trade Directory Entries** Name: Asb Engineering Limited Location: 36, Gogarth Avenue, Dwygyfylchi, Penmaenmawr, Gwynedd, LL34 6PY Classification: Marine Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	218	-	273192 377102
86	**Contemporary Trade Directory Entries** Name: Gmec-Services Ltd Location: Flat Above, The Old Post Office, Treforris Road, Dwygyfylchi, Penmaenmawr, LL34 6UB Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	252	-	273450 377248
87	**Contemporary Trade Directory Entries** Name: Shell Mfg Orme View Location: Conway Road, Penmaenmawr, Gwynedd, LL34 6UN Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	376	-	273459 377625
87	**Contemporary Trade Directory Entries** Name: Shell (Uk) Ltd Location: Orme View Cottage, Conway Road, Penmaenmawr, Gwynedd, LL34 6UN Classification: Petrol Filling Stations - 24 Hour **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	376	-	273459 377625
88	**Fuel Station Entries** Name: Mfg Orme View Location: Conway Road , , Penmaenmawr, Conwy, LL34 6UN Brand: SHELL Premises Type: Service Area **Status: Open** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	376	-	273459 377625
89	**Points of Interest - Manufacturing and Production** Name: Sheep Wash Location: LL34 Category: Farming Class Code: Sheep Dips and Washes Positional Accuracy: Positioned to address or location	A8NW (SW)	548	6	272853 376871
90	**Points of Interest - Manufacturing and Production** Name: Trwyn-Yr-Wylfa Location: Trwyn yr Wylfa, Conway Old Road, Penmaenmawr, LL34 6SF Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A8NW (SW)	663	6	272828 376753
91	**Points of Interest - Manufacturing and Production** Name: Tank Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	676	6	273357 376666
92	**Points of Interest - Manufacturing and Production** Name: Tanks Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	812	6	273711 377988
92	**Points of Interest - Manufacturing and Production** Name: Tank Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19SW (NE)	819	6	273739 377973
92	**Points of Interest - Manufacturing and Production** Name: Tank Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19SW (NE)	820	6	273733 377980

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	**Points of Interest - Manufacturing and Production** Name: Tank Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19SW (NE)	822	6	273728 377987
92	**Points of Interest - Manufacturing and Production** Name: Tank Location: LL34 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	872	6	273773 378013
93	**Points of Interest - Public Infrastructure** Name: Shell Orme View Location: Orme View Cottage, Conway Road, Penmaenmawr, LL34 6UN Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (NE)	368	6	273464 377607
93	**Points of Interest - Public Infrastructure** Name: Shell Orme View Location: Conway Road, Penmaenmawr, Gwynedd, LL34 6UN Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (NE)	376	6	273459 377625
93	**Points of Interest - Public Infrastructure** Name: Shell Mfg Orme View Location: Conway Road, Penmaenmawr, LL34 6UN Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NE (NE)	377	6	273460 377626
94	**Points of Interest - Public Infrastructure** Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	539	6	273745 377415
94	**Points of Interest - Public Infrastructure** Name: Cemetery Location: LL34 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A14NW (E)	539	6	273745 377413
95	**Points of Interest - Public Infrastructure** Name: Outfall Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	712	6	273222 378112
96	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	782	6	273717 377942
96	**Points of Interest - Public Infrastructure** Name: Filter Bed Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	830	6	273728 377998
96	**Points of Interest - Public Infrastructure** Name: Filter Bed Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	832	6	273737 377992
96	**Points of Interest - Public Infrastructure** Name: Filter Bed Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	854	6	273768 377993

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	889	6	273783 378027
96	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: LL34 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A19SW (NE)	889	6	273784 378026
97	**Points of Interest - Public Infrastructure** Name: Tan Y Foel Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	882	6	272549 376683
97	**Points of Interest - Public Infrastructure** Name: Tan Y Foel Cemetery Location: LL34 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	886	6	272537 376688
98	**Points of Interest - Recreational and Environmental** Name: Play Area Location: LL34 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	102	6	273294 377392
98	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	102	6	273294 377393
99	**Points of Interest - Recreational and Environmental** Name: Play Area Location: LL34 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	261	6	273419 377490

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
100	**Ancient Woodland** Name: Not Supplied Reference: 37449 Area(m²): 83872.29 Type: Restored Ancient Woodland Site	A14NE (E)	860	2	274050 377526
101	**National Parks** Name: Snowdonia Multiple Area: N Area (m2): 2139330937.98 Source: Natural Resources Wales **Status: Fully Designated - designated as a National Park** Designation Date: 31st December 1951	A8NW (S)	437	2	273052 376901
102	**Sites of Special Scientific Interest** Name: Sychnant Pass Multiple Areas: Y Total Area (m2): 1081930.79 Source: Natural Resources Wales Reference: 91931way Designation Details: Biological Designation Date: 1st January 1957 Date Type: Notified	A14SE (E)	939	2	274151 377323
103	**Special Areas of Conservation** Name: Y Fenai A Bae Conwy / Menai Strait And Conwy Bay Multiple Areas: N Total Area (m2): 265017352.03 Source: Natural Resources Wales Reference: Uk0030202 **Status: Designated**	A13NW (NW)	340	2	272924 377690
104	**Special Protection Areas** Name: Liverpool Bay / Bae Lerpwl (Wales) Multiple Areas: N Total Area (m2): 786840845.92 Source: Natural Resources Wales Reference: UK9020294 Designation Date: 31st October 2017	A13NW (NW)	340	2	272924 377690
105	**Special Protection Areas** Name: Liverpool Bay Multiple Areas: N Total Area (m2): 2527577344.19 Source: Natural England Reference: UK9020294 Designation Date: Not Supplied	A13NW (NW)	340	7	272924 377690

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Conwy County Borough Council - Environmental Health Department	August 2013	Annual Rolling Update
Natural Resources Wales	November 2023	Annually
Discharge Consents		
Environment Agency - Welsh Region	August 2014	Quarterly
Natural Resources Wales	November 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		
Environment Agency - Welsh Region	July 2024	Quarterly
Natural Resources Wales	November 2024	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Conwy County Borough Council - Environmental Health Department	January 2015	Variable
Local Authority Pollution Prevention and Controls		
Conwy County Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Conwy County Borough Council - Environmental Health Department	January 2015	Variable
Nearest Surface Water Feature		
Ordnance Survey	October 2024	
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	
Historical Prosecutions		
Environment Agency, Welsh Region	March 2013	Not Applicable
Natural Resources Wales	March 2013	Not Applicable
Registered Radioactive Substances		
Natural Resources Wales	January 2015	
Environment Agency - Welsh Region	June 2016	
Substantiated Pollution Incident Register		
Environment Agency Wales - North Area	January 2021	Quarterly
Natural Resources Wales	November 2024	Quarterly
Water Abstractions		
Natural Resources Wales	December 2024	Quarterly
Environment Agency - Welsh Region	October 2024	Quarterly
Water Industry Act Referrals		
Environment Agency - Welsh Region	October 2017	
Natural Resources Wales	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	

Agency & Hydrological	Version	Update Cycle
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	
OS Water Network Lines Ordnance Survey	October 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
Water Framework Directive - Catchment Natural Resources Wales	July 2024	Annually
Water Framework Directive - Groundwater Natural Resources Wales	July 2024	Annually
Water Framework Directive - Surface Waters Natural Resources Wales	November 2024	Annually

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)		
Natural Resources Wales	August 2024	Quarterly
Environment Agency Wales - North Area	January 2023	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency Wales - North Area	July 2024	Quarterly
Natural Resources Wales	November 2024	Quarterly
Local Authority Landfill Coverage		
Conwy County Borough Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
Conwy County Borough Council - Environmental Health Department	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 - North Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency Wales - North Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency Wales - North Area	June 2015	
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2024	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		
Snowdonia National Park	January 2023	Variable
Conwy County Borough Council - Planning Department	June 2023	Variable
Planning Hazardous Substance Consents		
Conwy County Borough Council - Planning Department	February 2016	Variable
Snowdonia National Park	January 2023	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	March 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	November 2024	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	November 2024	Annually
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	December 2024	Quarterly
Fuel Station Entries Catalist Ltd - Experian	February 2024	Quarterly
Points of Interest - Commercial Services PointX	December 2024	Quarterly
Points of Interest - Education and Health PointX	December 2024	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2024	Quarterly
Points of Interest - Public Infrastructure PointX	December 2024	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2024	Quarterly
Underground Electrical Cables National Grid	January 2024	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural Resources Wales	October 2024	Bi-Annually
Areas of Adopted Green Belt		
Conwy County Borough Council	July 2024	Quarterly
Snowdonia National Park	July 2024	Quarterly
Areas of Unadopted Green Belt		
Conwy County Borough Council	July 2024	Quarterly
Snowdonia National Park	July 2024	Quarterly
Areas of Outstanding Natural Beauty		
Natural Resources Wales	November 2024	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		
Conwy County Borough Council	August 2024	Bi-Annually
Marine Nature Reserves		
Natural Resources Wales	August 2024	Bi-Annually
National Nature Reserves		
Natural Resources Wales	August 2024	Bi-Annually
National Parks		
Natural Resources Wales	September 2024	Annually
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	April 2016	
Natural Resources Wales	November 2024	Bi-Annually
Ramsar Sites		
Natural Resources Wales	August 2024	Bi-Annually
Sites of Special Scientific Interest		
Natural Resources Wales	October 2023	Bi-Annually
Special Areas of Conservation		
Natural Resources Wales	October 2024	Bi-Annually
Special Protection Areas		
Natural England	November 2024	Bi-Annually
Natural Resources Wales	November 2024	Bi-Annually

Data Suppliers

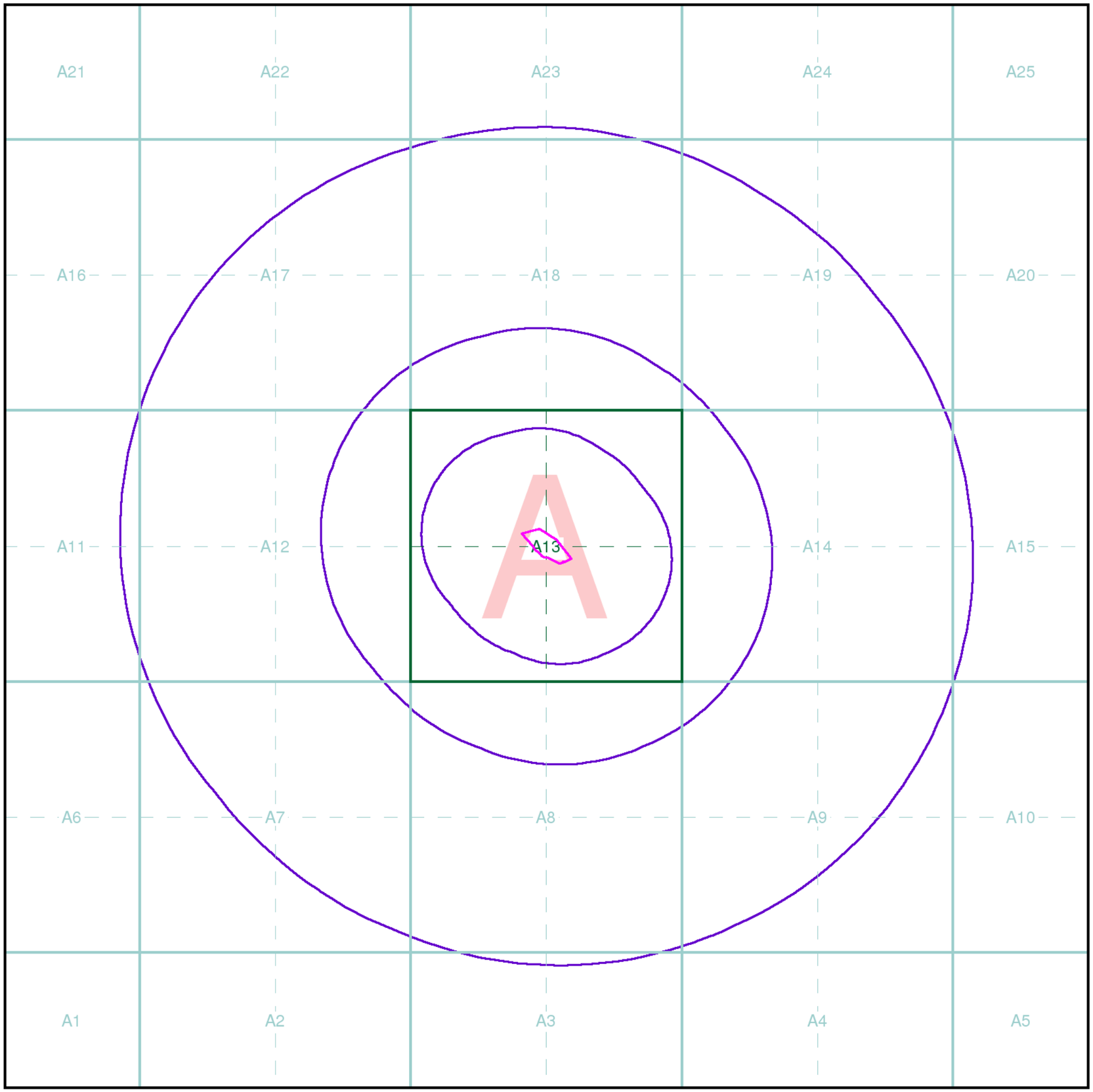
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

Useful Contacts

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	**Conwy County Borough Council - Environmental Health Department** Civic Offices, Colwyn Bay, Gwynedd, LL29 8AR	Telephone: 01492 575187 Fax: 01492 575204 Website: www.conwy.gov.uk
4	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.co.uk
6	**PointX** 5-6 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
7	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.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** Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0330 036 6618 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk

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



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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.

Prepared For
Cartrefi Conwy Ltd

Client Details
Mr A Jones, Caulmert Ltd, Unit 14, InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details
Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

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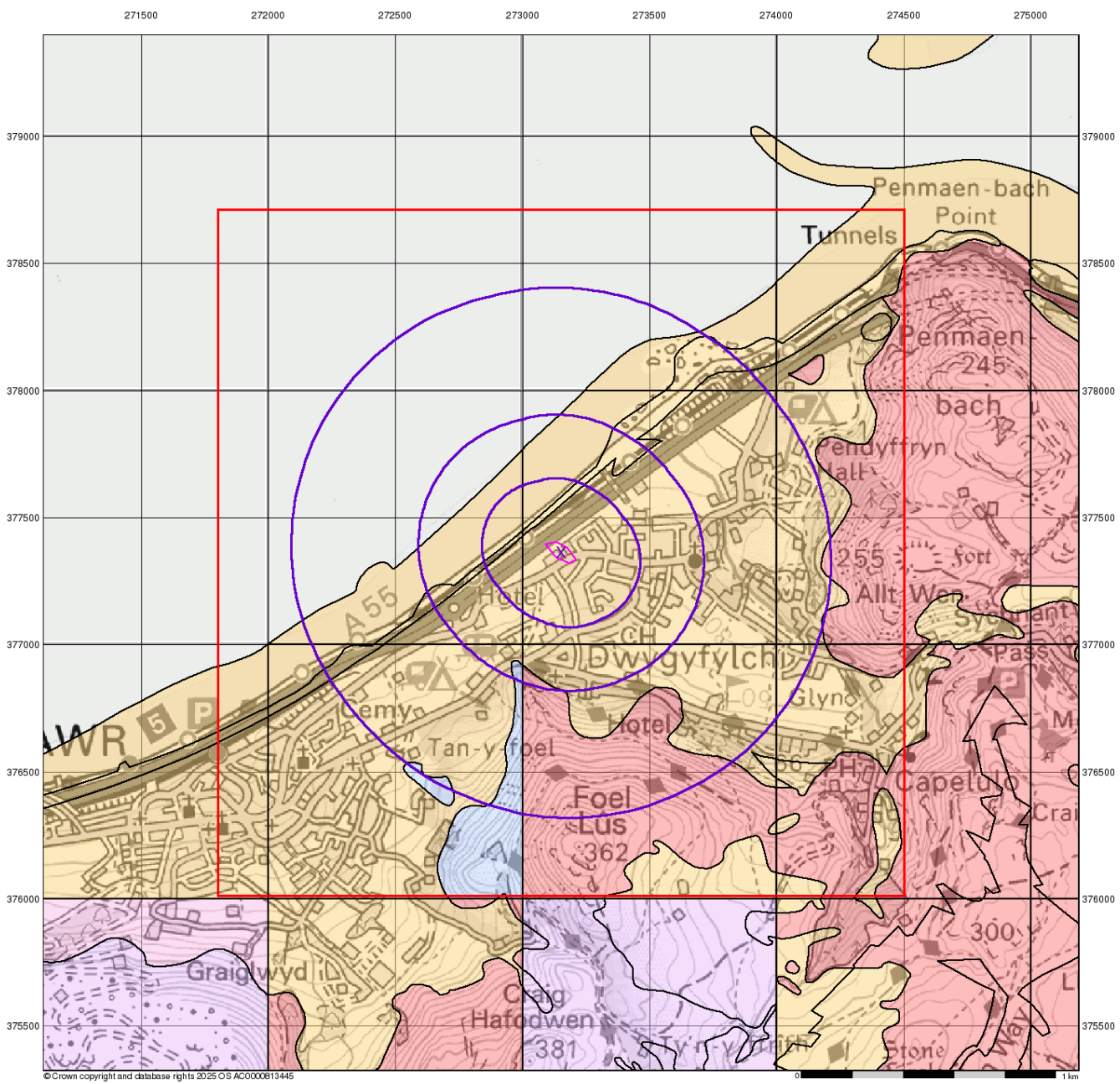
Web: www.envirocheck.co.uk



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Groundwater Vulnerability

General

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

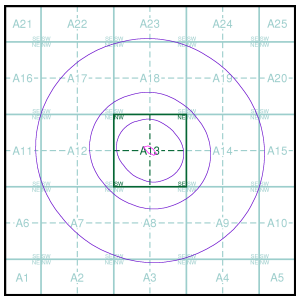
Agency and Hydrological

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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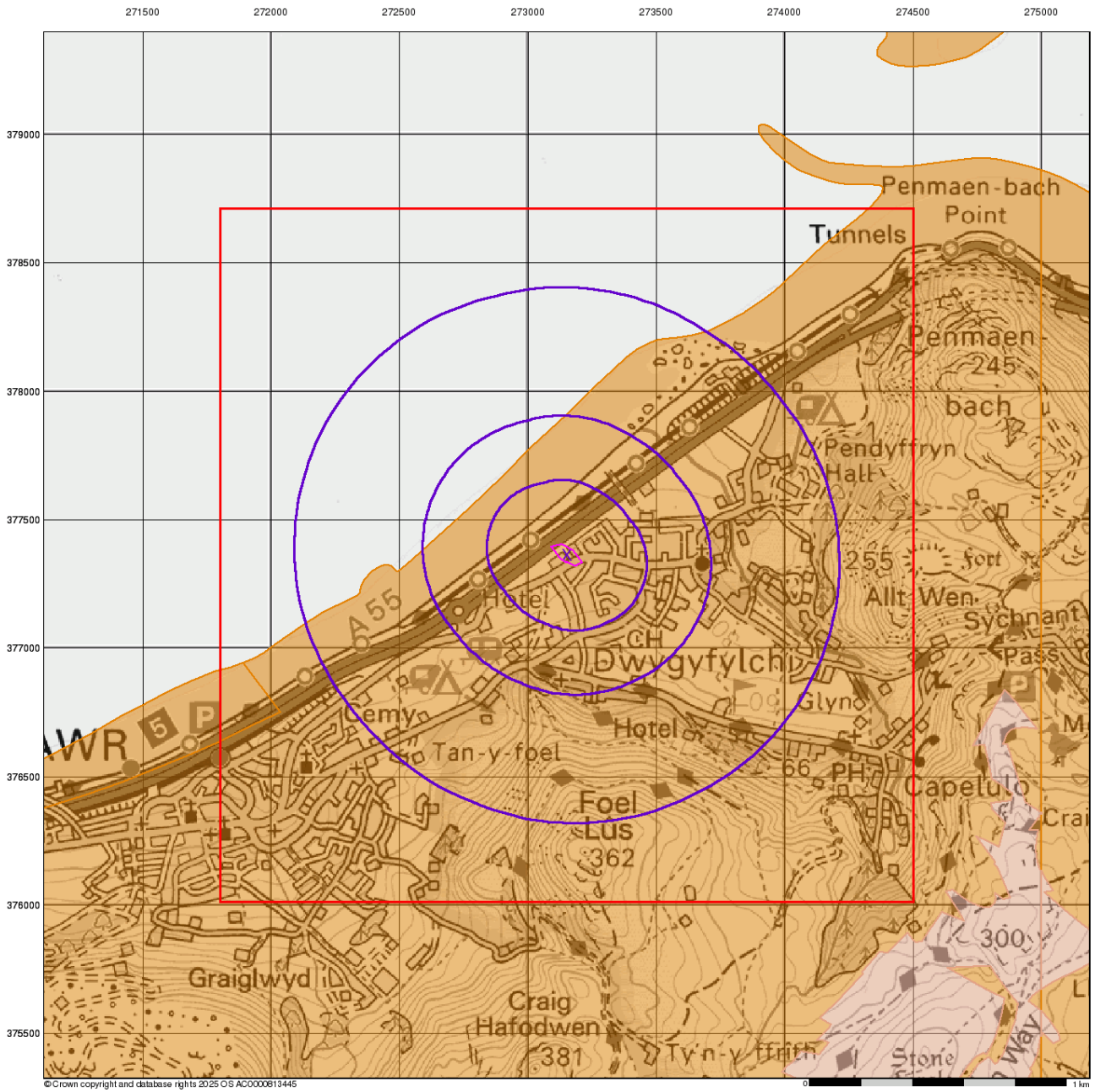
Web: www.envirocheck.co.uk



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Bedrock Aquifer Designation

General

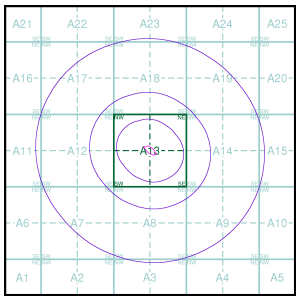
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

Landmark® INFORMATION GROUP

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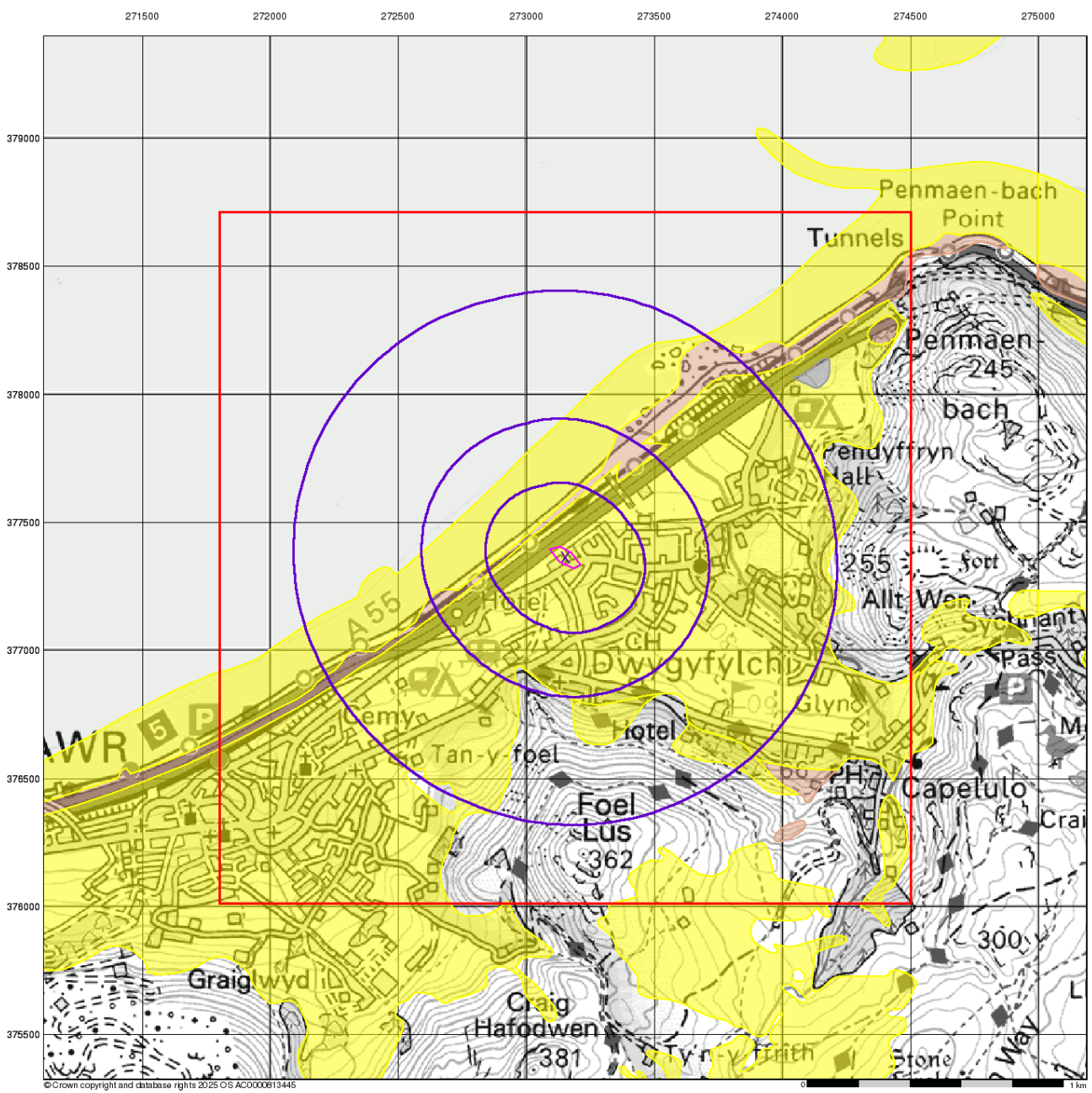

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Superficial Aquifer Designation

General

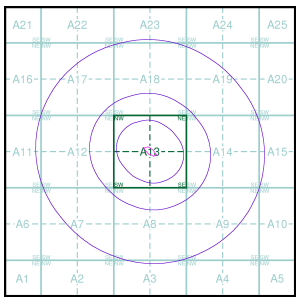
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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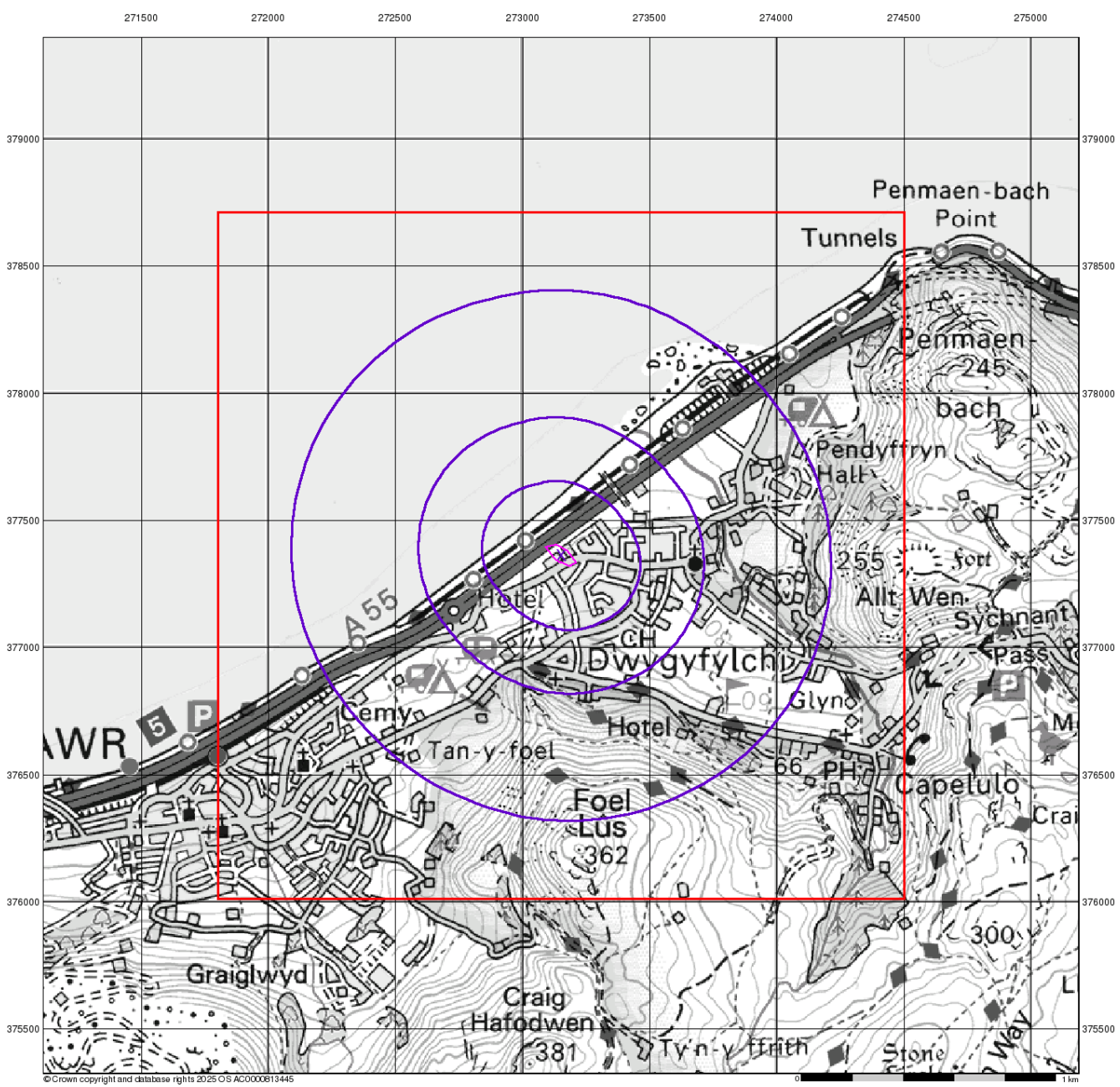
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Source Protection Zones

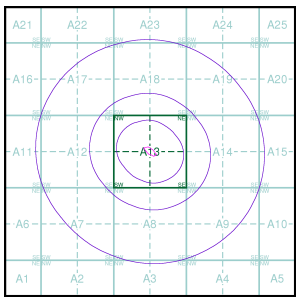
General

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

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Customer Ref:	6005
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Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

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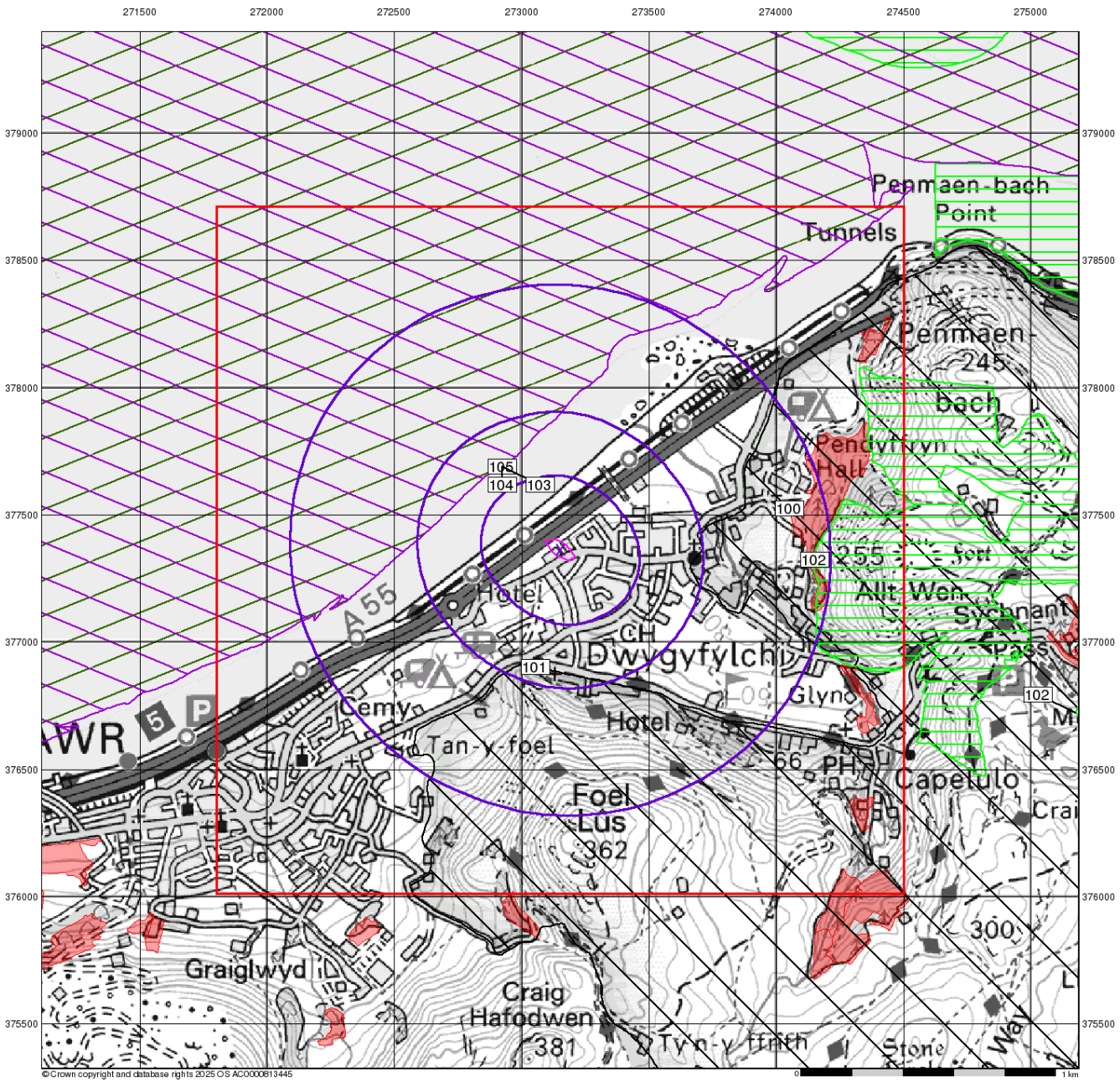

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Sensitive Land Uses

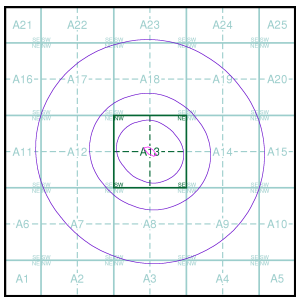
General

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

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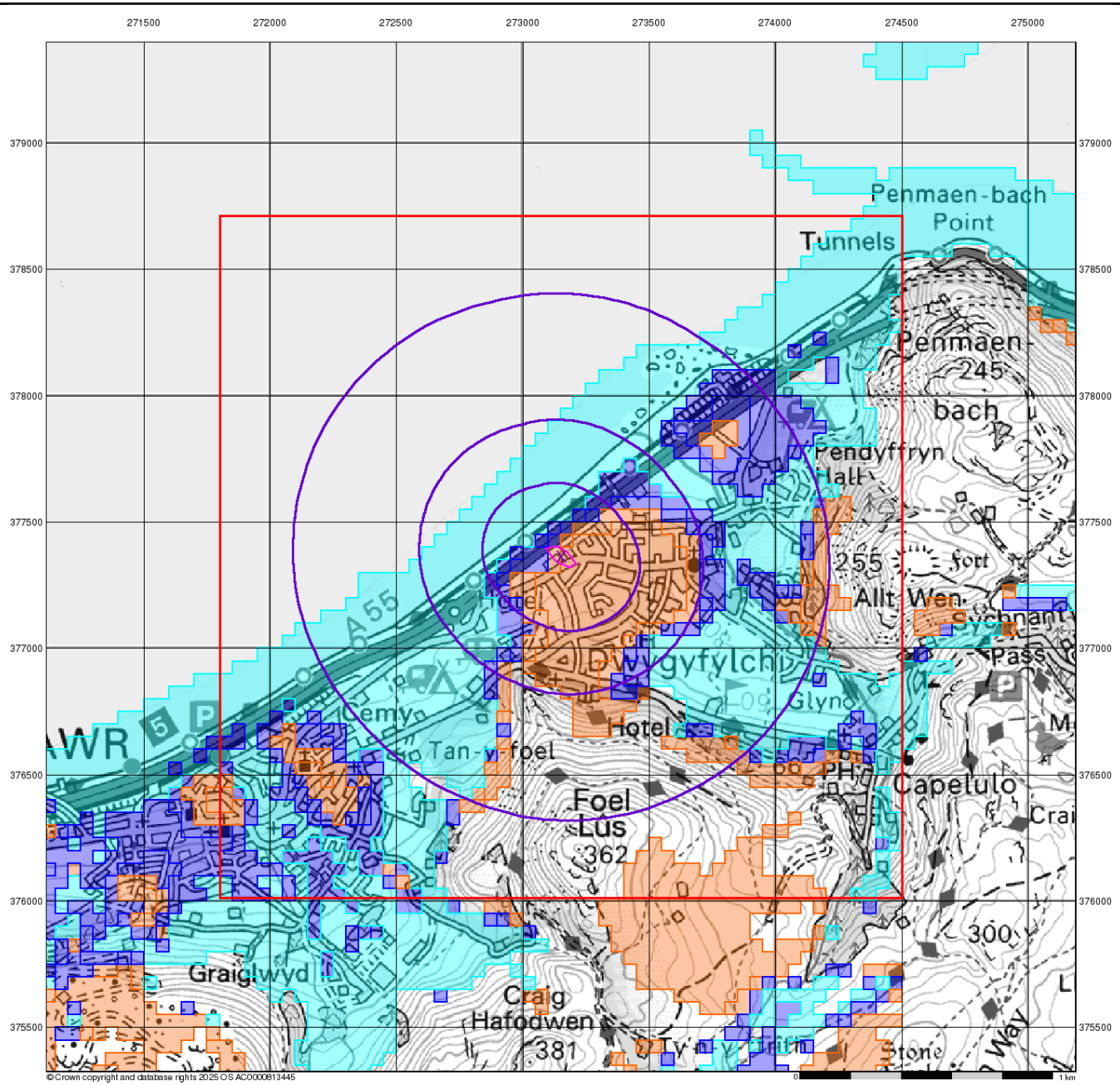

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BGS Flood GFS Data

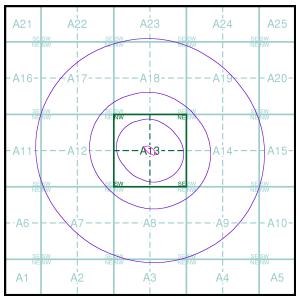
General

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

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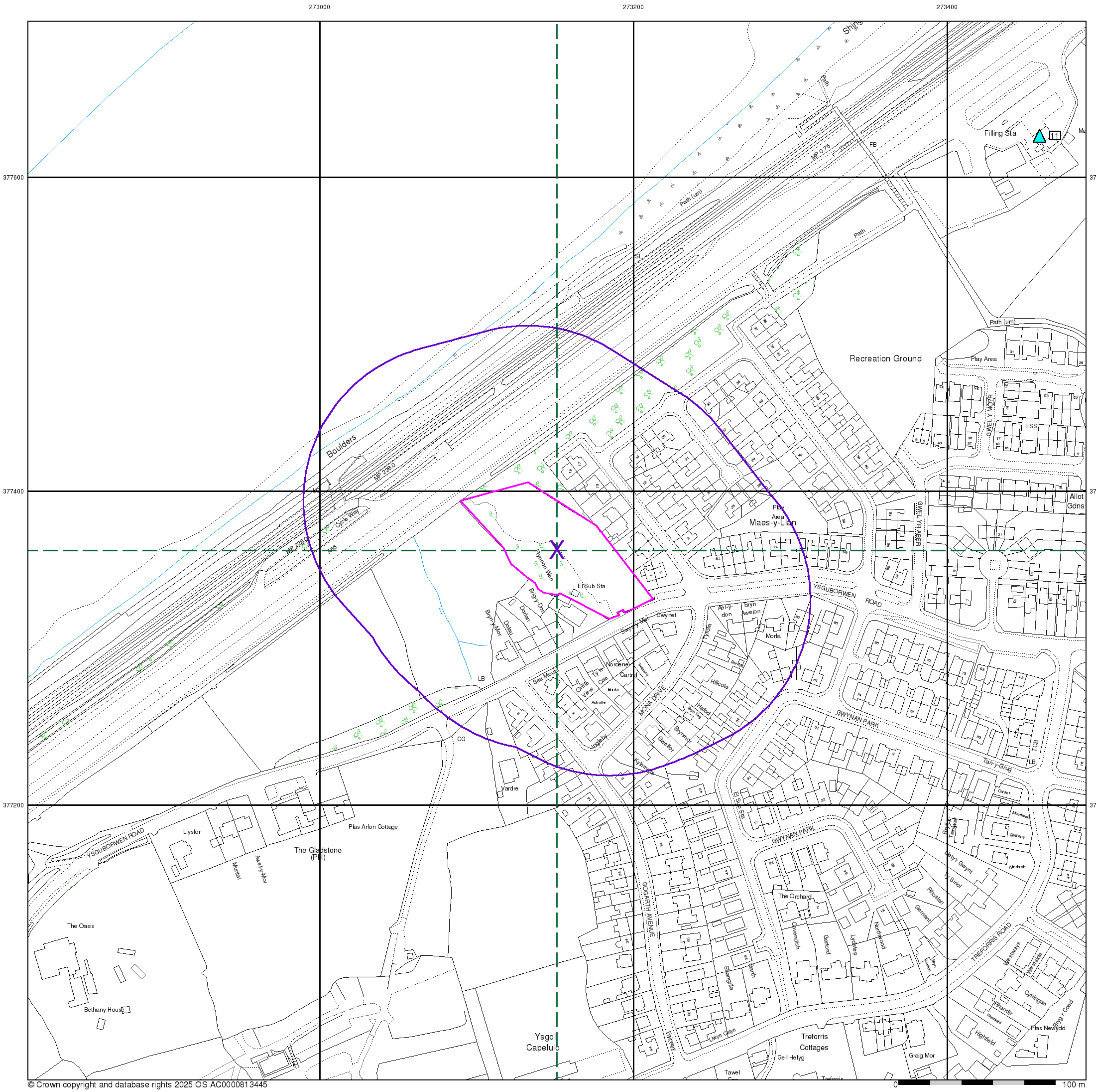

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General

- 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
- Historical Prosecutions
- Prosecutions
- Registered Radioactive Substance
- River Network or Water Feature
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

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

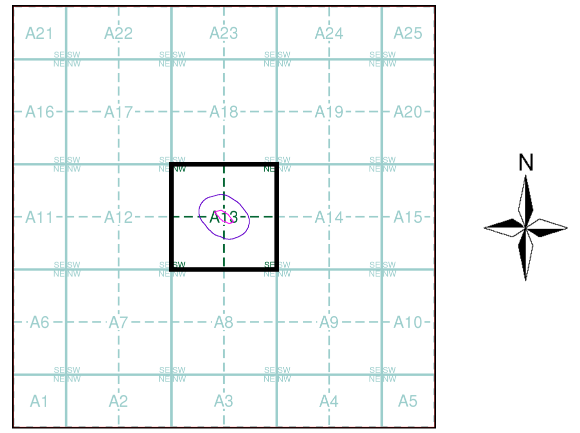
Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A13



Order Details

Order Number: 366982679_1_1
Customer Ref: 6005
National Grid Reference: 273150, 377360
Slice: A
Site Area (Ha): 0.5
Plot Buffer (m): 100

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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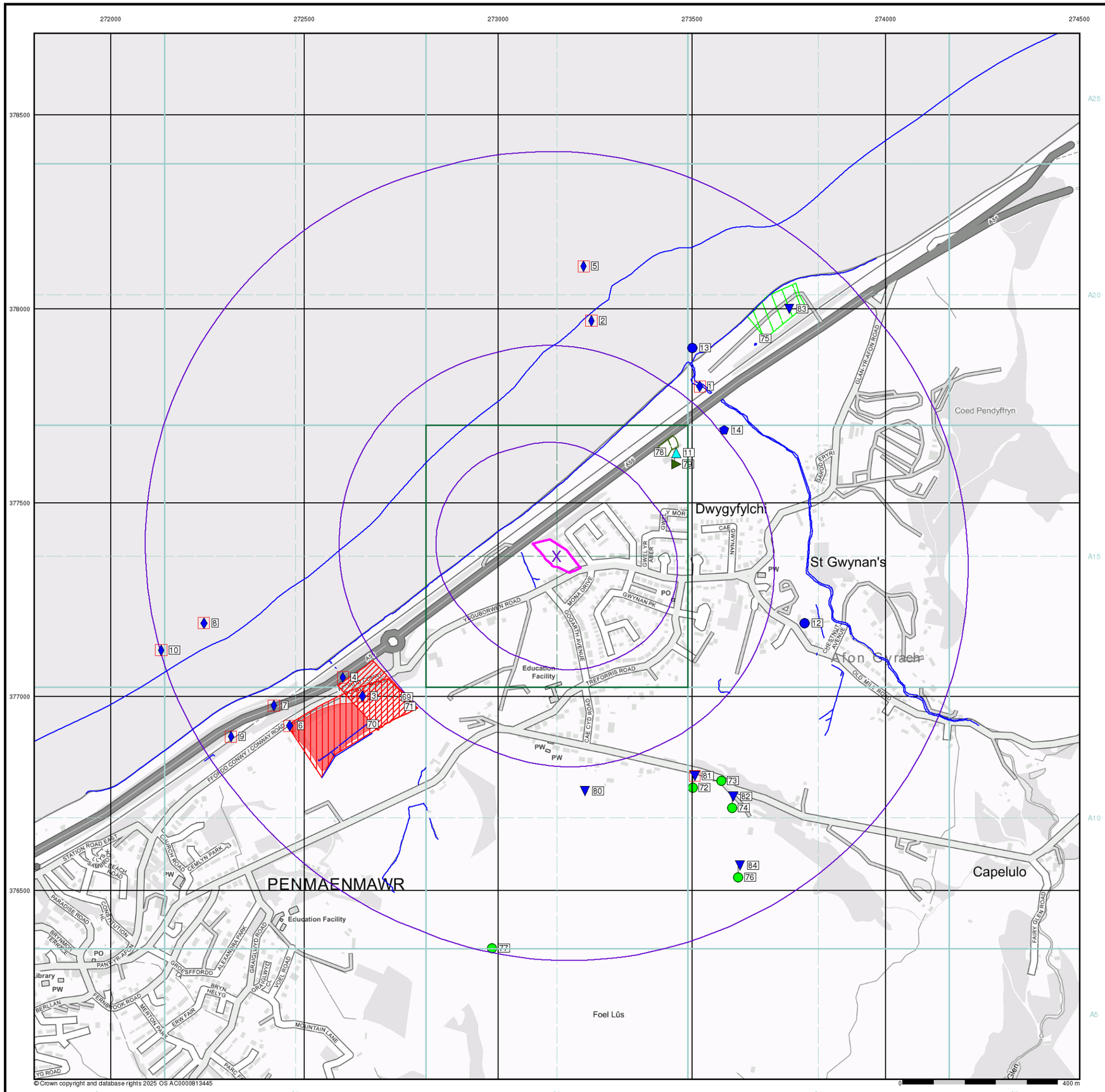

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LANDMARK INFORMATION GROUP®

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
- Historical Prosecutions
- Prosecutions
- Registered Radioactive Substance
- River Network or Water Feature
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

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
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- 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

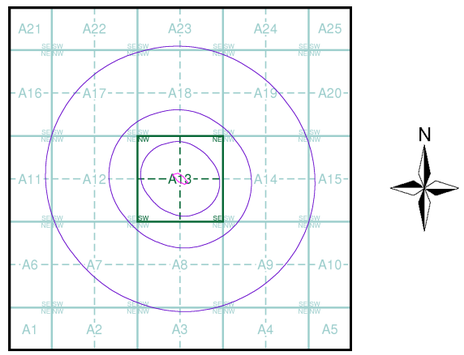
Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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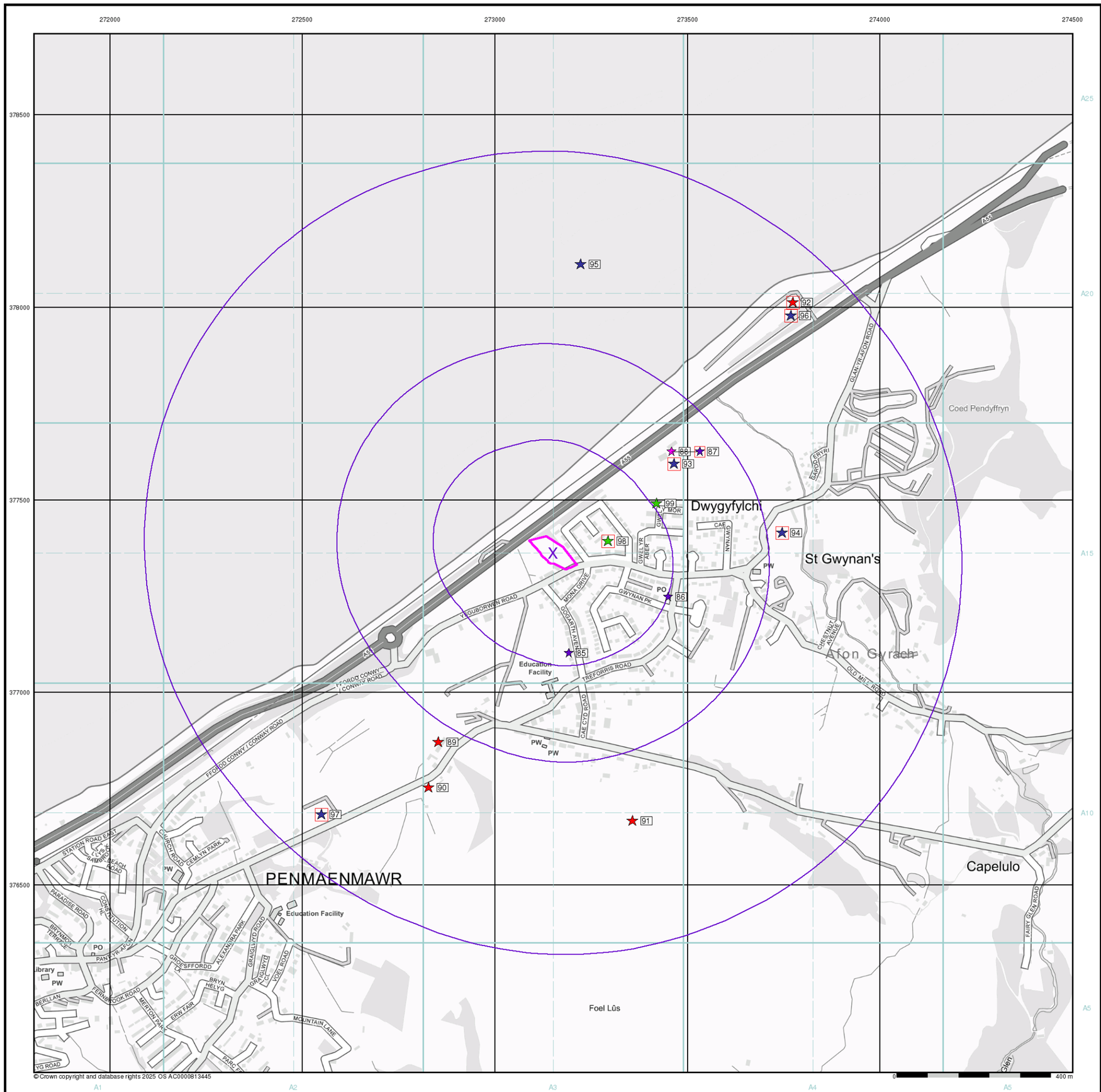

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Industrial Land Use Map

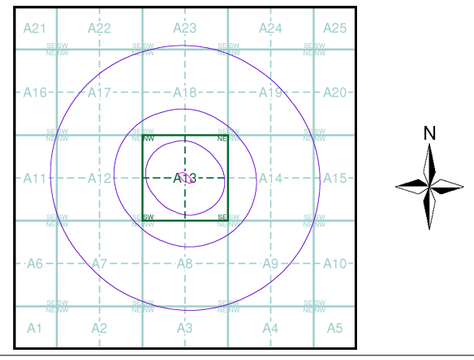
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- 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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

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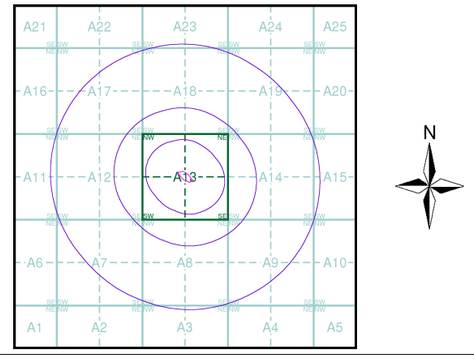
General

- 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



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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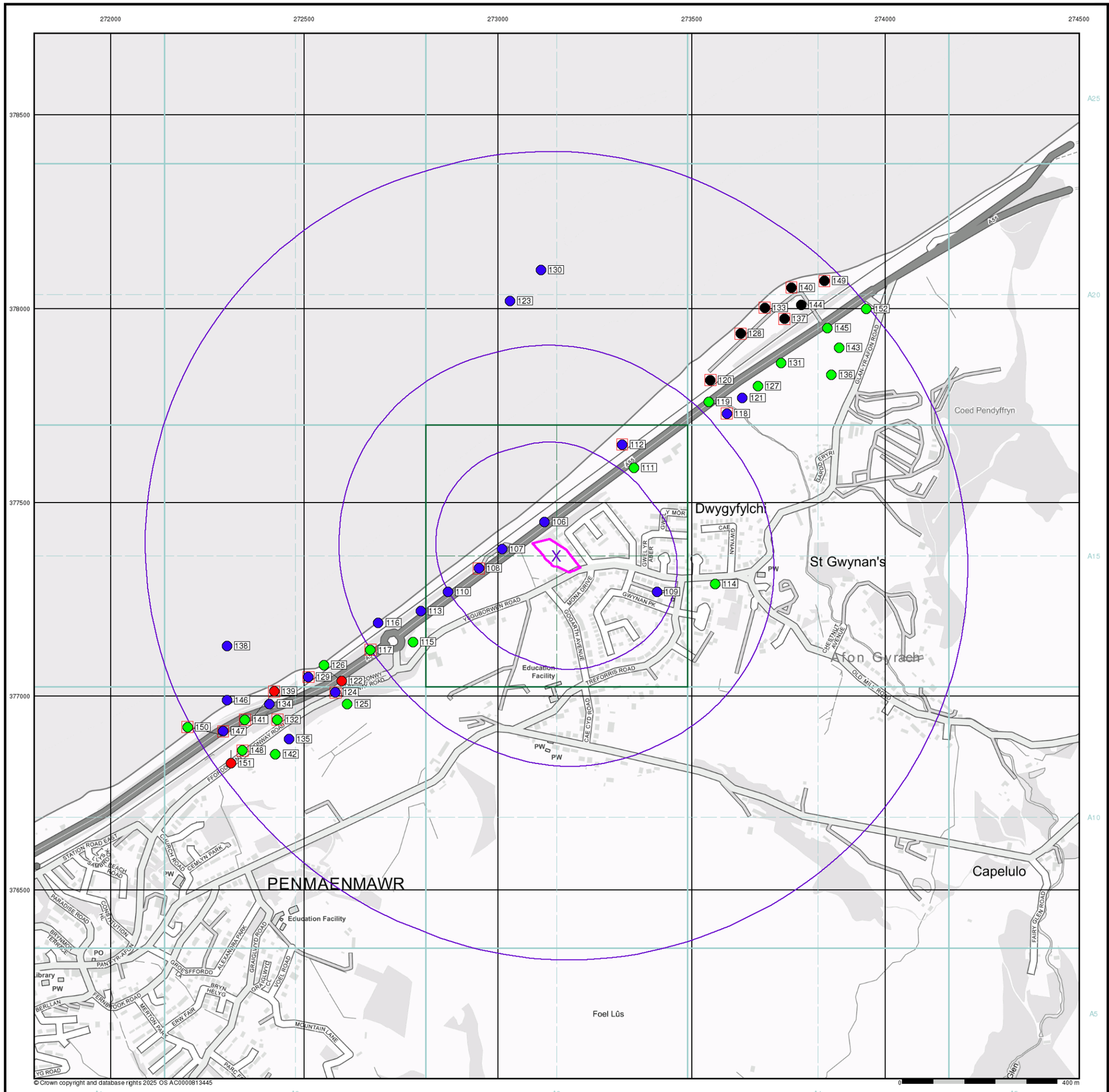

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LANDMARK INFORMATION GROUP®

General

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

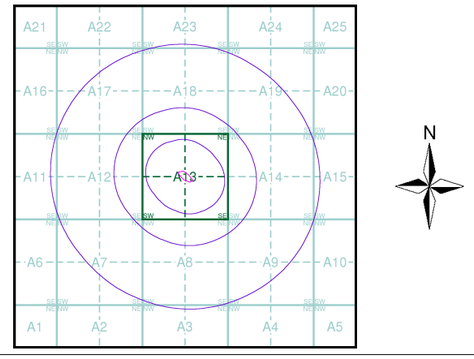
Agency and Hydrological (Boreholes)

- 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



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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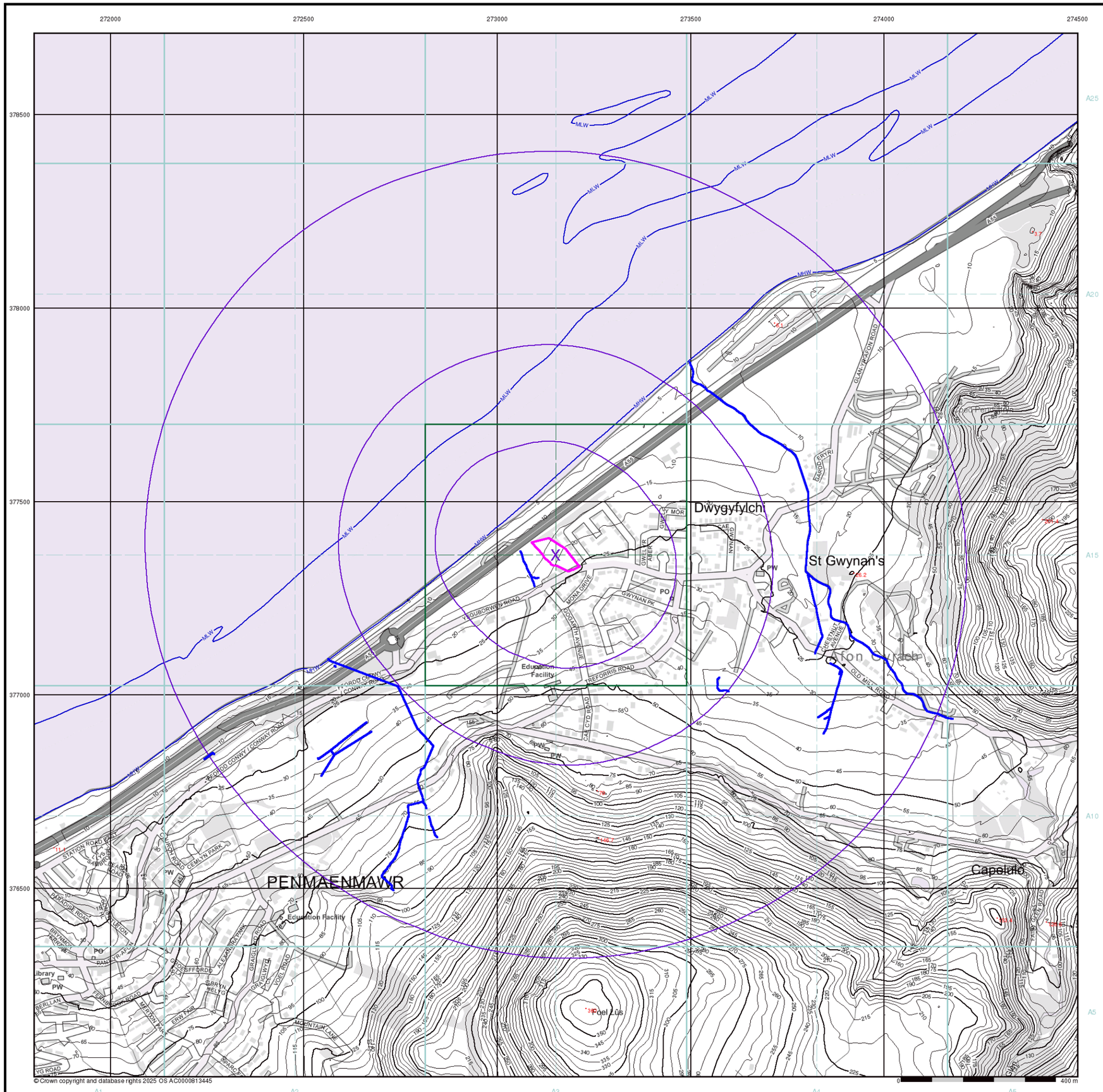

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LANDMARK INFORMATION GROUP®

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)

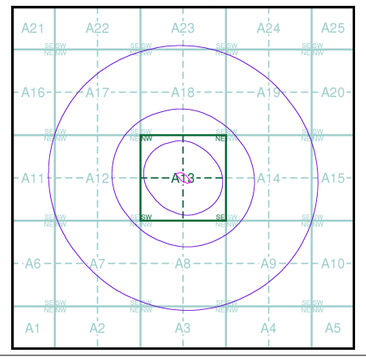
Standard Contour 105

Master Contour 100

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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LANDMARK INFORMATION GROUP®

General

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

Risk of Flooding from Surface Water

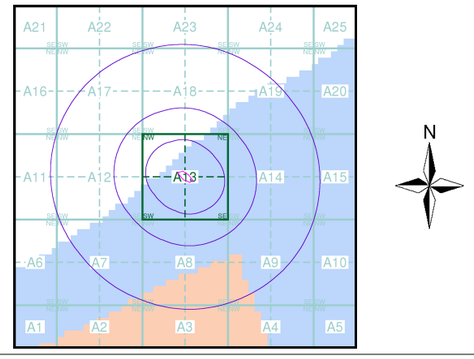
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

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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Slice:	A
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Site Details

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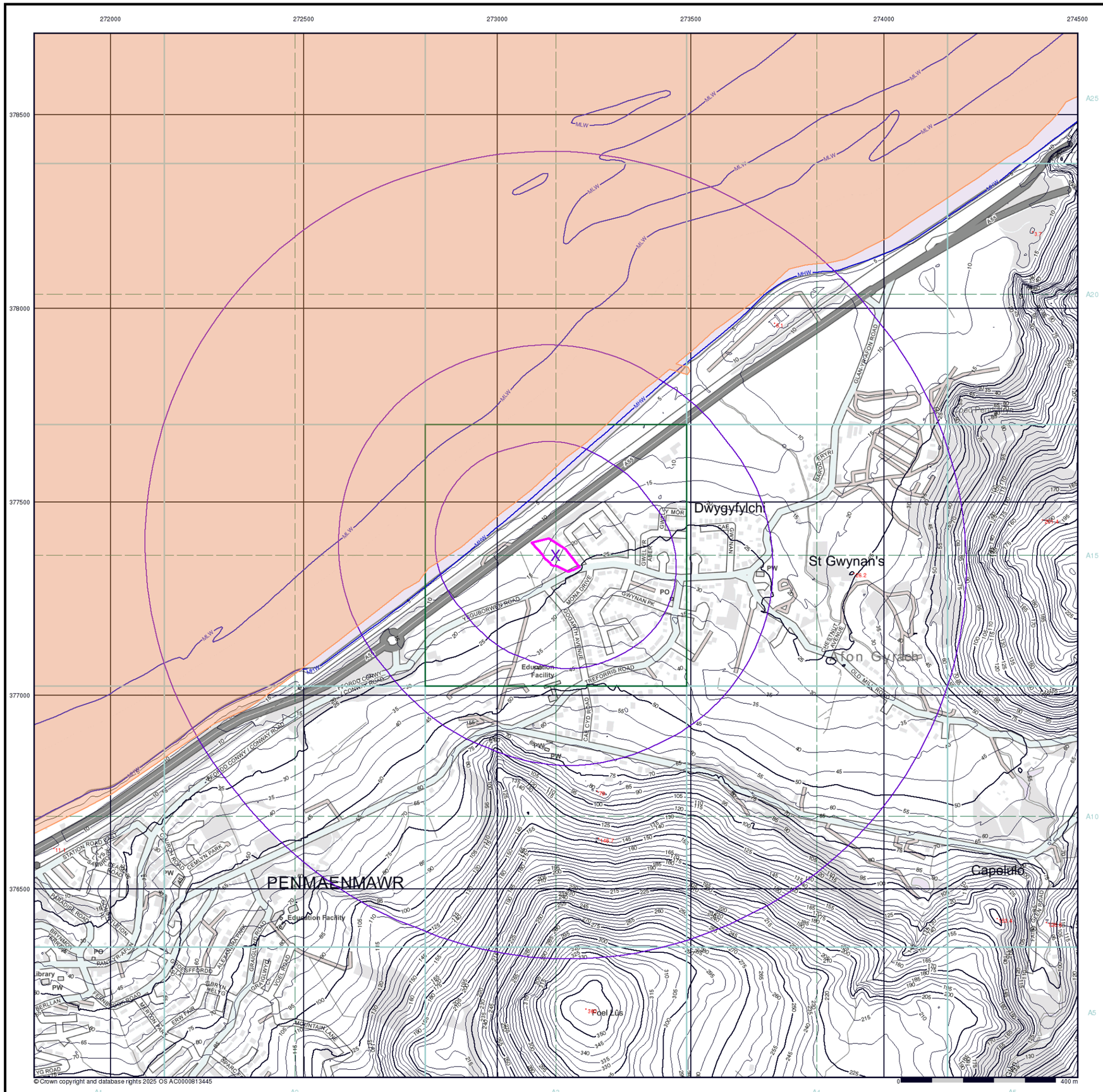

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WFD Surface Waters Map

General

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

Slice | Map ID

Water Framework Directive - Surface Water Quality

- High
- Good
- Moderate
- Poor
- Bad

Contours (height in meters)

Standard Contour

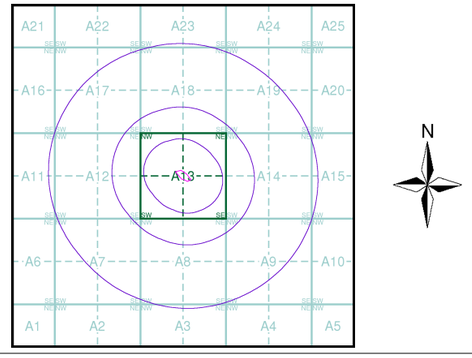
Master Contour

Spot Height 167.3

MLW Mean Low Water

MHW Mean High Water

WFD Surface Waters Map - Slice A



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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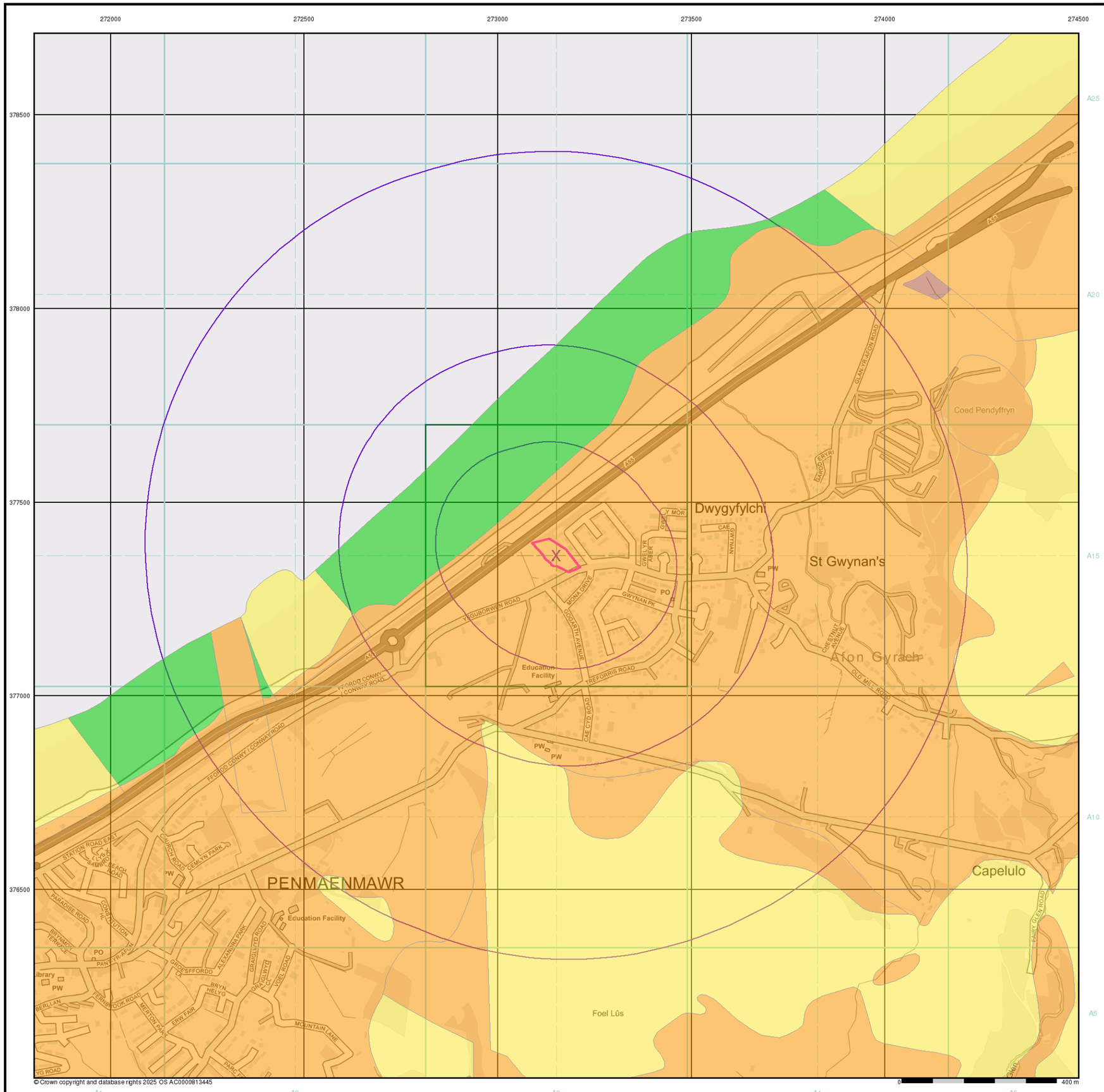

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LANDMARK INFORMATION GROUP®

General

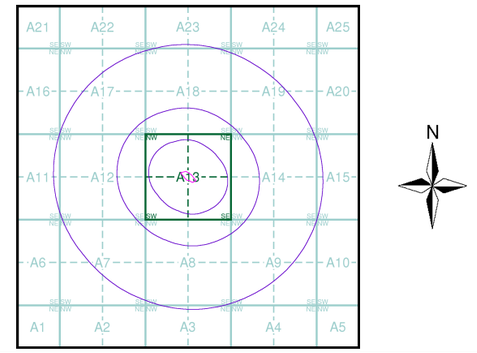
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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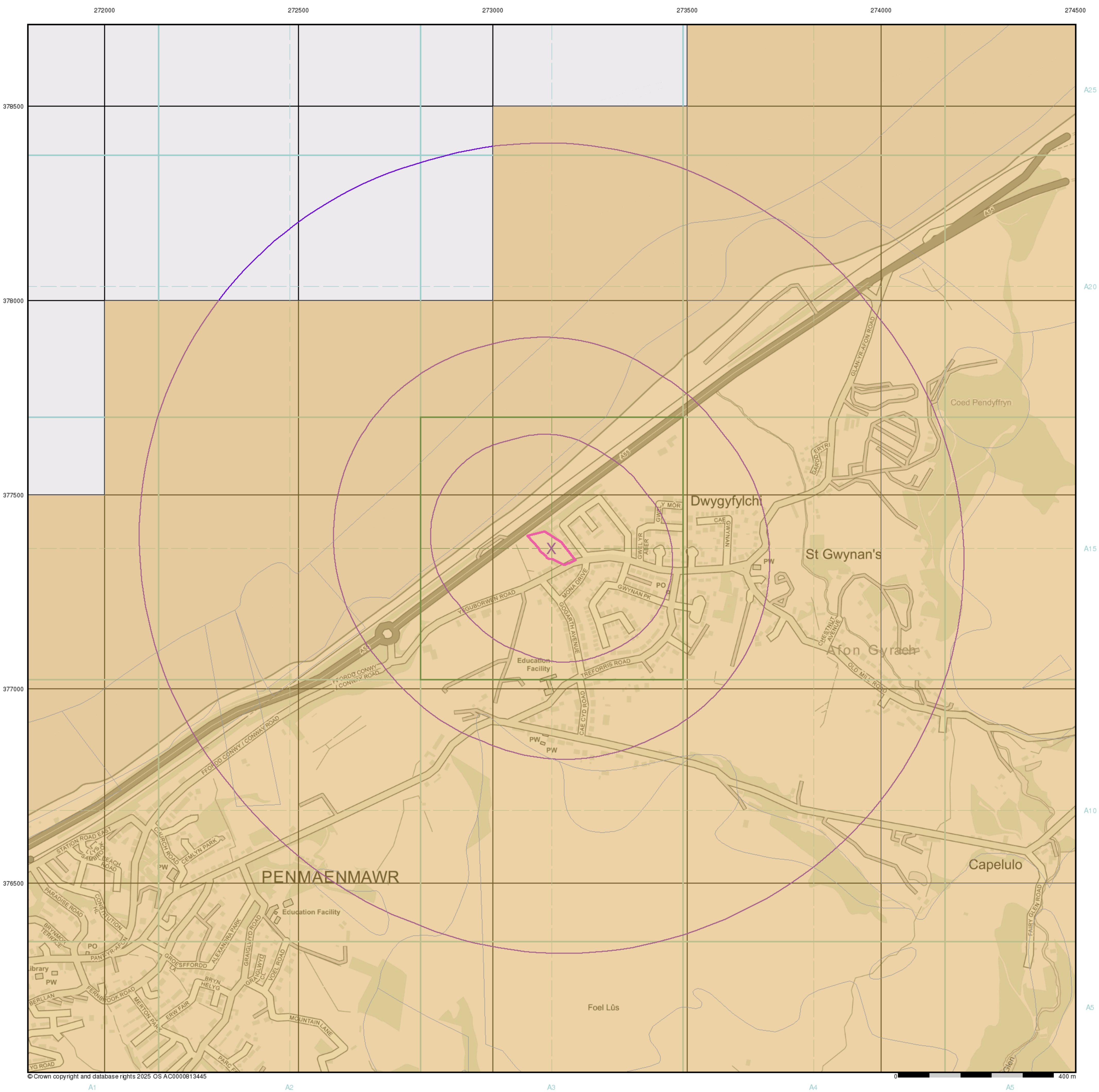

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LANDMARK INFORMATION GROUP®

General

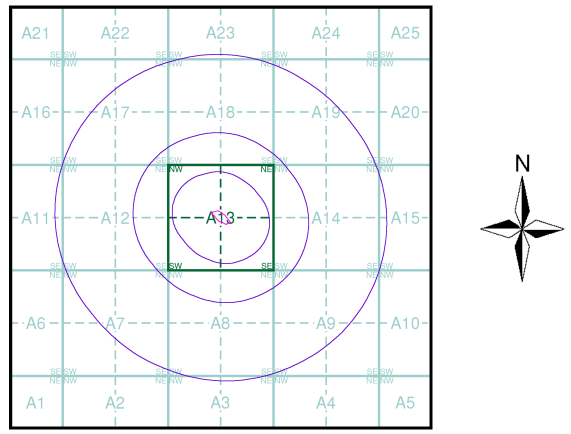
Specified Site — Specified Buffer(s) — X Bearing Reference Point

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



Order Details

Order Details: 366982679_1_1
Customer Ref: 6005
National Grid Reference: 273150, 377360
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 1000

Site Details

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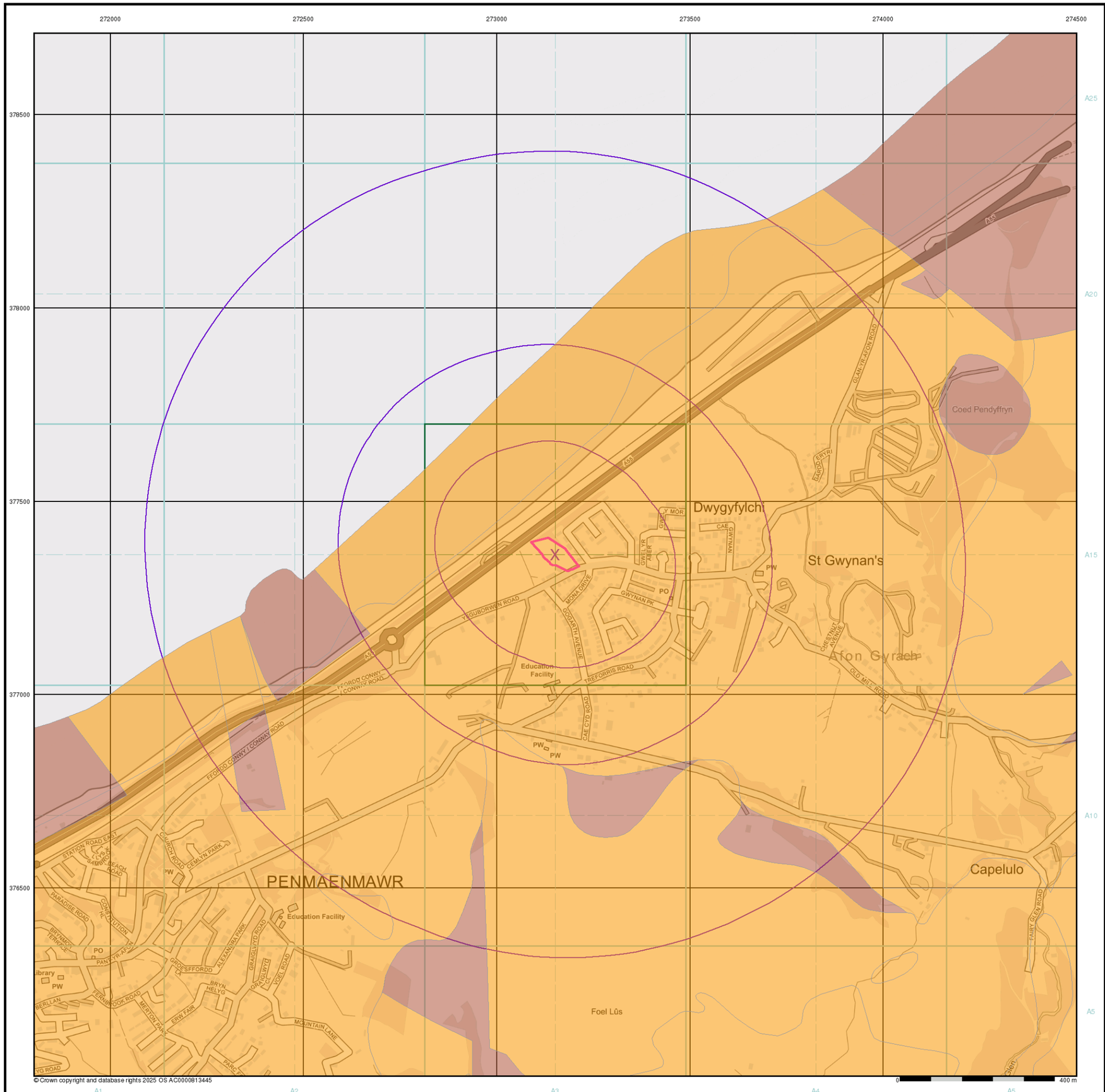


Envirocheck®

LANDMARK INFORMATION GROUP®

General

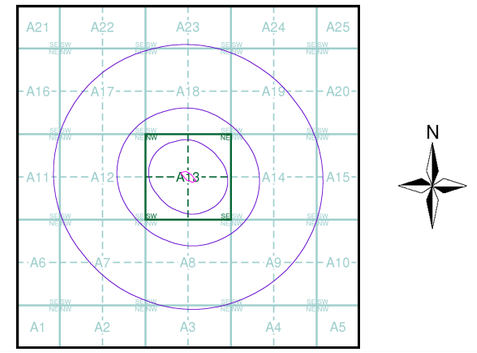
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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



Order Details

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Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

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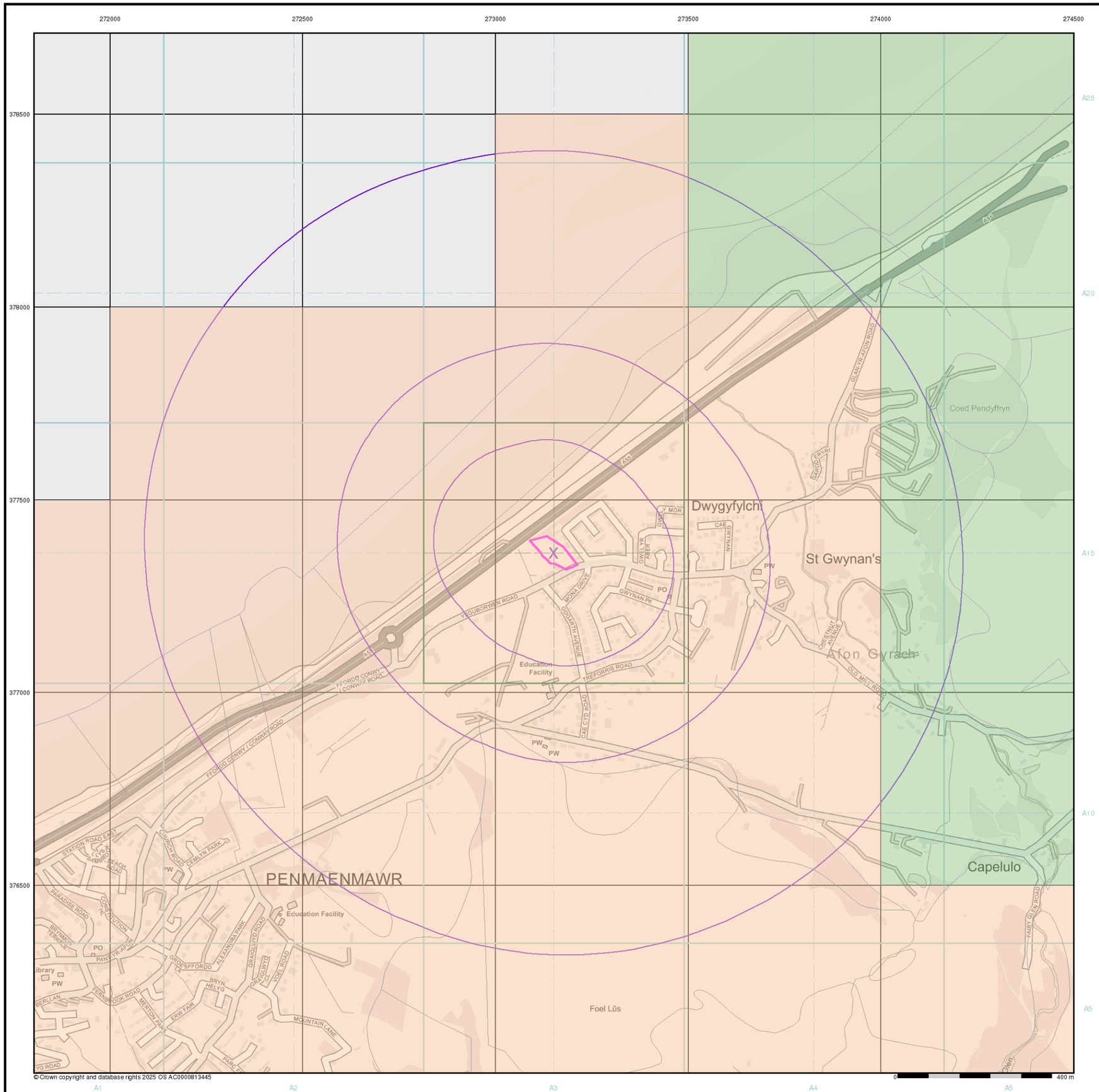
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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General

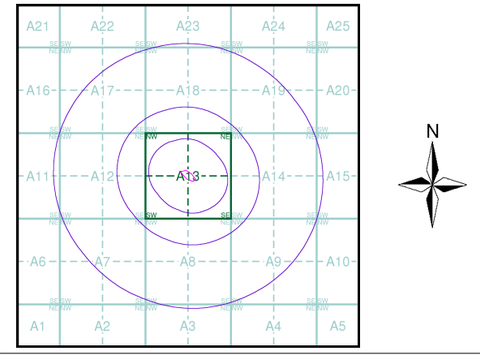
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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



Order Details

Order Details:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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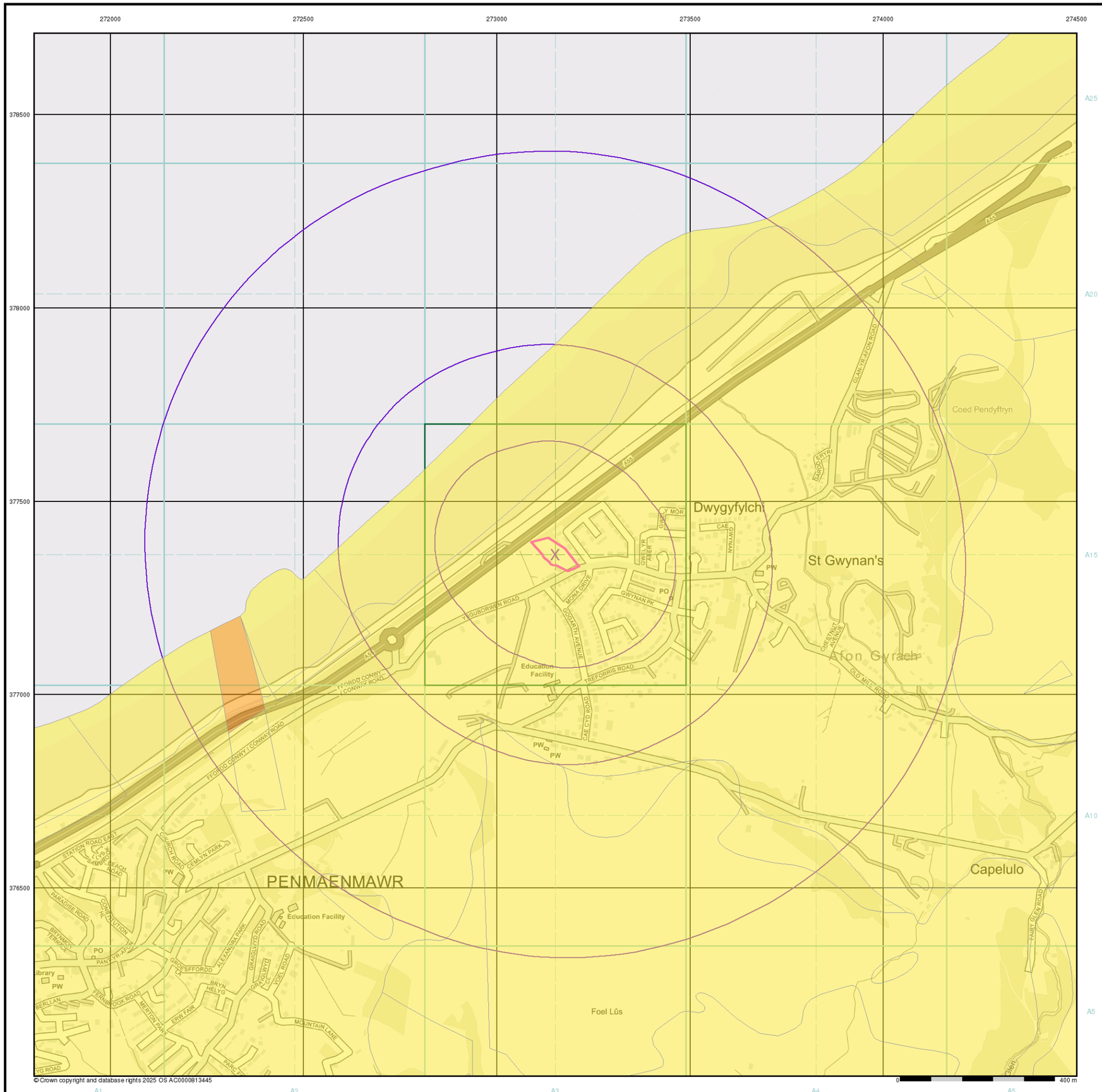

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LANDMARK INFORMATION GROUP®

General

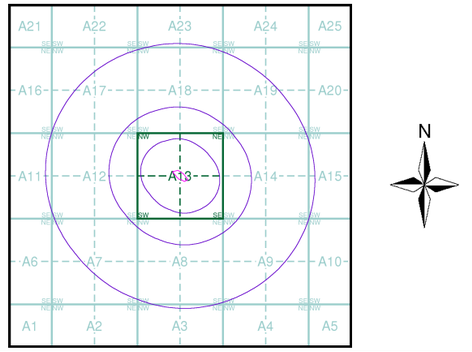
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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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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
Electricity Transmission Line
Pole
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

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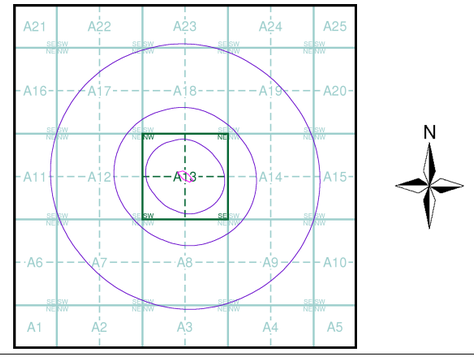
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Caernarvonshire	1:10,560	1888	2
Caernarvonshire	1:10,560	1901	3
Caernarvonshire	1:10,560	1915	4
Caernarvonshire	1:10,560	1938	5
Caernarvonshire	1:10,560	1953	6
Ordnance Survey Plan	1:10,000	1964	7
Ordnance Survey Plan	1:10,000	1975	8
Ordnance Survey Plan	1:10,000	1992	9
10K Raster Mapping	1:10,000	2000	10
10K Raster Mapping	1:10,000	2006	11
VectorMap Local	1:10,000	2024	12

Historical Map - Slice A



Order Details

Order Number: 366982679_1_1
Customer Ref: 6005
National Grid Reference: 273150, 377360
Slice: A
Site Area (Ha): 0.5
Search Buffer (m): 1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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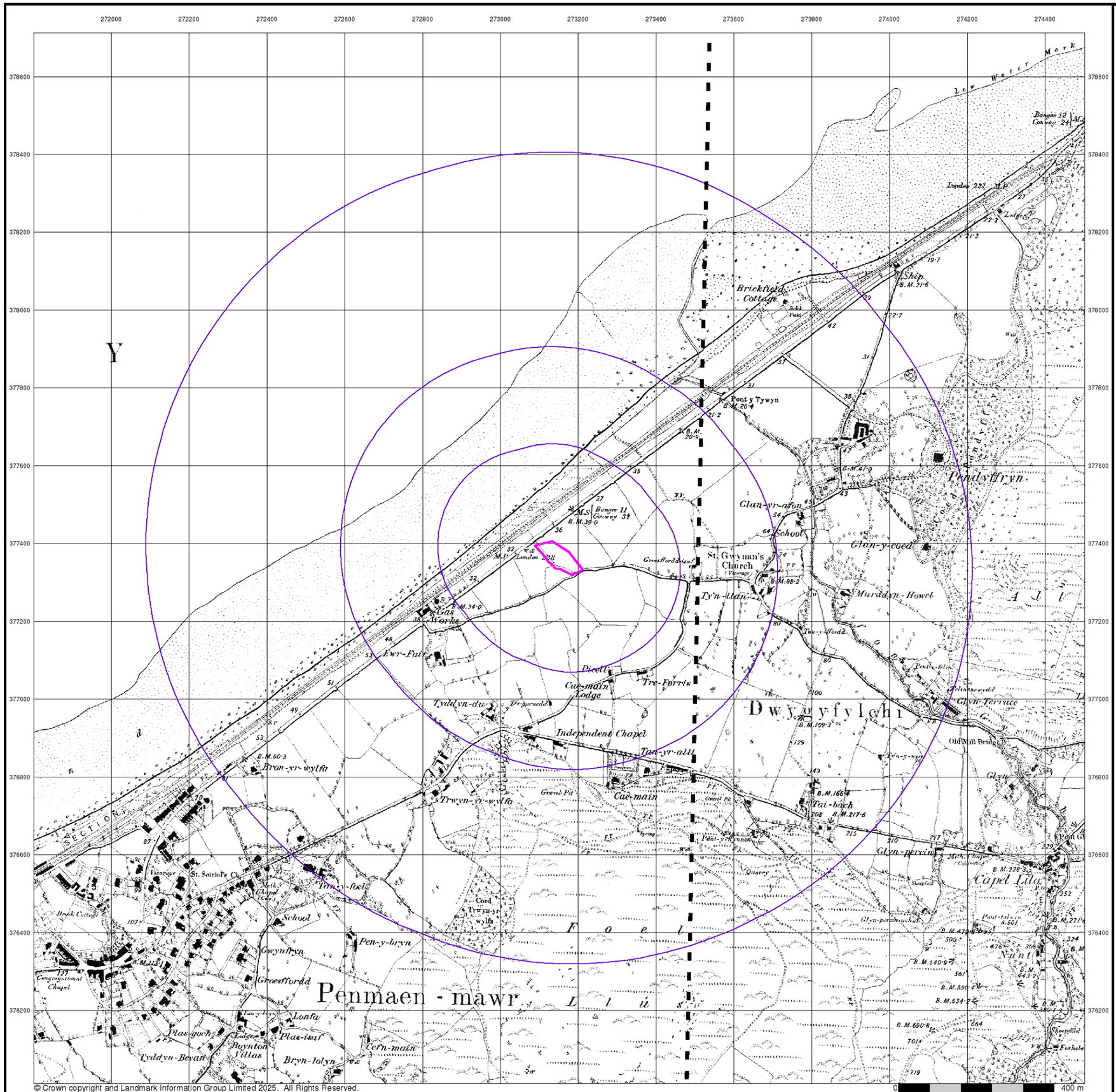

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Caernarvonshire

Published 1888

Source map scale - 1:10,560

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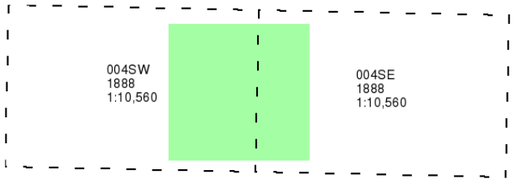
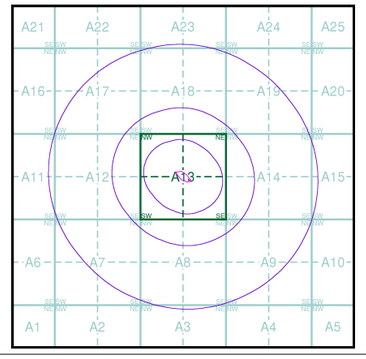
Map Name(s) and Date(s)



Historical Map - Slice A



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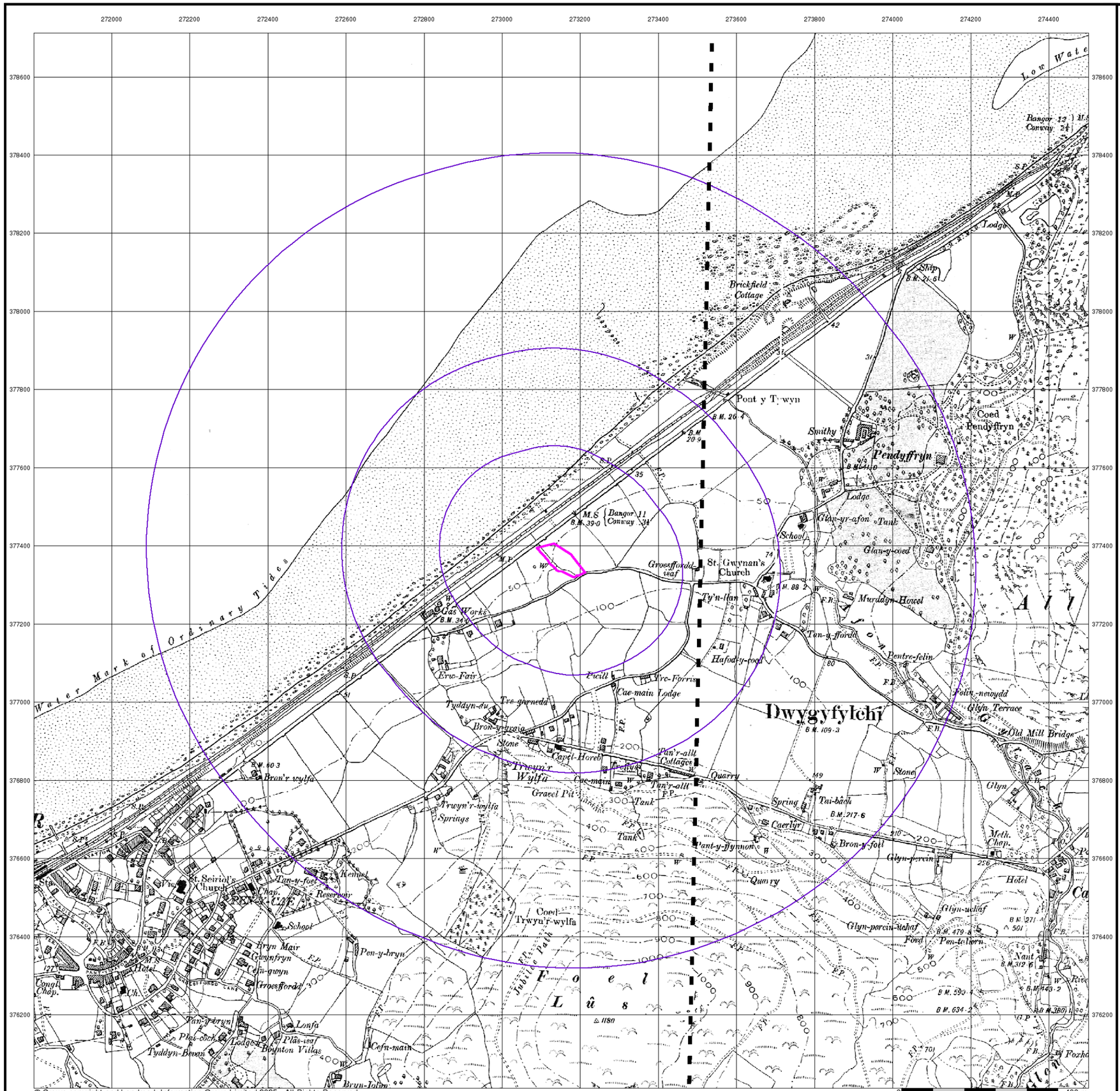

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Caernarvonshire

Published 1901

Source map scale - 1:10,560

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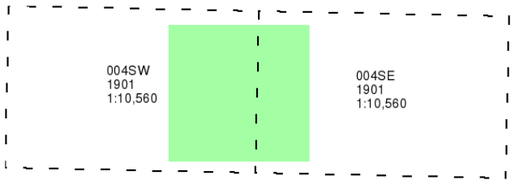
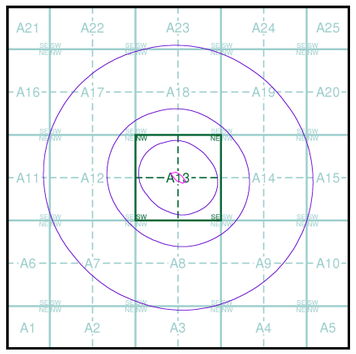


Historical Map - Slice A



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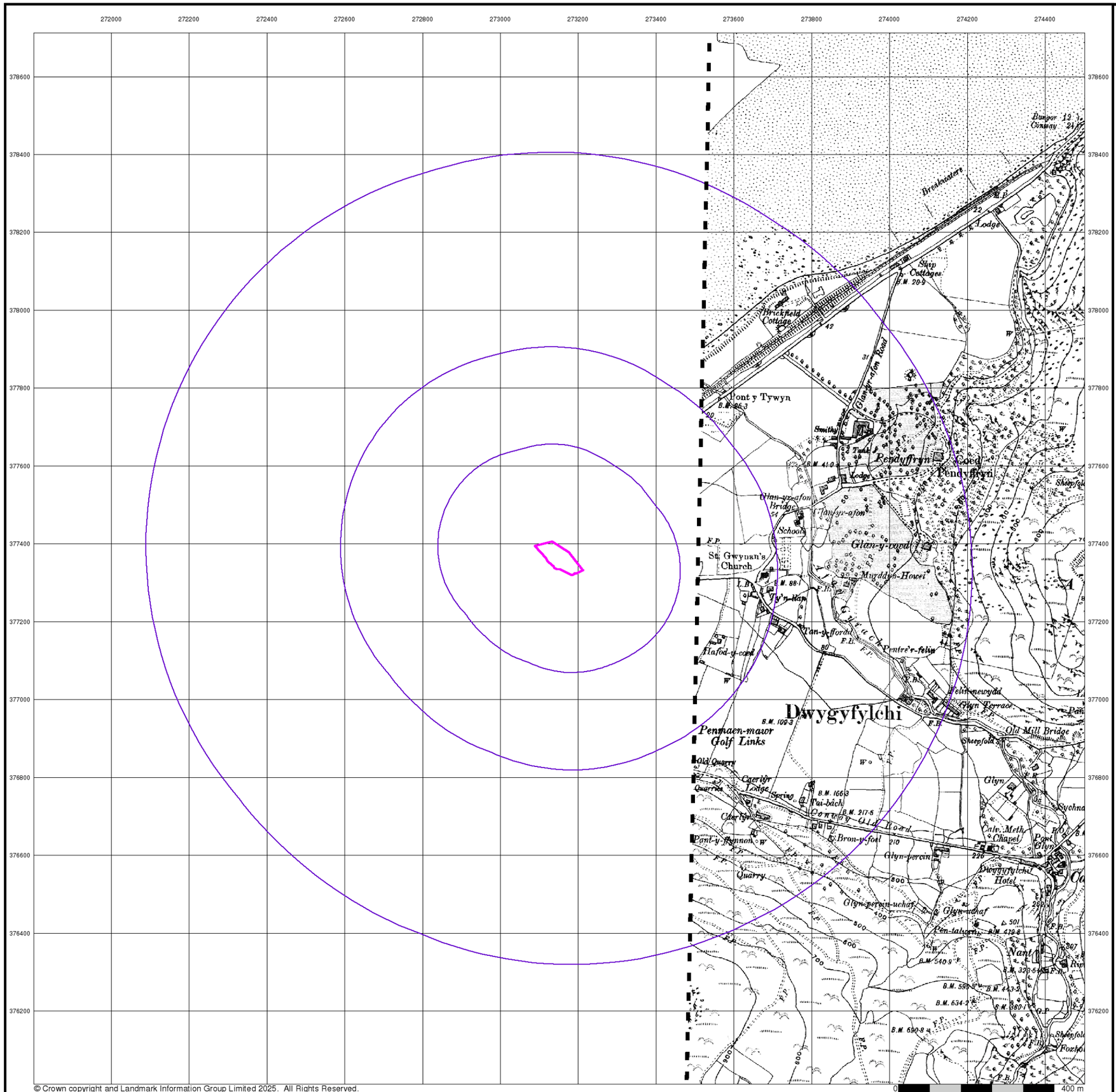

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Caernarvonshire

Published 1915

Source map scale - 1:10,560

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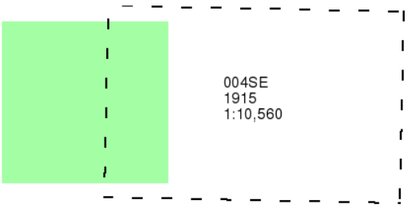
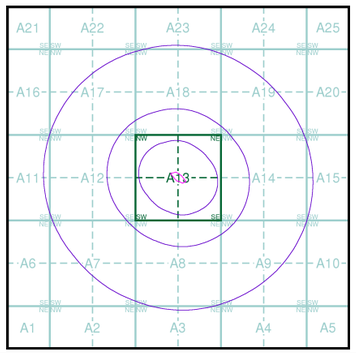


Historical Map - Slice A



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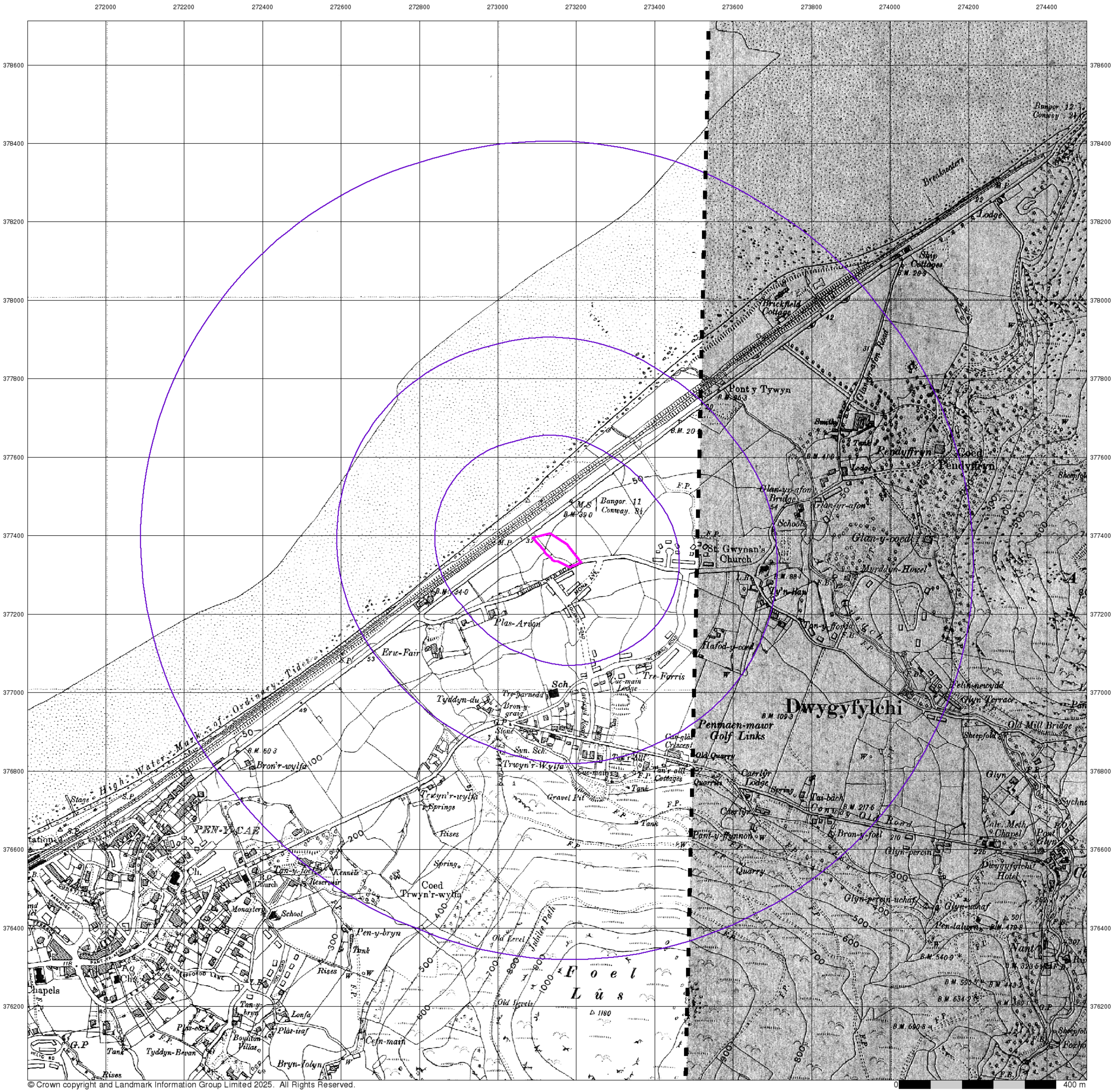

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Caernarvonshire

Published 1938

Source map scale - 1:10,560

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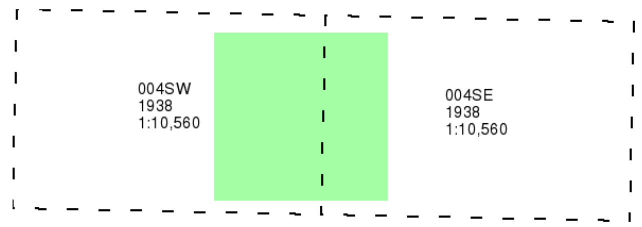
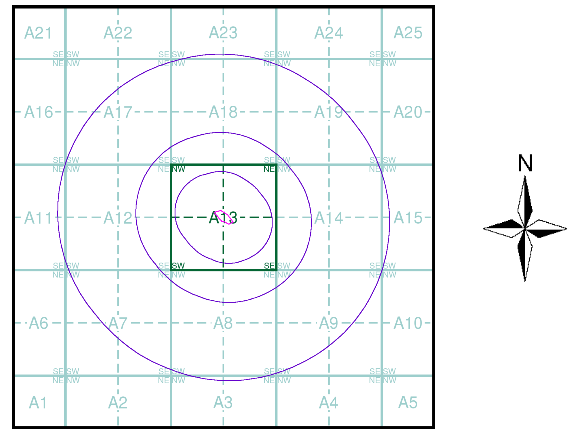


Historical Map - Slice A



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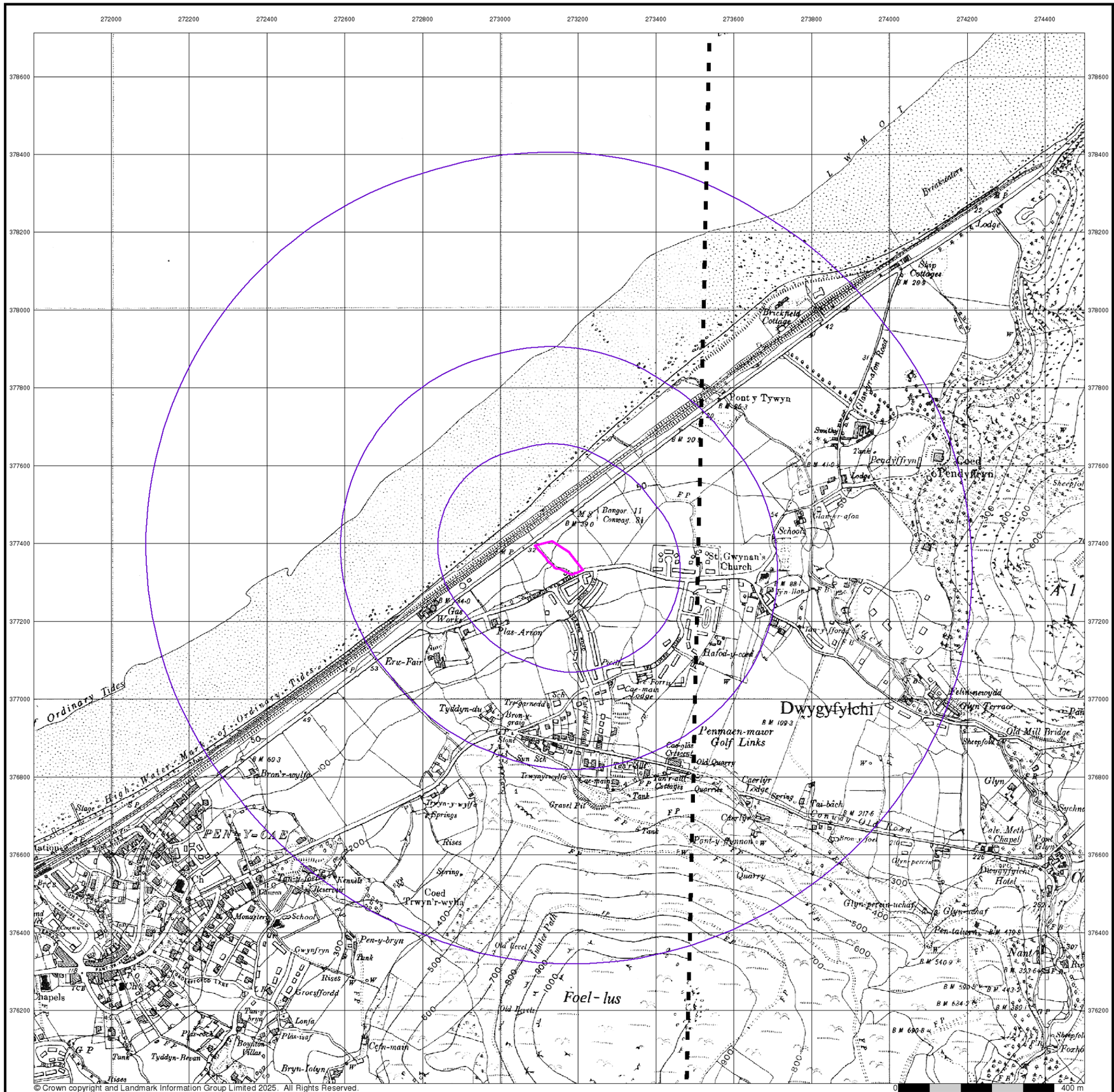

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Caernarvonshire

Published 1953

Source map scale - 1:10,560

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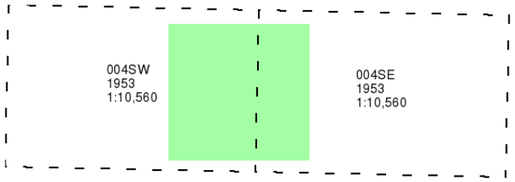
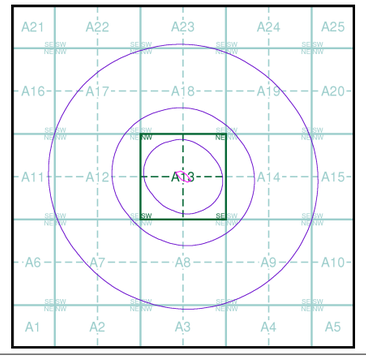


Historical Map - Slice A



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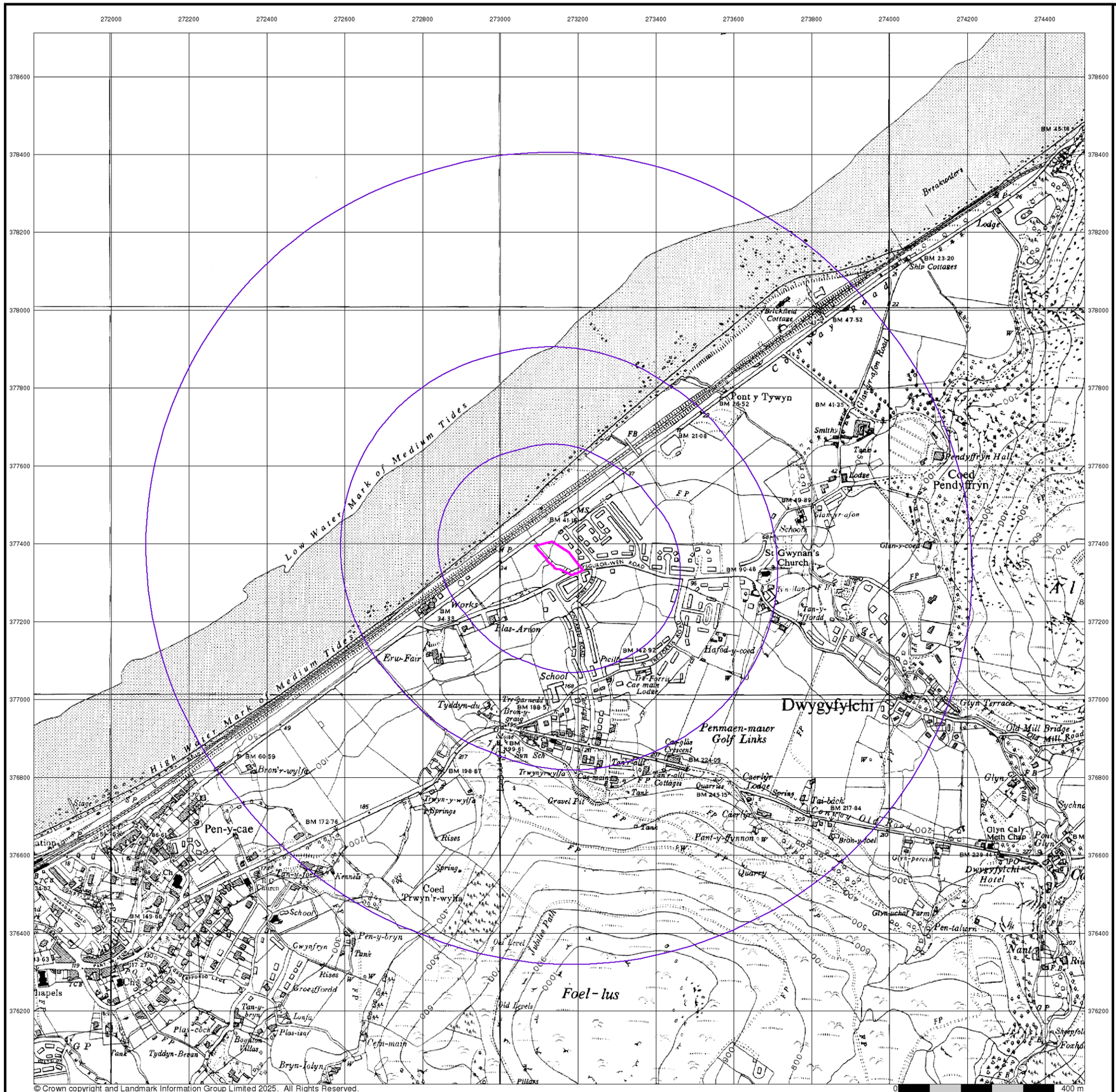

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Ordnance Survey Plan

Published 1964

Source map scale - 1:10,000

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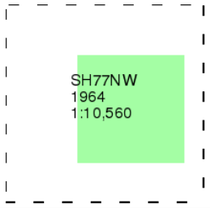
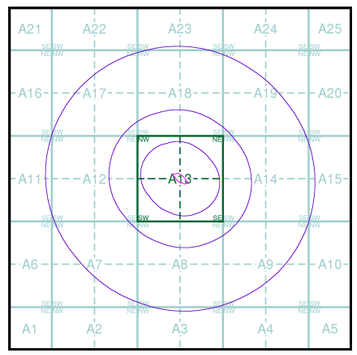


Historical Map - Slice A



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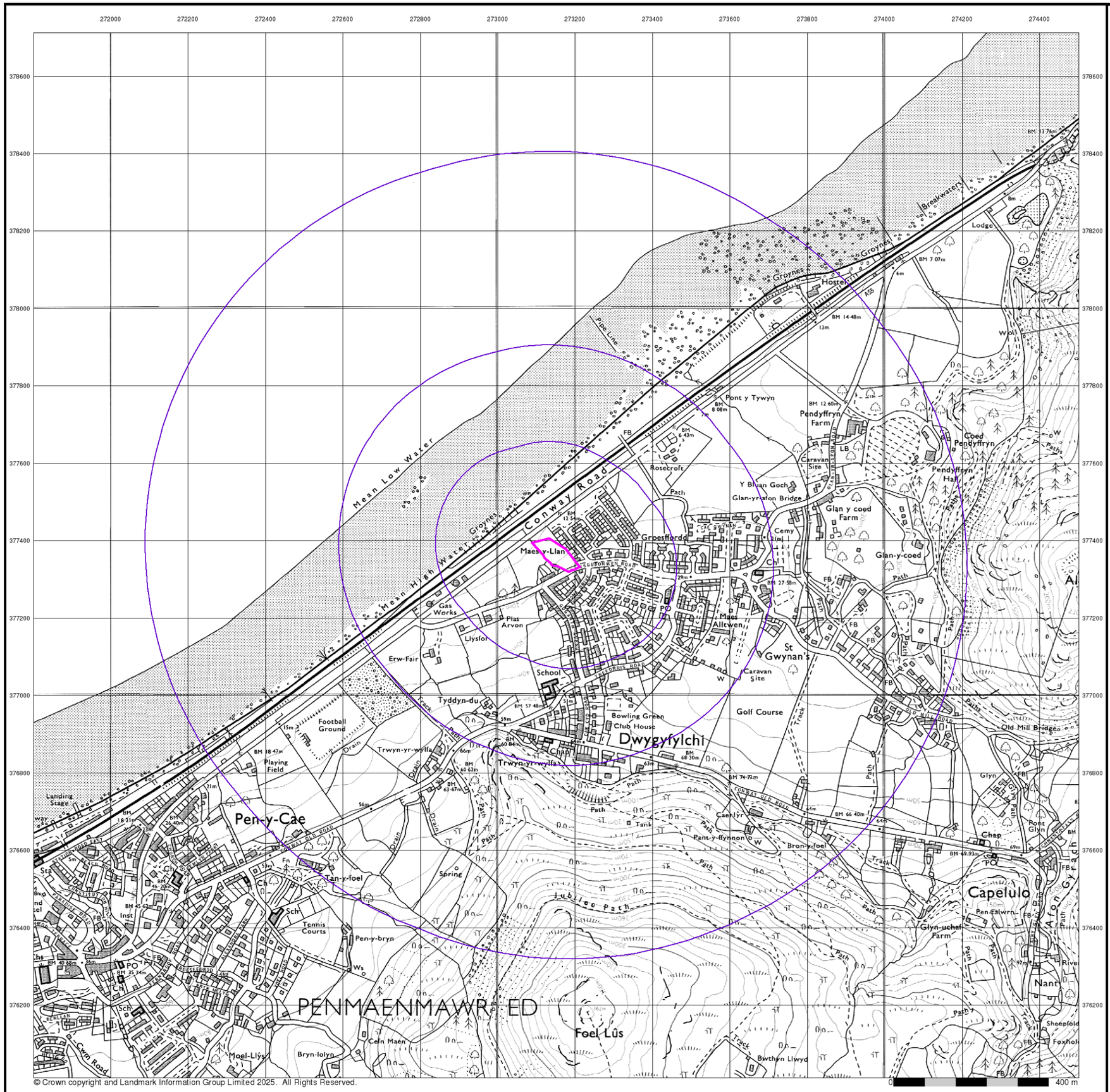

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Ordnance Survey Plan

Published 1975

Source map scale - 1:10,000

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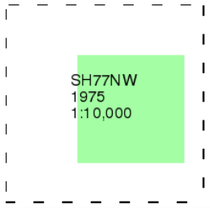
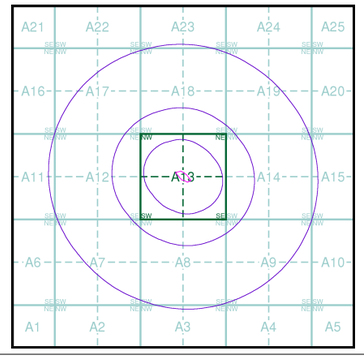


Historical Map - Slice A



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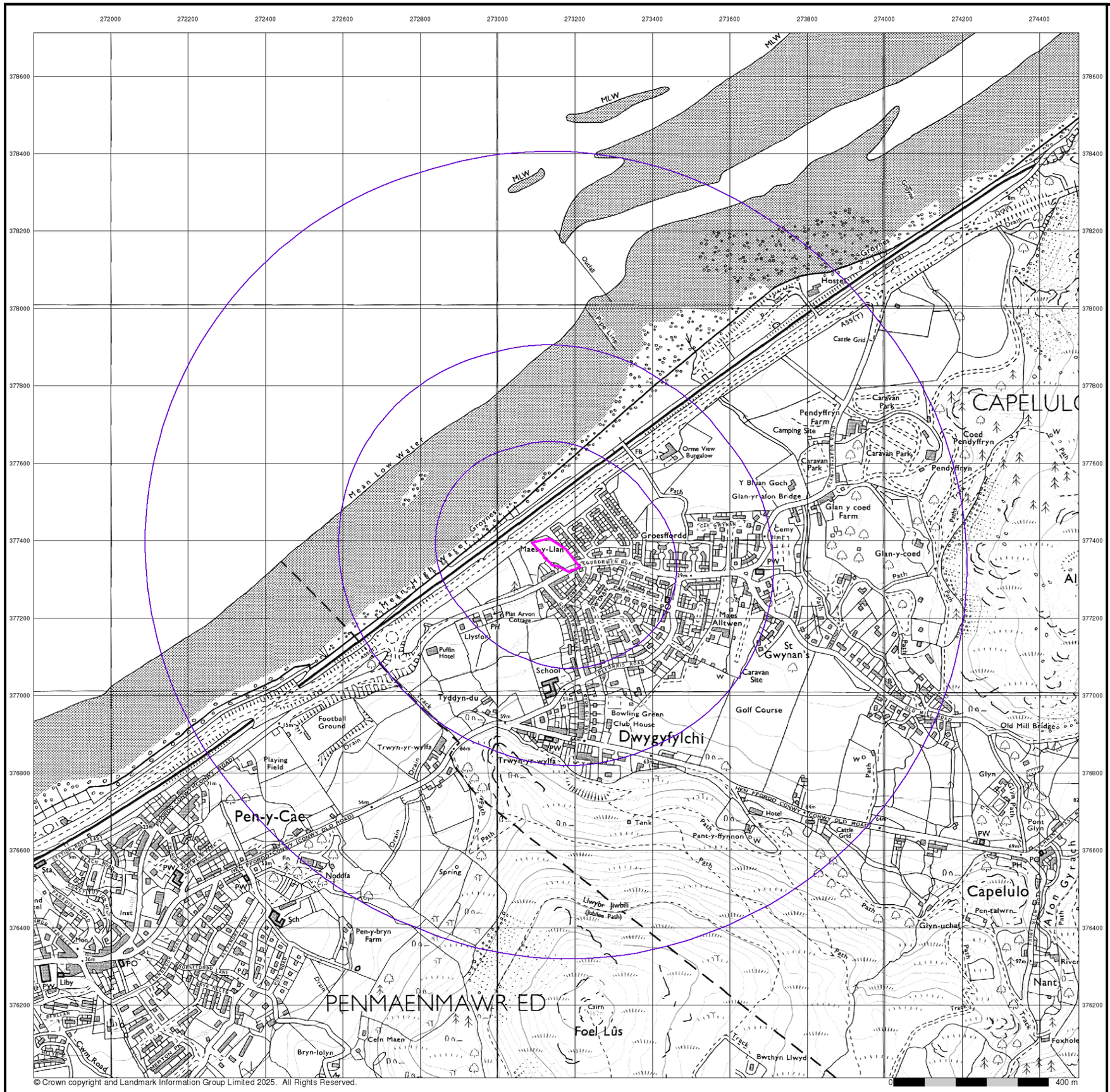


Envirocheck®

LANDMARK INFORMATION GROUP®

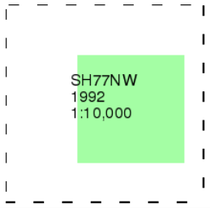
Ordnance Survey Plan

Published 1992

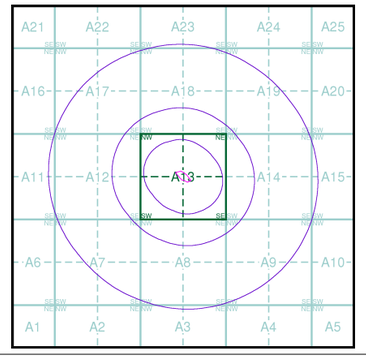
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

Landmark® INFORMATION GROUP

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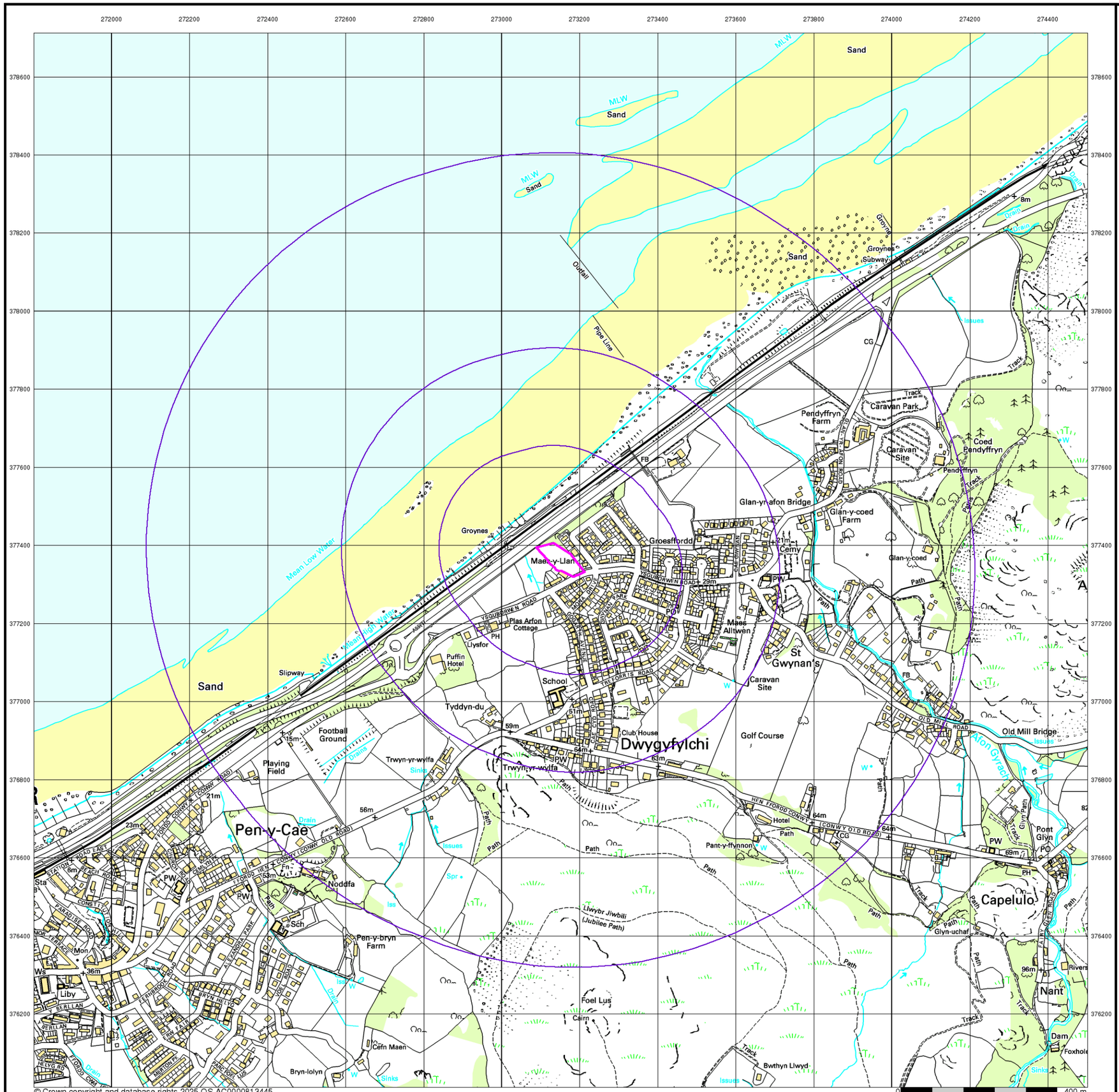
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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10k Raster Mapping

Published 2000

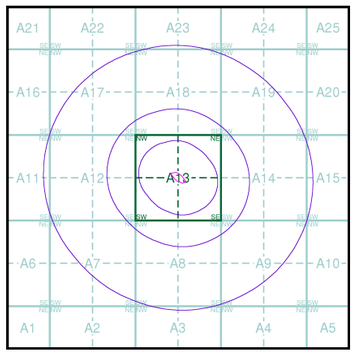
Source map scale - 1:10,000

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)

SH77NW
2000
1:10,000

Historical Map - Slice A



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Order Details

Order Number:	366982679_1_1
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Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	1000

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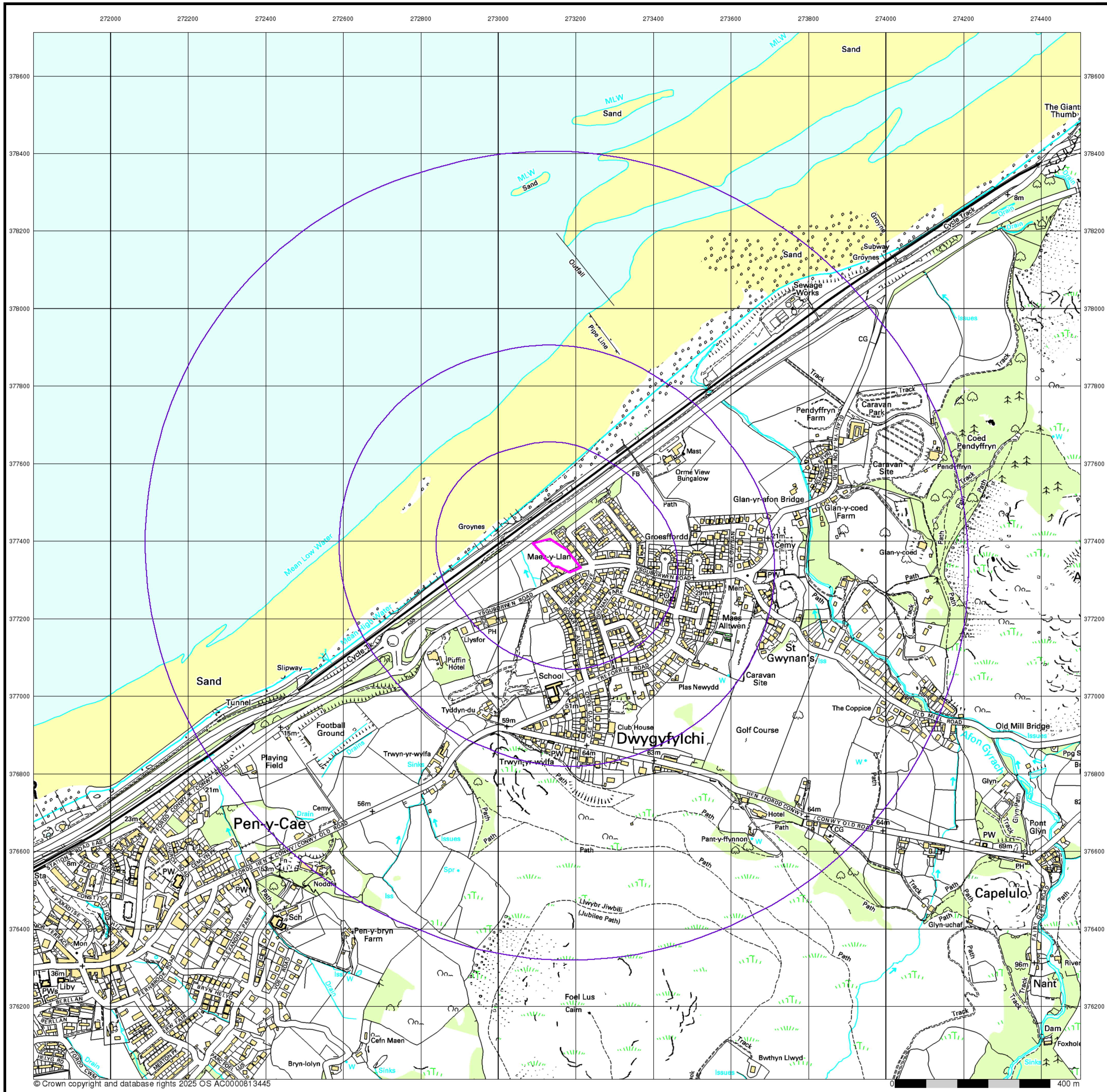

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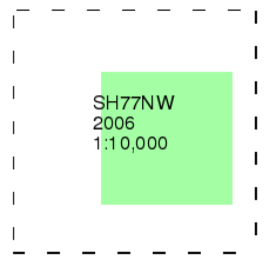
10k Raster Mapping

Published 2006

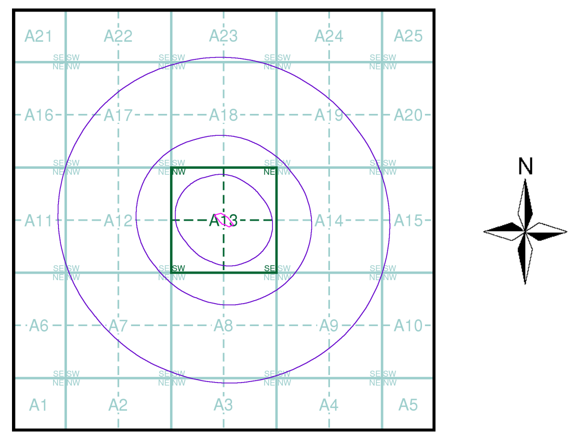
Source map scale - 1:10,000

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)



Historical Map - Slice A



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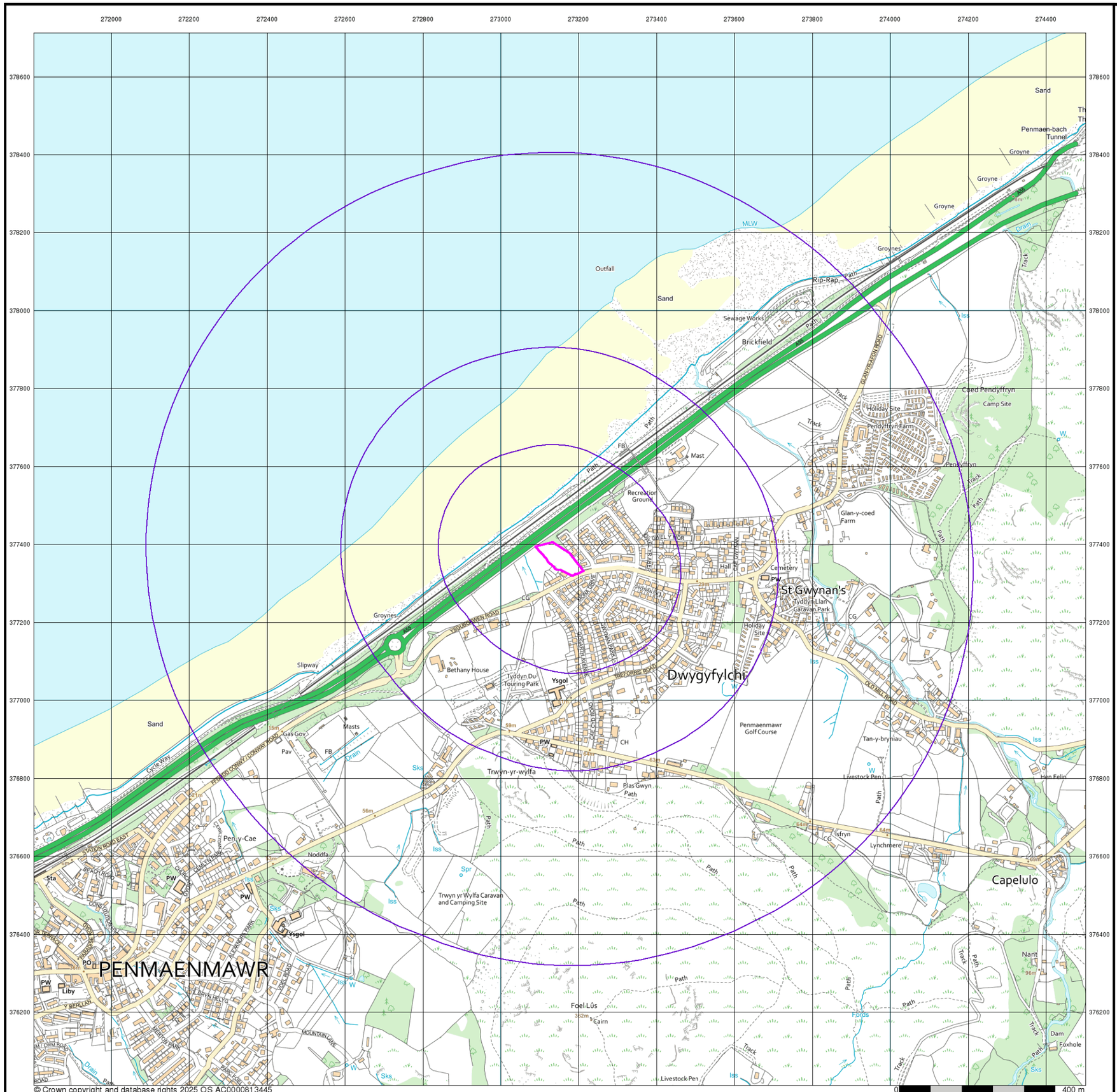

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VectorMap Local

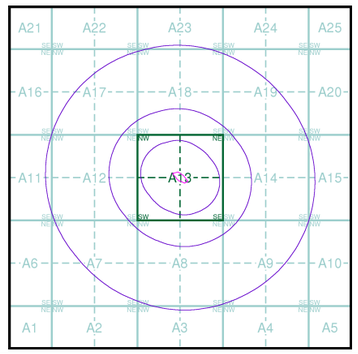
Published 2024

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)

Historical Map - Slice A



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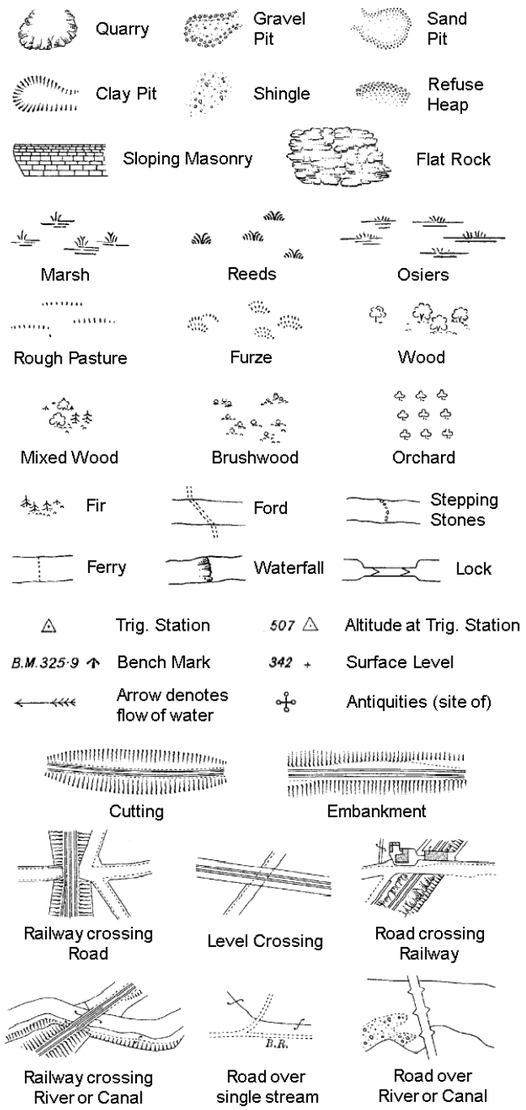
Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

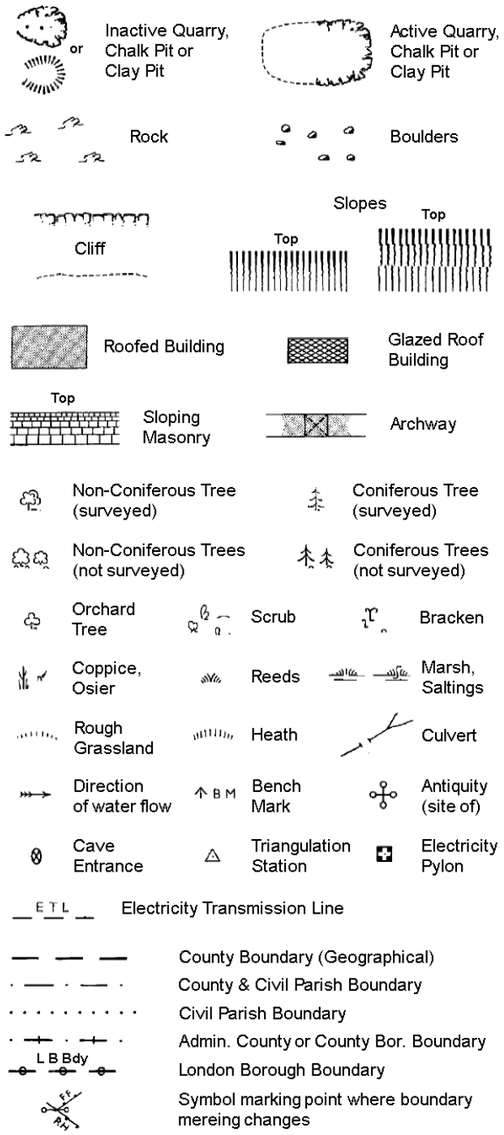
Administrative County & Civil Parish Boundary

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

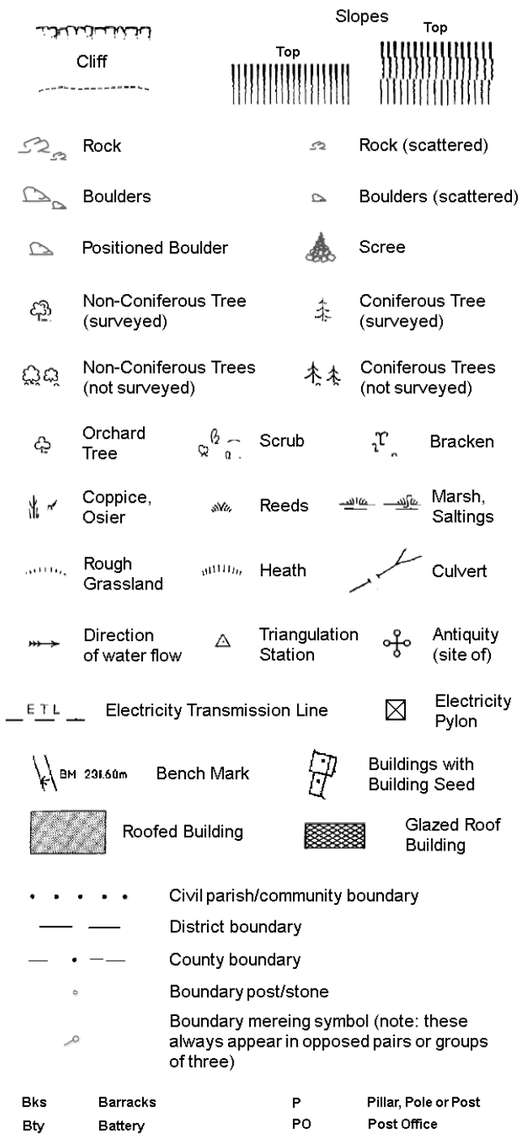
Admin. County or County Bor. Boundary

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

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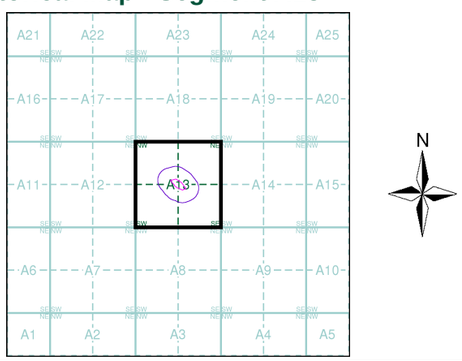
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Caernarvonshire	1:2,500	1889	2
Caernarvonshire	1:2,500	1900	3
Caernarvonshire	1:2,500	1913	4
Ordnance Survey Plan	1:2,500	1966	5
Supply of Unpublished Survey Information	1:2,500	1973	6
Additional SIMs	1:2,500	1977	7
Ordnance Survey Plan	1:2,500	1992	8
Large-Scale National Grid Data	1:2,500	1995	9
Historical Aerial Photography	1:2,500	2000	10

Historical Map - Segment A13



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

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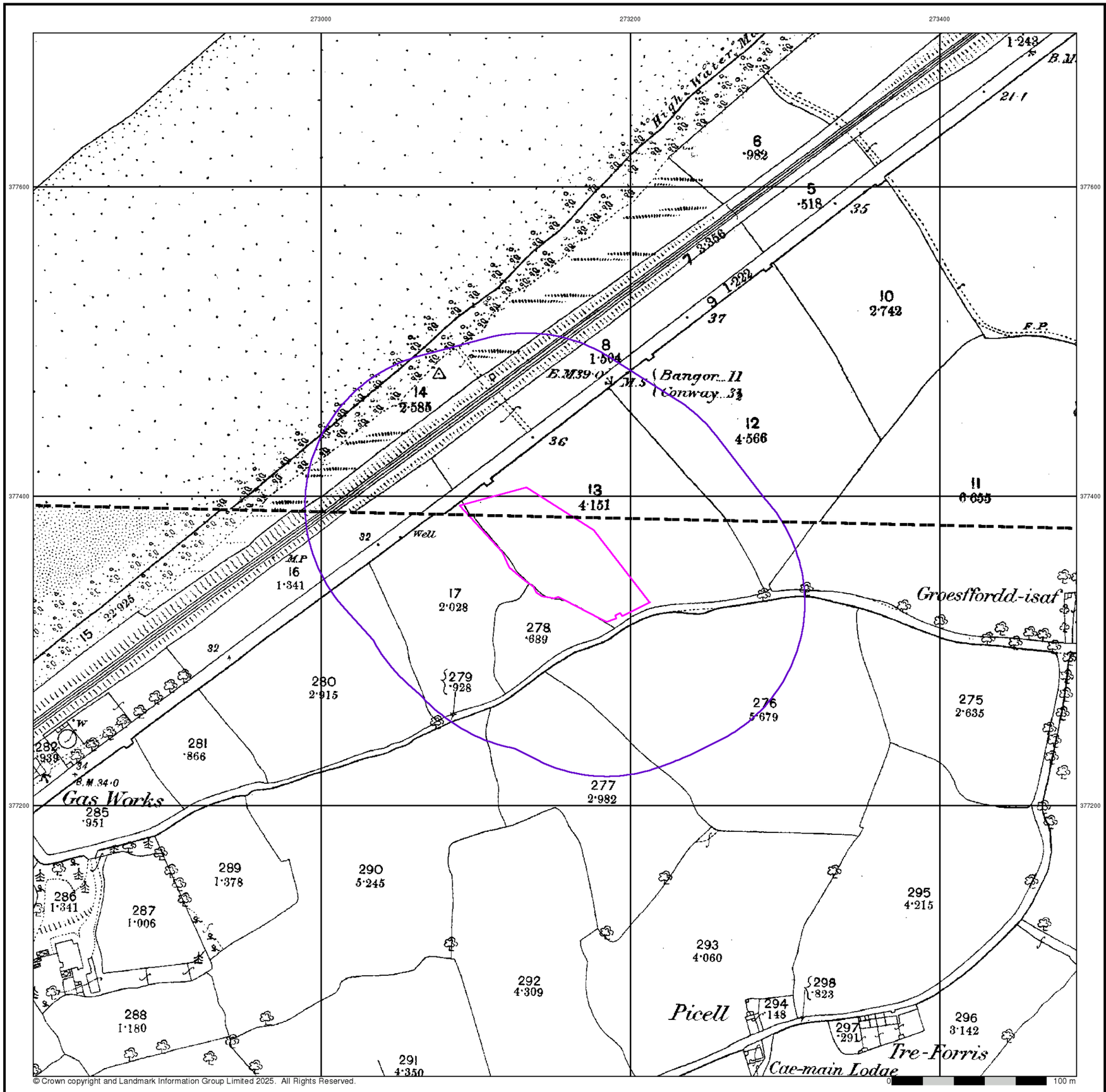

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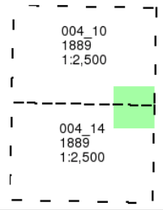
Caernarvonshire

Published 1889

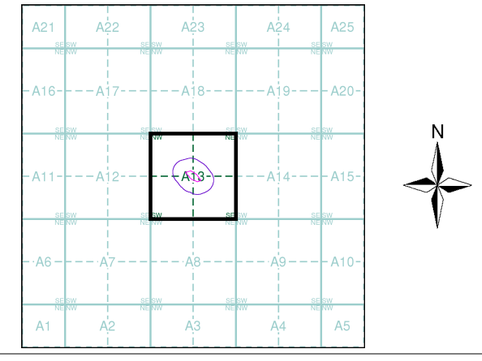
Source map scale - 1:2,500

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



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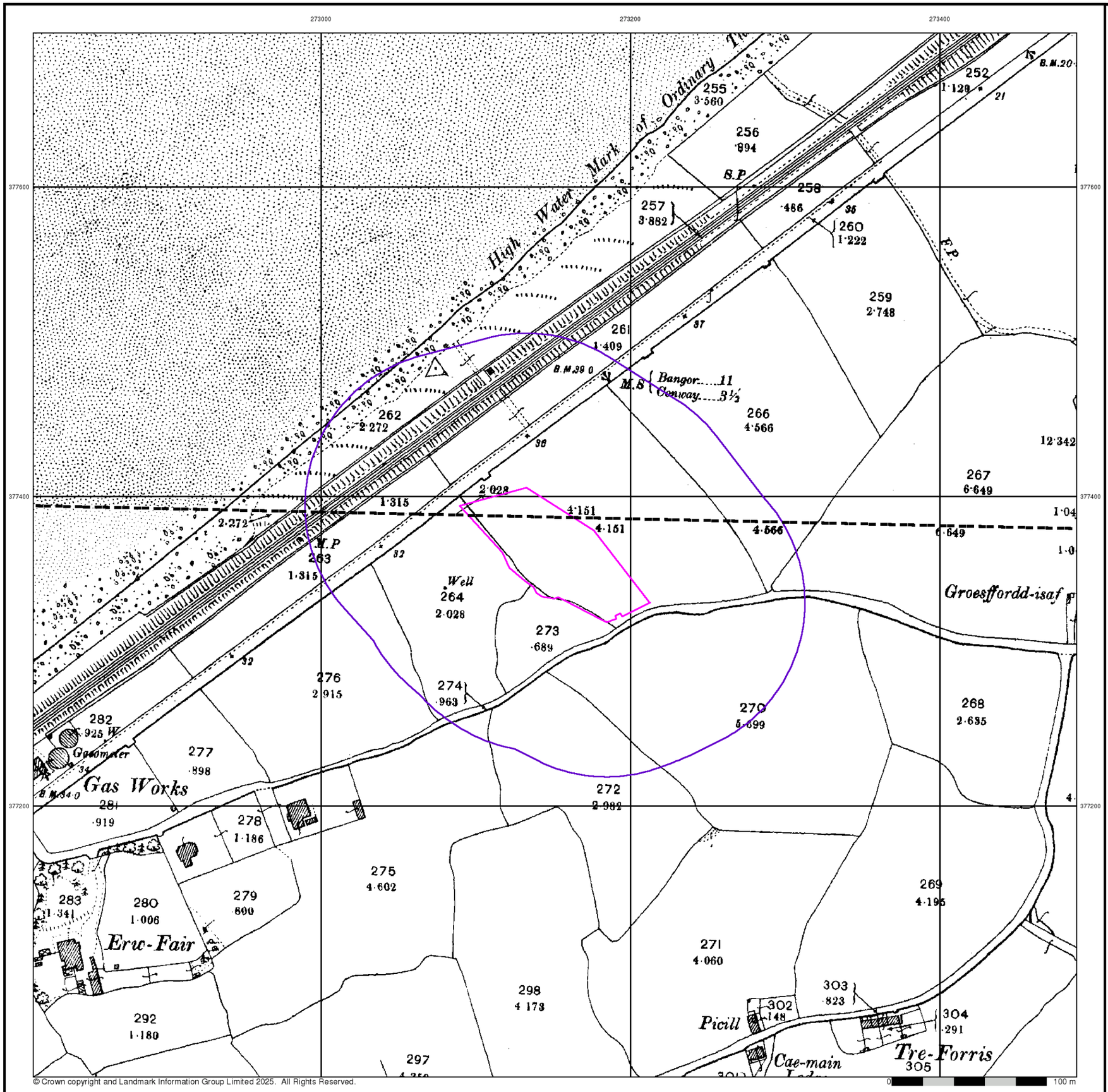

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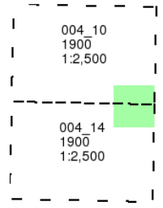
Caernarvonshire

Published 1900

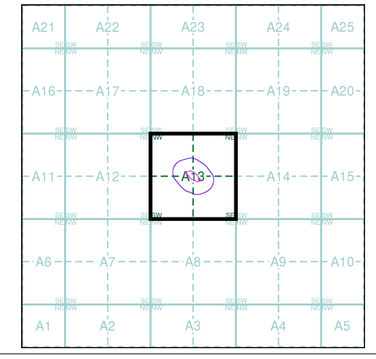
Source map scale - 1:2,500

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

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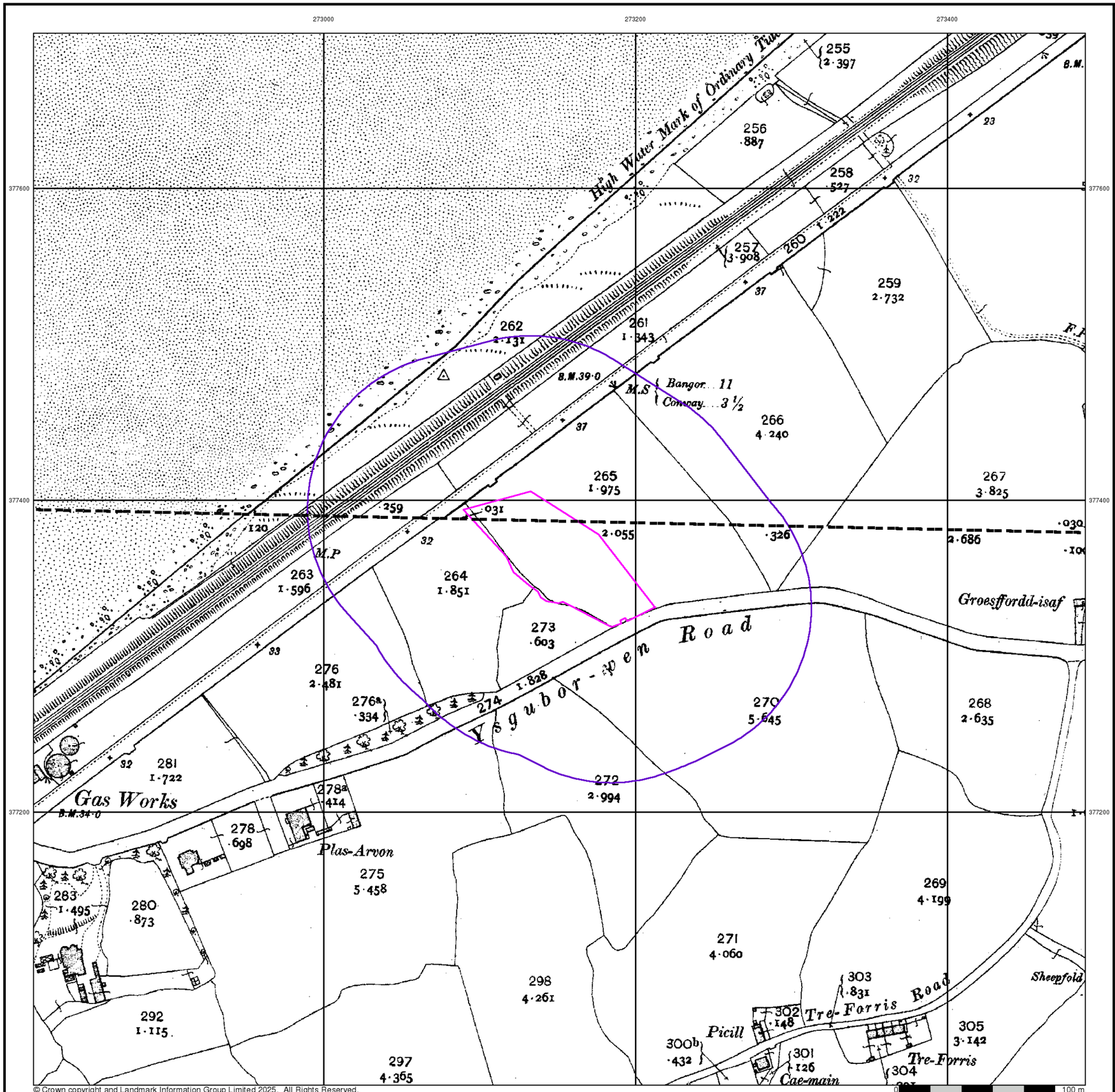

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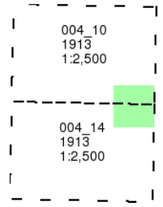
Caernarvonshire

Published 1913

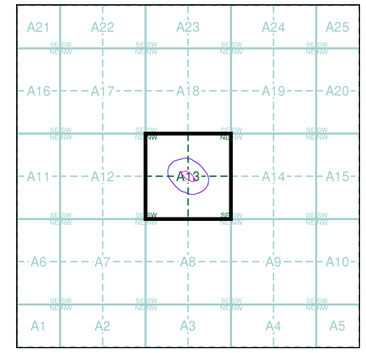
Source map scale - 1:2,500

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



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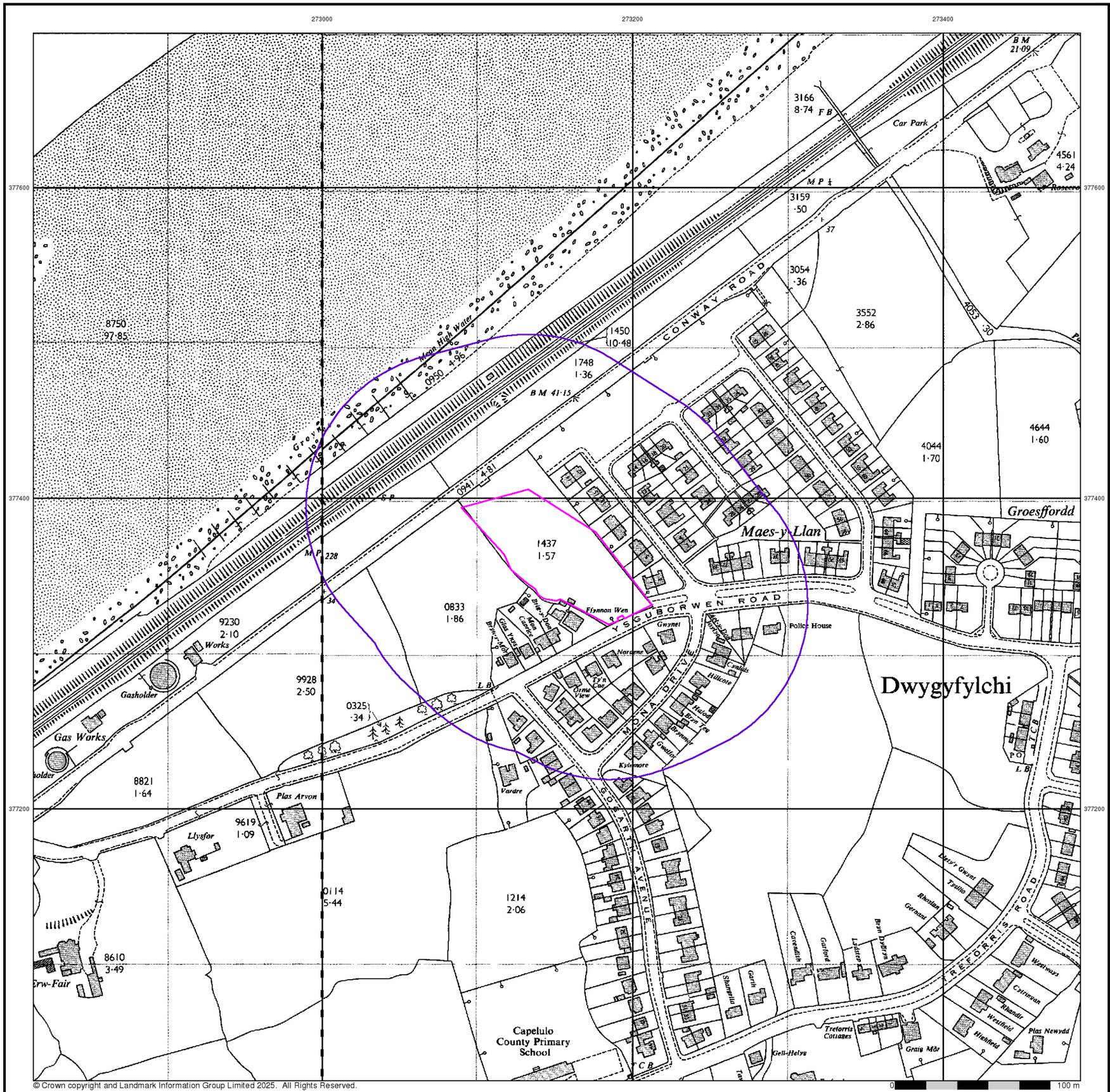

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Ordnance Survey Plan

Published 1966

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.

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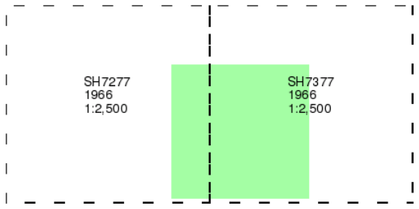
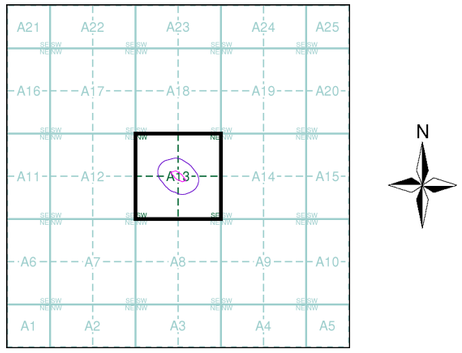


Historical Map - Segment A13



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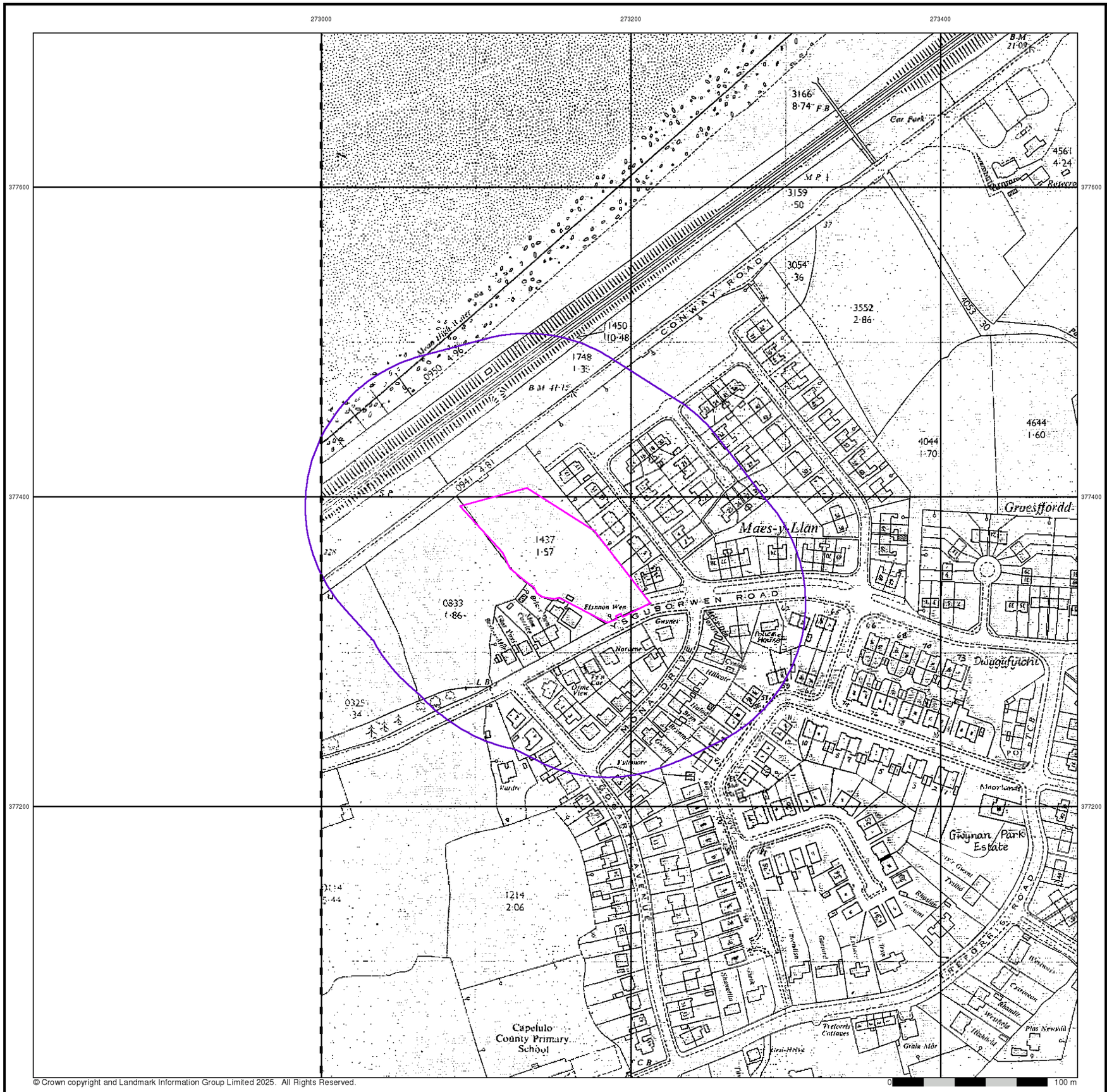

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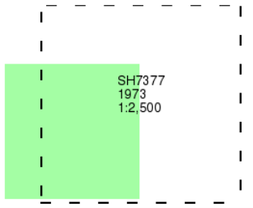
Supply of Unpublished Survey Information

Published 1973

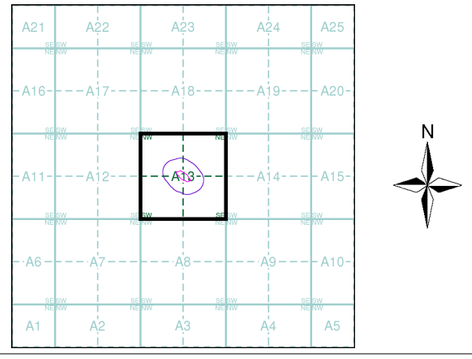
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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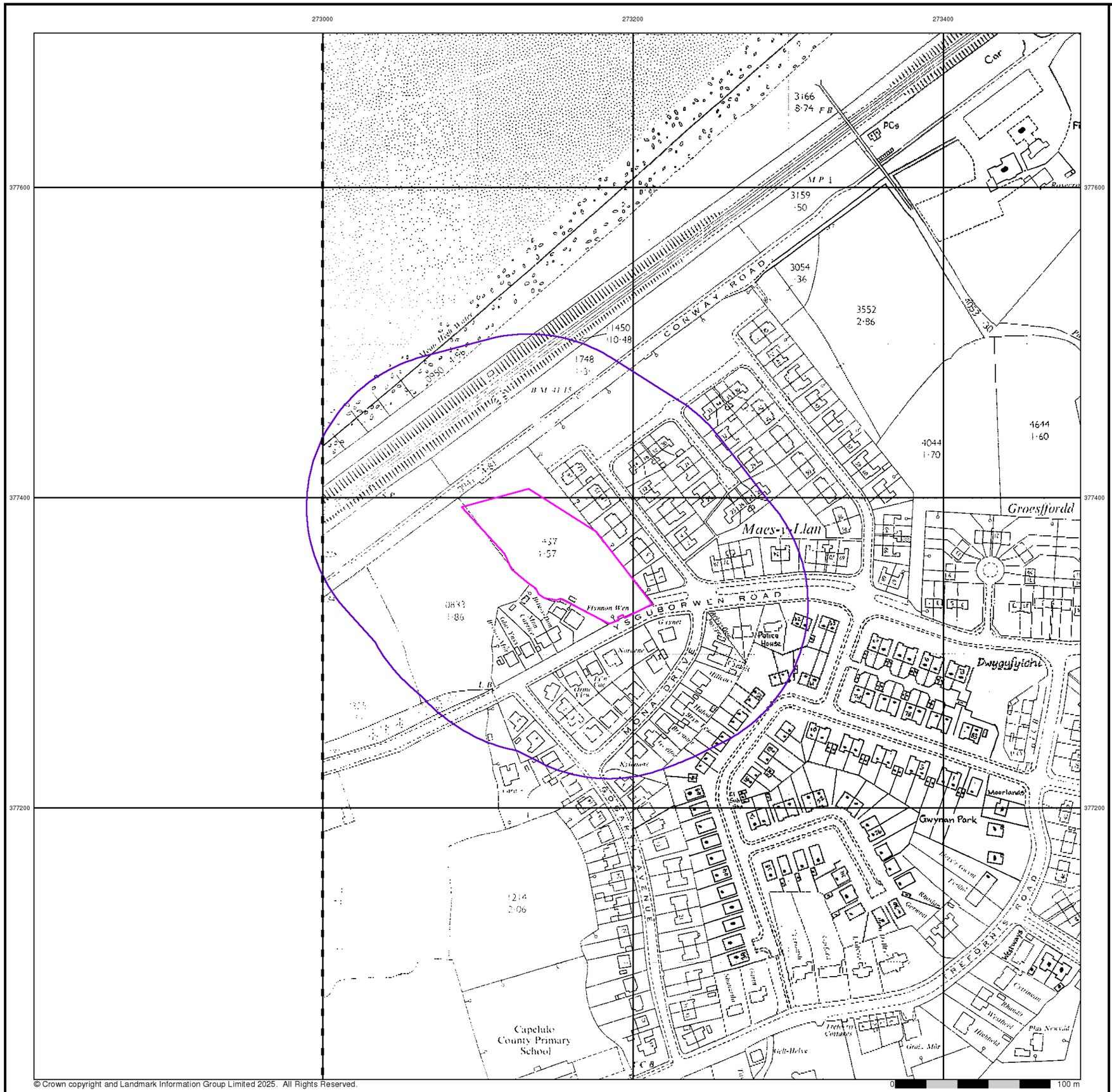

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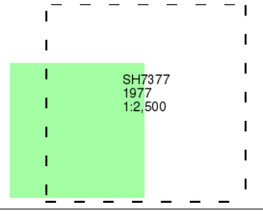
Additional SIMs

Published 1977

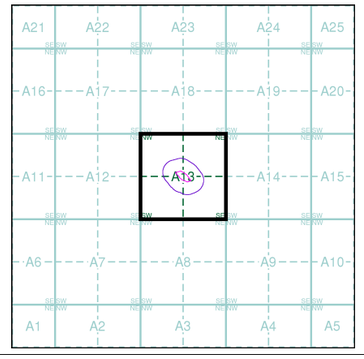
Source map scale - 1:2,500

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



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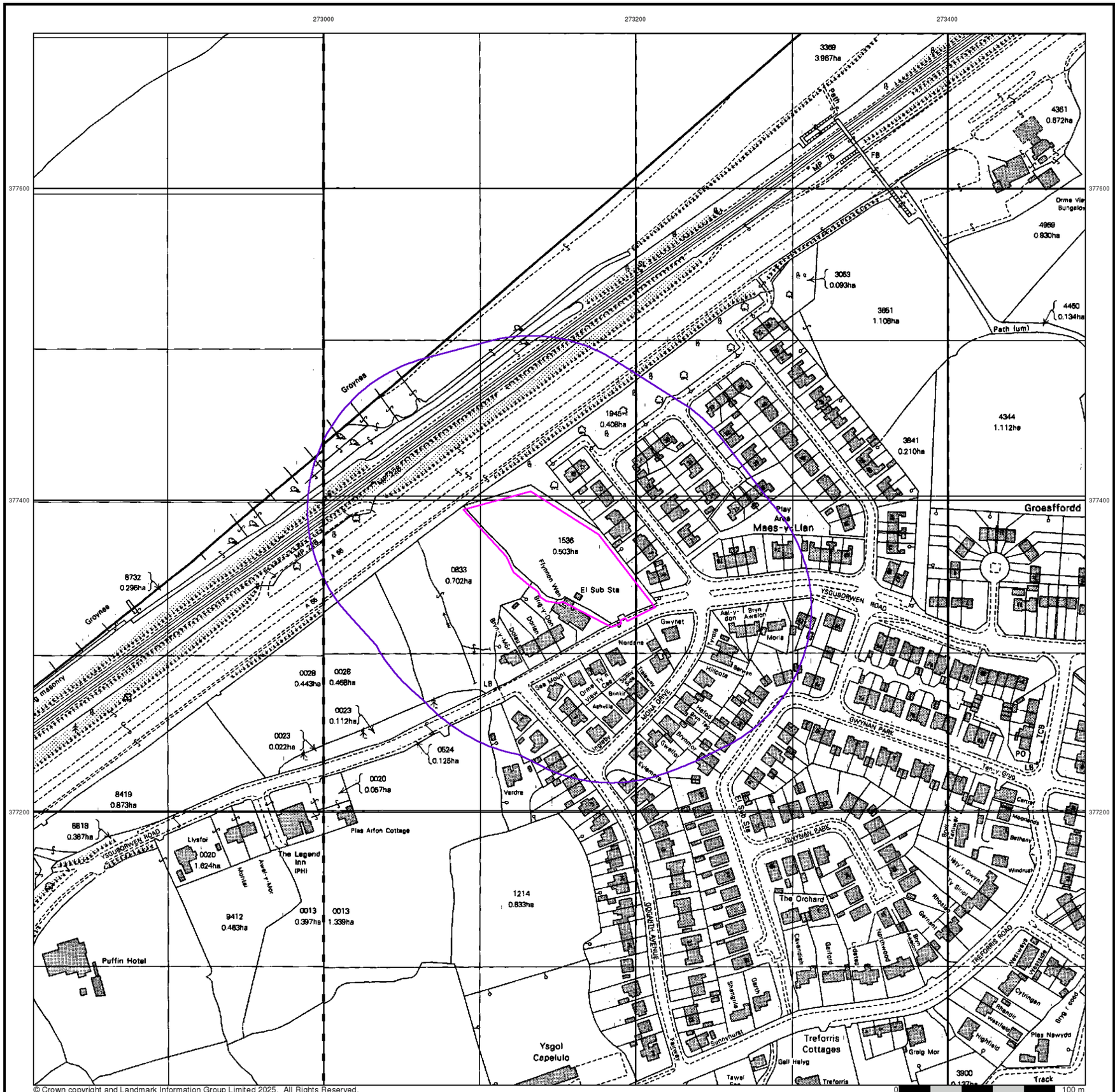
Web: www.envirocheck.co.uk



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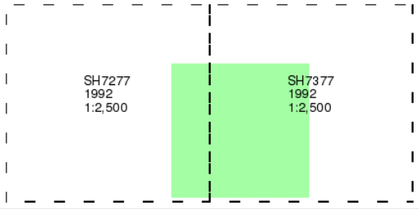
Ordnance Survey Plan

Published 1992

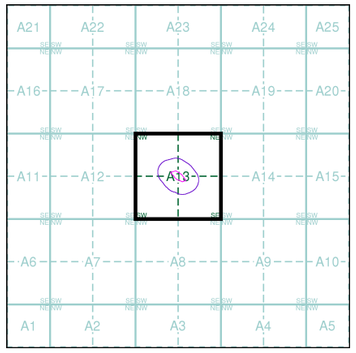
Source map scale - 1:2,500

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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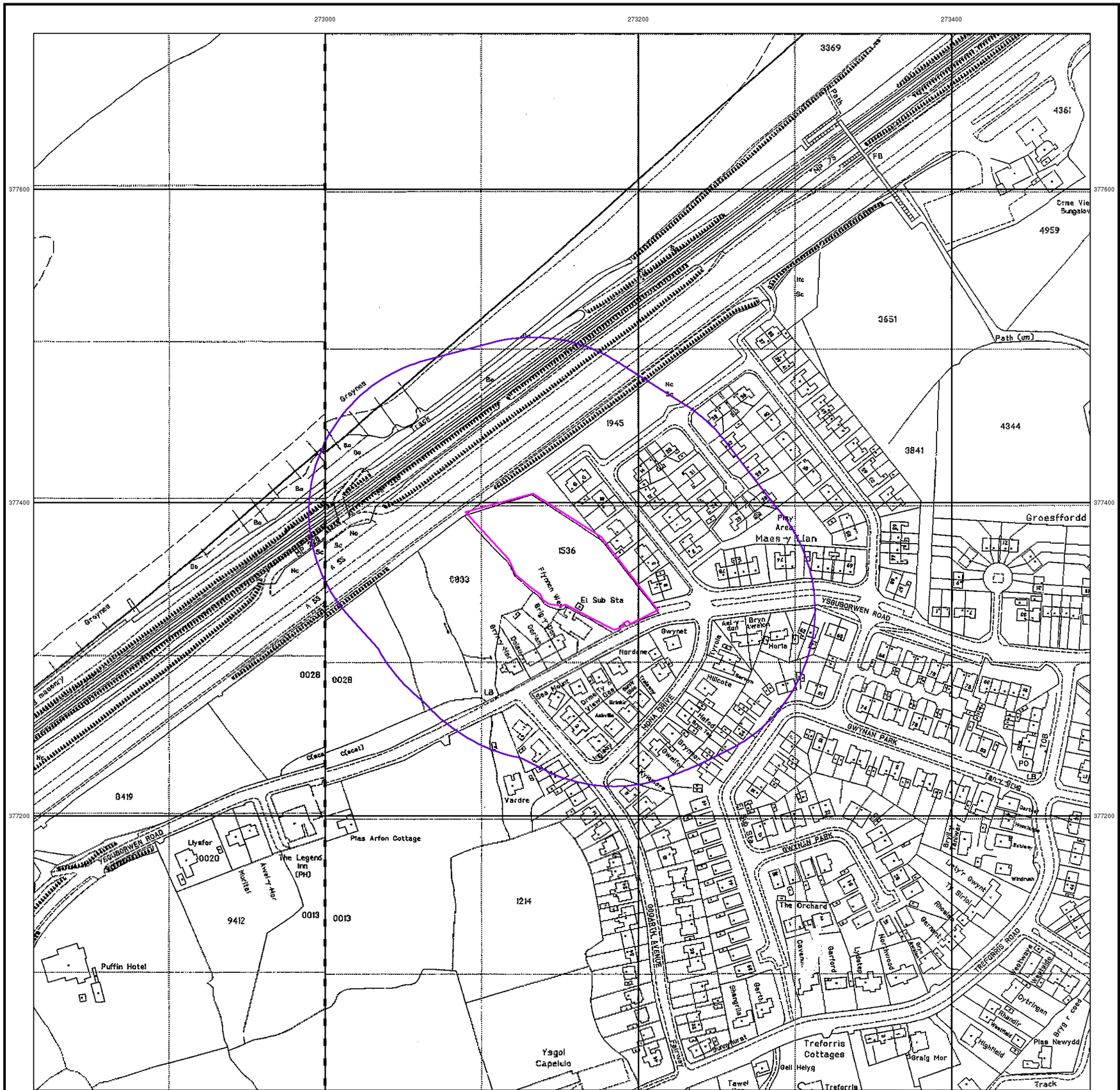

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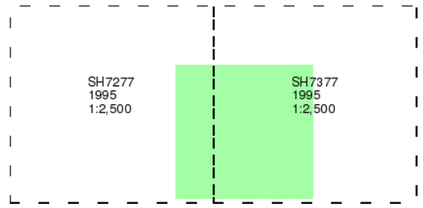
Large-Scale National Grid Data

Published 1995

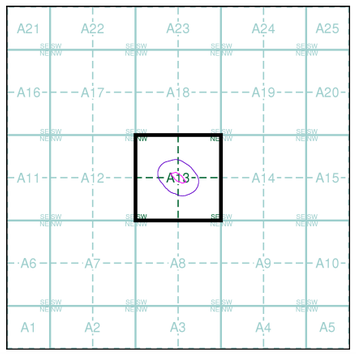
Source map scale - 1:2,500

'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)



Historical Map - Segment A13



Order Details

Order Number:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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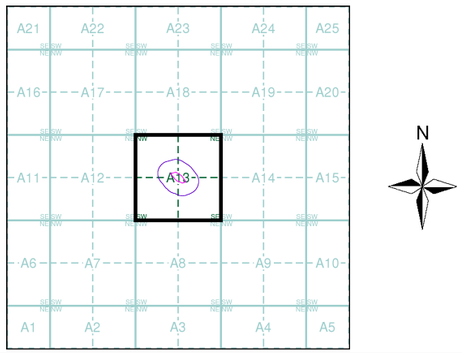
Historical Aerial Photography

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:	366982679_1_1
Customer Ref:	6005
National Grid Reference:	273150, 377360
Slice:	A
Site Area (Ha):	0.5
Search Buffer (m):	100

Site Details

Land Off Ysgoborwen Road, Dwygyfylchi, Penmaenmawr, LL34 6PU

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