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Geotechnical & Geoenvironmental Specialists

Draft Geotechnical and Geoenvironmental Report

Site: Land West of New Mill Road, Cardigan, SA43 1NE

Prepared For: Wales and West Housing Association

Issue Date: May 2023

Job No: 17706

info@terrafirmawales.co.uk

www.terrafirmawales.co.uk

V3

REPORT TITLE	**:**	**Draft Geotechnical and Geoenvironmental Report: Proposed Residential Development, Land West of New Mill Road, Cardigan, SA43 1NE.**
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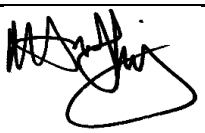
	Name	Signature
Prepared	**Morgan Peregrine** BSc (Hons), MSc, FGS, Geolsoc	
Checked	**Michael Watkins** MESci, FGS	
Approved	**Gwyn Lake** BSc (Hons). PhD, CGeol, FGS	

Executive Summary

<table>
<tr><td>Site Location and Proposed Development</td><td>Wales and West Housing Association (the Client) is proposing a mixed use development of residential and commercial buildings covering an area of 3.94 hectares east and west of New Mill Road, Cardigan, SA43 1NE. The scope of this investigation covers the 2.09 hectares of land to the west of New Mill Road</td></tr>
<tr><td>Site History</td><td>Records on the site begin in 1888 and the site began as part of agricultural fields, it has remained so up to present date. The surrounding area began as agricultural fields but has been developed into both residential and commercial buildings.</td></tr>
<tr><td>Geology</td><td>The 1:10,560 scale British Geological Map of the area (Old Series 58) was consulted for geology underlying the site. The site is shown to be underlain by Devensian Till overlying Dinas Island Formation bedrock.</td></tr>
<tr><td>Radon</td><td>The Envirocheck Report (Annex A) details that basic radon protective measures are required for new developments on the investigation site.</td></tr>
<tr><td>Ground Conditions</td><td>
<table>
<tr><th colspan="3">Depth (m)</th><th>Thickness (m)</th><th>Stratum</th></tr>
<tr><td>0.00</td><td>-</td><td>0.2 – 0.3</td><td>0.2 – 0.3</td><td>Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.</td></tr>
<tr><td>0.2 – 0.3</td><td>-</td><td>0.4 – 0.9</td><td>0.1 – 0.6</td><td>Soft brown and yellowish brown slightly fine sandy CLAY.</td></tr>
<tr><td>0.4 – 0.9</td><td>-</td><td>2.2 – 3.0</td><td>1.5 – 2.2</td><td>Firm to stiff blueish grey mottled brown slightly fissured CLAY.</td></tr>
<tr><td>2.2 – 3.0</td><td>-</td><td>>4.0/>4.2</td><td>Unconfirmed</td><td>Stiff blueish grey slightly fissured CLAY.</td></tr>
</table>
</td></tr>
<tr><td>Contamination of Concern</td><td>All substances tested for were found to be present at concentrations below their respective human health threshold level.</td></tr>
<tr><td>Ground Gas Risk Assessment</td><td>It is provisionally recommended that the site is classified as ‘Gas Characteristic Situation 2’ in line with recommendations provided in CIRIA C665.
Upon completion of the full six rounds of monitoring the recommendation will be reviewed in a letter report and if necessary amended.</td></tr>
<tr><td>Foundation Solution</td><td>It is recommended that mass concrete strip or trench fill foundations be used; founded within the firm to stiff blueish grey mottled brown slightly fissured CLAY at an approximate depth from 1.0m to 2.2m below the existing ground level. An allowable bearing pressure of 100kN/m2 may be used for strips up to 750mm wide.

Foundations must sit at least 200mm within the founding horizon.

For the given foundation solutions and bearing pressure, maximum total settlements of 25mm should result with differential movements of the superstructure not exceeding 1:750</td></tr>
</table>

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SECTION 1 Introduction and Proposed Development

1.1 Introduction

Wales and West Housing Association (the Client) is proposing a mixed use development of residential and commercial buildings covering an area of 3.94 hectares east and west of New Mill Road, Cardigan, SA43 1NE. The scope of this investigation covers the 2.09 hectares of land to the west of New Mill Road

TFW Group Limited (Terra Firma) have been commissioned by the Client to undertake a geoenvironmental assessment and geotechnical investigation of the site.

The main objectives of the geoenvironmental assessment programme are:

- Investigate the potential human health and environmental liabilities at the site associated with any contamination
- Provide a summary of the human health and environmental conditions at the site, together with any necessary further intrusive works and / or remediation works to render the site fit for its intended use

The main objectives of the geotechnical site investigation are:

- Investigated the type, strength and bearing characteristics of the shallow superficial and underlying solid geology
- Investigate the risk, if any, from historical shallow underground mining features
- Provide engineering foundation and floor slab recommendations for the proposed development
- Provide infiltration rates and stormwater drainage viability.
- Provide recommendations regarding any other geotechnical aspects pertaining to the development

In order to achieve the above objectives, Terra Firma carried out an assessment programme including a review of existing data, followed by a field investigation to collect geotechnical and geoenvironmental data from selected locations.

1.2 Limitations and Exceptions of Investigation

The Client has requested that a Geoenvironmental Site Assessment (GSA) and Geotechnical Investigation (GI) be performed to enable the outlined main objectives.

The GSA and GI were conducted, and this report has been prepared for the sole internal reliance of the Client and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma. If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill. The report represents the findings and opinions of experienced geoenvironmental and geotechnical consultants. Terra Firma does not provide legal advice and the advice of lawyers may be required.

The subsurface geological profiles, any contamination and other plots are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

1.3 Quality Assurance

The quality and environmental aspects of the assessment comply with Terra Firma business management system which is UKAS Accredited to ISO 9001:2015 and ISO 14001:2015 standards.

SECTION 2 Review of Existing Data

2.1 Physical Setting and Current Site Use

The development site is irregular in shape and locates land just off New Mill Road, Cardigan, SA43 1NE. The site centres on an approximate National Grid Reference of 218910, 247000, occupying a plan area of approximately 2.09 Hectares.

The site currently comprises of an agricultural field covered in grass. The borders of the site are lined with medium sized trees on all sides. New Mill Road forms the site's east and south boundaries. Residential buildings are located to the immediate west and north of the site. The A487 lies 25m south of the site. Field land occupies the majority of the land to the east and south.

The site elevation is approximately 51m AOD slightly sloping down to the northwest.

The site location can be seen on **Figure 2.1.**

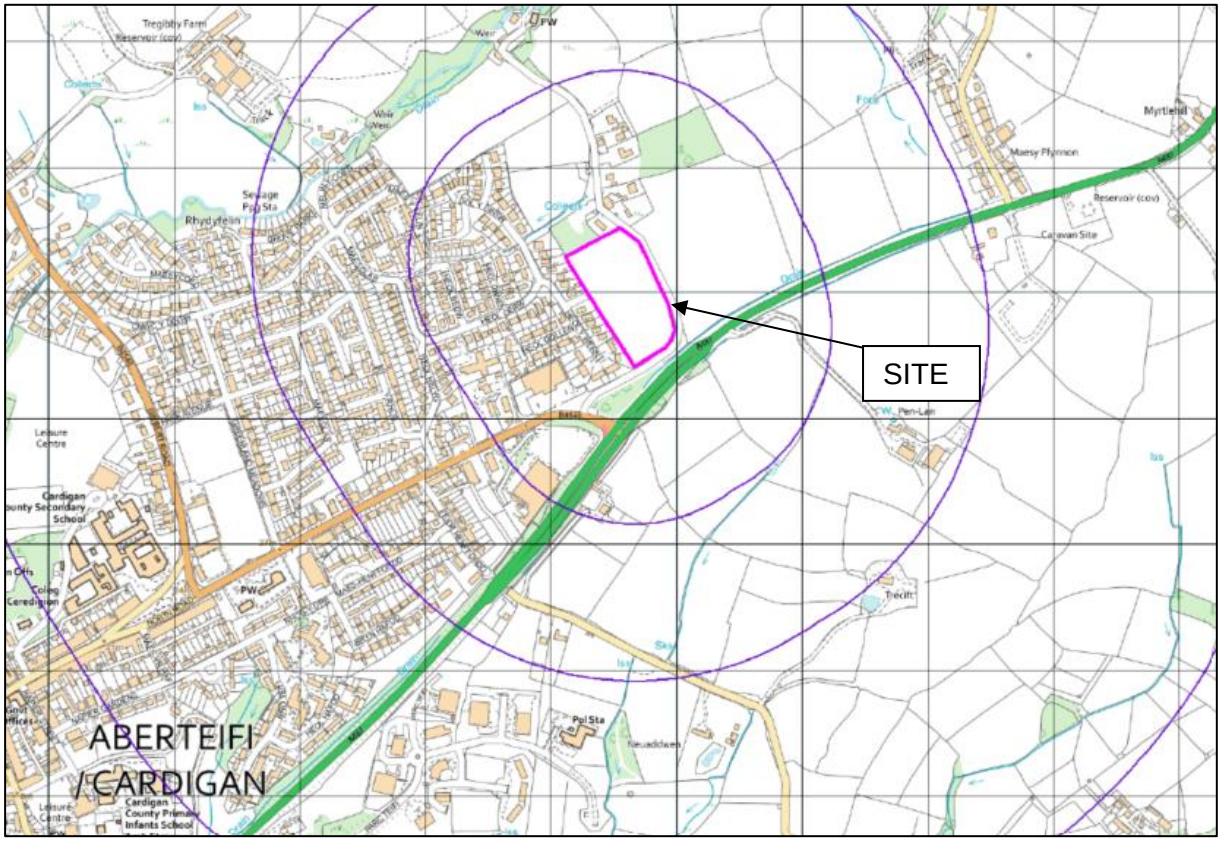


Figure 2.1 Site Location

2.2 Site History

Historical maps of the site have been obtained in an Envirocheck Report, provided by Landmark Information Group. The history plans are supplied in **Annex A** of this report, and the most relevant editions are summarised in **Table 2.1**. Distances are approximate, and any changes in-between map editions may not be recorded.

Table 2.1 Historical Development from Map Information

Map Edition & Scale	Key Features on Site	Key Features off Site
1888-1890 1:2500	The site is located in an agricultural field.	The surrounding area consists mainly of more agricultural fields. There is a water reservoir 87m to the southwest, New Mill Road runs down the immediate east and south borders. A main road lies 25m south of the site. An old quarry lies 305m to the southeast, and a sand pit is 348m northwest.
1907 1:10560	No significant changes on site.	No significant changes to the area surrounding the site.
1938-1953	No significant changes on site.	There has been an increase in residential buildings along the main road 410m west of the site. West of the site lies a clay pit (648m) and a brickwork (935m).
1963 1:10000	No significant changes on site.	No significant changes to the area surrounding the site.
1965-1978 1:2500	No significant changes on site.	Several single domestic buildings have been built 5m north of the site along New Mill Road. A garage now lies 120m southwest. Domestic estates have been developed 220m to the northeast, furthermore a large development of domestic and commercial buildings has taken place 300m east of the site.
1980-1992 1:2500	No significant changes on site.	The houses directly on the east border of the site have been developed along Heol -Y-Wern. A depot has also been built 163m east of the site. The link to the A487 30m south of the site has also been built.
1995 1:2500	No significant changes on site.	A Tesco store and petrol station has replaced the domestic buildings that were there before, 160m southwest of the site.
2000 1:10000	No significant changes on site.	There has been extensive development of domestic estates 166m west of the site.
2005 1:10000	No significant changes on site.	No significant changes to the area surrounding the site.
2013 1:10000	No significant changes on site.	No significant changes to the area surrounding the site.
2023 1:10000	The site remains unchanged.	The surrounding area remains unchanged.

2.3 Geological Setting

2.3.1 Geology

The 1:10,560 scale British Geological Map of the area (Old Series 58) was consulted for geology underlying the site. The site is shown to be underlain by Devensian Till overlying Dinas Island Formation bedrock. Detailed stratigraphical information is provided in **Table 2.3**.

Table 2.2 Detailed Stratigraphical Information

Period	Group	Formation
Ordovician Period		Dinas Island Formation – Sandstone and mudstone

Strata are typically dipping to the northwest in the local area. There are no dip angles provided on the geological maps in the local area.

Superficial deposits are recorded as Devensian Till. Till is unsorted and unstratified drift, generally over consolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. It consists of a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape (diamicton).

Made ground is not anticipated at the site.

2.3.2 BGS Borehole Information

BGS borehole records show a 3m deep trial pit 48m south of the site. BGS reference Sn14ne8. There is also record of a 10.45m deep borehole 215m southeast of the site, BGS reference Sn14ne22. The findings of the two exploratory locations are as follows:

Trial Pit:
0.0 – 0.3 MADE GROUND.
0.3 – 3.0 Firm to stiff brown grey sandy silty CLAY with decayed vegetation and occasional boulders.

Cable Percussion Borehole:
0.0 – 0.15 Silty TOPSOIL.
0.15 – 3.0 Firm to stiff light grey sandy CLAY.
3.0 – 10.45 Stiff brown grey silty CLAY with occasional pea gravel.

2.3.3 Radon

The Envirocheck Report (**Annex A**) details that basic radon protective measures are required for new developments on the investigation site.

2.3.4 Mining

The site situates outside the South Wales coal fields.

There are no relevant BGS mineral sites as recorded within 250m of the site.

2.3.5 Natural Hazards

The underlying geology is not prone to dissolution due to the significant mudstone/sandstone component of the geological units and the risk of natural cavities in the bedrock is considered negligible.

Potential for landslide ground stability hazards, shrink/swell hazards, collapsible ground, and running sands is very low. There is also no hazard potential for compressible ground.

2.4 Environmental Setting

The following sections have been compiled using the Landmark Information Group Envirocheck datasheet and maps which can be found in **Annex A**.

2.4.1 Hydrogeology

Superficial deposits beneath the site have an aquifer designation of secondary aquifer – Undifferentiated.

The bedrock deposits beneath the site have an aquifer designation of secondary aquifer – B.

Deeper groundwater flow within the underlying bedrock will be controlled by the strata dip and any fractures or bedding planes within the rock units.

The site does not locate within a groundwater source protection zone.

There are no groundwater abstraction points within 250m of the site.

2.4.2 Hydrology

The nearest surface water feature locates off site, 22m to the southeast and comprises a drain.

The topography of the site slopes down towards to the northwest. Surface water is likely to drain in this direction.

2.4.3 Flooding

The site is not at risk from extreme flooding from rivers or sea. Furthermore, the BGS groundwater susceptibility map states that the site has a limited potential for groundwater flooding to occur.

2.4.4 Waste

There are no recorded landfill sites within 250m of the site.

There are no licensed waste management facilities or waste transfer sites within 250m of the site.

There are no Discharge consents within 250m of the site.

2.4.5 Pollution

No pollution incidents are recorded to have occurred within 250m radius of the site.

2.4.6 Sensitive Land Use

The site is not located within a sensitive land use area.

2.4.7 Measured Urban Soil Chemistry

The BGS have published measured urban soil chemistry concentrations locally to the site for a number of common contaminants, i.e. arsenic, cadmium, chromium, lead and nickel. All of the given determinands have anticipated concentrations that are below the recognised trigger levels for a residential with plant uptake scenario.

2.4.8 Industrial Land Use

Relevant contemporary trade directory entries recorded within proximity of the site are summarised in **Table 2.3.**

Table 2.3 Relevant Contemporary Trade Summary

Company	Distance/Direction from site	Classification	Status
Richards Bros	118m North	Bus & Coach Operators & Stations	Inactive
Weslec Ltd	132m Southwest	Electrical Goods Sales, Manufacturers & Wholesalers	Inactive
Lloyd Motors (Nissan)	132m Southwest	Car Dealers	Inactive
Tesco Petrol Filling Stations	133m Southwest	Petrol Filling Stations	Inactive
Tesco Petrol Station	213m South	Petrol Filling Stations	Active
Green Motors Ltd	228m Southwest	Car Dealers	Inactive

2.4.9 Infilled Land

Potentially infilled land features within 250m of the site are summarised in **Table 2.4**.

Table 2.4 Potentially Infilled Land

Feature	Distance/Direction from site
Unknown Filled Ground (Pond, marsh, river, stream, dock etc)	95m Southwest
Unknown Filled Ground (Pond, marsh, river, stream, dock etc)	107 North

SECTION 3 Preliminary Human Health and Environmental Risk Assessment

3.1 General

The preliminary human health and environmental risk assessment is a qualitative evaluation of unacceptable risks to human health or the environment from potential 'contaminated land', based on reviewed information in preceding sections of this report.

For 'contaminated land' to exist as defined in Part 2A of the Environmental Protection Act (EPA) 1990, a Pollutant Linkage needs to be identified. Pollutant linkages are defined by having a valid 'source – pathway – receptor' as established in the preliminary conceptual site model.

For our definitions of pollution linkage and how we define risk please refer to **Annex B** which includes our classifications of consequence and probability, and risk assessment matrix.

3.2 Potential Sources of Contamination

Potential or known sources of contamination associated the sites current and historical land use are summarised in **Table 3.1**.

Table 3.1 Contamination Sources

ID	Source	Contaminant
S1	Shallow soils	Metals, semi-metals, PAHs, and cyanide.
S2	Dinas Island Formation	Radon

No other significant potential on-site or off-site sources of contamination have been identified during the desk study.

3.3 Potential Pollution Pathways

Potential contaminant pathways associated with a residential with home grown produce land use are as follows.

P1 – Direct soil and dust ingestion
P2 – Consumption of home grown produce
P3 – Dermal contact
P4 – Inhalation of dust and vapours
P5 – Vertical migration of leachates (unsaturated zone)
P6 – Horizontal and vertical migration of contaminants (saturated zone)
P7 – Artificial contaminant pathway (borehole, pile, excavation etc)
P8 – Surface run-off
P9 – Plant uptake
P10 – Horizontal and vertical migration of ground gasses and vapours
P11 – Direct contact with construction materials
P12 – Inhalation of asbestos fibres

3.4 Potential Receptors

There are human and hydrological receptors to any contamination that may be present on site. Potential receptors include.

R1 – Construction and maintenance workers
R2 – Future site users (residents)
R3 – Passers-by or neighbouring site users
R4 – Groundwater (aquifer)
R5 – Surface waters (river/lake)

R6 – Area of public open space
R7 – Construction materials (concrete/potable water pipes)

3.5 Preliminary Conceptual Site Model

The preliminary conceptual site model establishes potential pollutant linkages between contaminants (source), pathways and receptors, realised during the preparation of the desk study report. Where a potential pollutant linkage is identified an assessment of risk is subsequently undertaken. The preliminary conceptual site model is tabulated in **Table 3.2**.

Outcomes of the preliminary conceptual site model are used as a basis for the design and implementation of the site investigation, whereby areas of potential contamination can be targeted as well as investigating the wider site.

Findings of the site investigation can in turn be used to develop and refine the conceptual site model.

Table 3.2 Preliminary Conceptual Site Model

Source	Pathway	Receptor	Preliminary Risk Assessment		
			Consequence	Probability	Risk
Human Health					
Contaminated Soils S1	Direct soil and dust ingestion P1 Dermal contact P3 Inhalation of dust and vapours P4	Construction and maintenance workers R1	**Medium**	**Low Likelihood**	**Medium Risk -** COSHH assessment and good level of PPE/ hygiene by site workers/ staff; dust suppression measures if required. Suitably designed site investigation recommended
		Passers-by or neighbouring site users R3	**Medium**	**Unlikely**	**Low Risk** - Dust suppression measures if required.
		Future site users (residents) R2	**Medium**	**Low Likelihood**	**Low Risk**
Radon Gas S2	Horizontal and vertical migration of ground gasses P10	Future site users (residents) R2	**Medium**	**Unlikely**	**Low Risk** - Basic radon protection measures required
Impacted Groundwaters S1	Horizontal and vertical migration of contaminants (saturated zone) P6 Dermal contact P3	Construction and maintenance workers R1	**Medium**	**Unlikely**	**Low Risk**
Contaminated Soils S1	Plant uptake P9 Consumption of home grown produce P2	Future site users (residents) R2	**Medium**	**Unlikely**	**Low Risk**
Contaminated Soils S1	Direct Contact P11	Construction materials (water pipes) R7	**Mild**	**Low Likelihood**	**Low Risk**
Aggressive ground conditions - Sulphates S1		Construction materials (concrete) R7			
Aquatic Environment					
Contaminated Soils S1	Vertical migration of leachates (unsaturated zone) P5	Groundwater (aquifer) R4 Surface waters (river/lake) R5	**Mild**	**Low Likelihood**	**Low Risk**
	Surface run-off P8	Surface waters (river/lake) R5			
	Horizontal and vertical migration of contaminants (saturated zone) P6				

SECTION 4 Field Investigation

4.1 Site Works

A geotechnical and geoenvironmental site investigation comprising trial pitting and soakaway infiltration tests were undertaken between the 20th - 23rd February 2023.

The fieldwork was supervised by Terra Firma, who logged the exploratory holes to the requirements of BS 5930:2015+A1:2020. The proposed locations of the exploratory holes were determined by Terra Firma in general accordance with BS 10175:2011+A2:2017 in order to assess the findings of the preliminary conceptual site model.

Trial pits referenced TP01 to TP14, were formed using an 8 tonne excavator with a 0.70m wide bucket.

Representative disturbed samples were taken and retained in airtight containers for environmental and geotechnical testing.

On completion all trial pits were backfilled with materials arisings compacted in layers using the excavator bucket. The ground surface was reinstated of backfilled materials.

The trial pit logs are presented in **Annex C.**

Soakaway tests were carried out in trial pits TP01 and TP05 in general accordance with BRE DG 365:2016. The excavation sides were squared using the excavator bucket and dimensions recorded within the test section. The trial pit was partially filled with clean water using a dedicated bowser with a 75mm diameter outlet and the fall in level recorded against time. The results are presented in **Annex D.**

Transport Research Laboratory/Dynamic Cone Penetrometer tests, referenced DC01 to DC07, were carried out using a CNS Farnell A2465 dynamic cone penetrometer. Probe depths were measured with respect to ground level and the number of blows for the penetration of the probe was recorded. Equivalent CBR values have been calculated and presented with the results in **Annex I**.

The boreholes referenced WS01 and WS06, were formed using a Terrier 2000 rig. Dynamic sampling techniques were employed from surface to produce a continuous disturbed sample.

Standard penetration tests (SPT) were carried out at regular intervals in general accordance with BS1377: Part 9:1990:3.3. SPT results summarised as N values are presented on the borehole log.

Boreholes were monitored for groundwater ingress as drilling proceeded.

The borehole logs are presented in **Annex E.**

Exploratory hole locations are shown on **Drawing 01**.

4.2 Ground Conditions

The ground conditions encountered by the exploratory holes can in general be summarised as shown in **Table 4.1**.

Table 4.1 Summary of Typical Ground Conditions

Depth (m)			Thickness (m)	Stratum
0.00	-	0.2 – 0.3	0.2 – 0.3	Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
0.2 – 0.3	-	0.4 – 0.9	0.1 – 0.6	Soft brown and yellowish brown slightly fine sandy CLAY.
0.4 – 0.9	-	2.2 – 3.0	1.5 – 2.2	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
2.2 – 3.0	-	>4.0/>4.2	Unconfirmed	Stiff blueish grey slightly fissured CLAY.

4.3 Ground Conditions

No groundwater inflows were recorded during the trial pitting and windowless sample drilling.

4.4 Stability and Obstructions

Trial pits remained stable and vertical during excavation, and there were no obstructions to excavation.

4.5 Installation Well Construction

Gas well locations were selected on an non-targeted to assess the ground gas risk for the site as a whole suspected sources of contamination or potential contamination migration pathways.

Gas installation well construction details are summarised in **Table 4.2**.

Table 4.2 Installation Well Summary

Location	Response Zone		Stratum
	From (m)	To (m)	
WS01	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
WS02	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
WS03	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
WS04	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
WS05	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.
WS06	1.0	3.0	Firm to stiff blueish grey mottled brown slightly fissured CLAY.

4.6 Laboratory Chemical Testing

4.6.1 Sampling Strategy

Soil sampling locations were selected on a non-targeted basis to characterise the contamination status of a defined area of a site. A square grid sampling pattern was adopted.

Sample locations, depths and suspected/known contamination source targets are summarised in **Table 4.3**:

Table 4.3 Sample Locations, Depths and Targets

Location	Depth (m)	Contamination Targets
TP10	0.70	S1
TP08	0.60	S1
TP06	0.40	S1
TP10	4.00	S1
TP14	3.90	S1
TP12	2.20	S1
TP08	2.20	S1
TP07	3.50	S1
TP11	1.00	S1
TP09	1.80	S1
TP13	1.80	S1
TP14	2.00	S1
TP07	2.60	S1

4.6.2 Soil Laboratory Analysis

During the site investigation works soil samples were taken and despatched to the accredited laboratories of Eurofins Chemtest for laboratory chemical testing. Soil samples were tested for the determinands listed in **Table 4.4**.

Table 4.4 Soil Laboratory Analysis

Metals & Metalloids	In-Organics	Organics	Others
Arsenic	Cyanide	Phenols	pH (acidity)
Cadmium	Sulphate	PAH	
Chromium III			
Chromium VI			
Copper			
Lead			
Mercury			
Nickel			
Selenium			
Zinc			

The results are discussed in detail in **SECTION 6** and the laboratory test results certificates may be found in **Annex F**.

4.7 Soil Property Testing

4.7.1 In-situ Permeability Testing

During the site investigation of five trial pit soakaway tests were undertaken in TP01 to TP05 inclusive and carried out in general accordance with BRE DG 365:2016.

Soakaway test results are summarised in **Table 4.5**.

Table 4.5 Summary of Soakaway Results

Trial Pit	Depth Range of Test (m)	Infiltration Rate (ms^{-1})
TP01	1.8 – 2.2	Insufficient infiltration rate to calculate a result
TP02	1.8 – 2.0	Insufficient infiltration rate to calculate a result
TP03	1.8 – 2.0	Insufficient infiltration rate to calculate a result
TP04	1.8 – 2.0	Insufficient infiltration rate to calculate a result
TP05	1.8 – 2.0	Insufficient infiltration rate to calculate a result

The test results are discussed in **SECTION 6** and the calculation sheets may be found in **Annex D**.

4.7.2 Laboratory Geotechnical Testing

A schedule of laboratory tests was prepared by Terra Firma and samples were despatched to the accredited laboratories of Apex Testing Solutions. A summary of the testing carried out is presented in **Table 4.6**.

Table 4.6 Summary of Geotechnical Testing

Geotechnical Test	Standard (BS1377:1990)	No. Tested
Moisture Content	Part 2, Clause 3.2	5
4 Point Liquid and Plastic Limit	Part 2, Clause 4.3 & 5.3	5

The test results are presented in **Annex H** and discussed in **SECTION 7** of this report.

SECTION 5 Evaluation of Geoenvironmental Analytical Results

5.1 Assessment Methodology

Comparison of the analytical results has been made with the 2015 Suitable 4 Use Levels (S4UL) provided by Land Quality Management (LQM) Limited and the Chartered Institute of Environmental Health (CIEH) or provisional Category 4 Screening Levels (pC4SL).

Sulphate results have been compared to guidelines presented in British Research Establishment (BRE SD1:2015). Sulphate levels need only be considered for buried concrete risk assessment and are not human health related.

Soils subjected to a UK Water Industry Research (UKWIR) suite of testing have been compared with guidelines set out in UKWIR Guidance for the Selection of Water Supply Pipes to be Used in Brownfield Sites (Ref 10/WM/03/21).

5.2 Soil Test Results

A summary of the chemical test results which include the regulatory soil guideline values used in a residential setting with plant uptake are given in the following tables. The complete results can be found in **Annex F**.

5.2.1 Inorganics & Miscellaneous

Eight samples were tested for a standard suite of inorganics, pH and organic matter. The summarised results are in **Table 5.1**.

Table 5.1 Summary of Soil Chemical Test Results – Inorganics & Miscellaneous

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Arsenic	37	LQM/CIEH	9.1	21	0
Cadmium	11	LQM/CIEH	<0.1	0.12	0
Chromium III	910	LQM/CIEH	20	47	0
Chromium VI	6	LQM/CIEH	<0.5	<0.5	0
Copper	2400	LQM/CIEH	15	35	0
Lead	200	pC4SL	13	26	0
Mercury (inorganic)	40	LQM/CIEH	<0.05	<0.05	0
Nickel	180	LQM/CIEH	28	48	0
Selenium	250	LQM/CIEH	0.48	1.1	0
Zinc	3700	LQM/CIEH	40	83	0
Cyanide	-	-	<0.5	<0.5	-
Boron	290	LQM/CIEH	0.95	2.2	0
Sulphate (%)	0.24	BRE	<0.01	0.043	0
Organic Matter (%)	-	-	0.7	2.0	-
pH	-	-	8.2	10.8	-
Phenols	120	LQM/CIEH	<0.1	0.13	0

Notes:
- No available guideline

5.2.2 Organics

Eight samples were tested for speciated polycyclic aromatic hydrocarbons. The summarised results are in **Table 5.2**.

Table 5.2 Summary of Soil Chemical Test Results – Speciated Polycyclic Aromatic Hydrocarbons

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Naphthalene	2.3	LQM/CIEH	<0.1	<0.1	0
Acenaphthylene	170	LQM/CIEH	<0.1	<0.1	0
Acenaphthene	210	LQM/CIEH	<0.1	<0.1	0
Fluorene	170	LQM/CIEH	<0.1	<0.1	0
Phenanthrene	95	LQM/CIEH	<0.1	<0.1	0
Anthracene	2400	LQM/CIEH	<0.1	<0.1	0
Fluoranthene	280	LQM/CIEH	<0.1	<0.1	0
Pyrene	620	LQM/CIEH	<0.1	<0.1	0
Benzo(a)anthracene	7.2	LQM/CIEH	<0.1	<0.1	0
Chrysene	15	LQM/CIEH	<0.1	<0.1	0
Benzo(b)fluoranthene	2.6	LQM/CIEH	<0.1	<0.1	0
Benzo(k)fluoranthene	77	LQM/CIEH	<0.1	<0.1	0
Benzo(a)pyrene	2.2	LQM/CIEH	<0.1	<0.1	0
Indeno(123cd)pyrene	27	LQM/CIEH	<0.1	<0.1	0
Dibenzo(ah)anthracene	0.24	LQM/CIEH	<0.1	<0.1	0
Benzo(ghi)perylene	320	LQM/CIEH	<0.1	<0.1	0
Total PAH	-	-	<2.0	<2.0	-

Notes:
Thresholds based on 1.0% soil organic matter
- No available guidelines

Eight samples were tested for petroleum hydrocarbon. The summarised results are shown in **Table 5.3**.

Table 5.3 Summary of Soil Chemical Test Results – Petroleum Hydrocarbons

Substance	Threshold Value (mg/kg)	Source	Measured Concentrations (mg/kg)		Number of Exceedances
			Minimum	Maximum	
Aliphatic					
PH C5 – C6 Ali	42	LQM/CIEH	<0.05	<0.05	0
PH C6 – C8 Ali	100	LQM/CIEH	<0.05	<0.05	0
PH C8 – C10 Ali	27	LQM/CIEH	<0.05	<0.05	0
PH C10 – C12 Ali	130	LQM/CIEH	3.0	4.4	0
PH C12 – C16 Ali	1100	LQM/CIEH	4.0	6.3	0
PH C16 – C21 Ali	65000*	LQM/CIEH	3.2	5.8	0
PH C21 – C35 Ali	65000*	LQM/CIEH	8.7	14	0
PH C35 – C44 Ali	65000	LQM/CIEH	<10	<10	0
Aromatic					
PH C5 – C7 Arom	70	LQM/CIEH	<0.05	<0.05	0
PH C7 – C8 Arom	130	LQM/CIEH	<0.05	<0.05	0
PH C8 – C10 Arom	34	LQM/CIEH	<0.05	<0.05	0
PH C10 – C12 Arom	74	LQM/CIEH	14	17	0

PH C12 – C16 Arom	140	LQM/CIEH	22	29	0
PH C16 – C21 Arom	260	LQM/CIEH	24	27	0
PH C21 – C35 Arom	1100	LQM/CIEH	<2.0	7.3	0
PH C35 – C44 Arom	1100	LQM/CIEH	13	17	0

Notes:
PH – Petroleum Hydrocarbon
Ali – Aliphatic
Arom – Aromatic
Thresholds based on 1.0% soil organic matter
* – Ali C16-21 and C21-C35 based on criteria for Ali EC >16-35

SECTION 6 Geotechnical Testing Results

Geotechnical testing results are summarised in the following sections and presented in their entirety in **Annex H**.

6.1 Plasticity & Moisture Content Testing

During the investigation five samples of the shallow clay material was taken and submitted for plasticity testing. The test results are summarised in **Table 6.1**.

Table 6.1 Plasticity & Moisture Content Test Results

Location	Depth (m)	Laboratory Principal Soil Type	Moisture Content (%)	Plasticity Index (%)	Passing 425µm Sieve (%)	Modified Plasticity Index (%)	Volume Change Potential
TP05	2.0	CLAY	29.4	38	100	38	Medium
TP07	3.5	CLAY	16.9	24	90	21.6	Medium
TP09	1.8	CLAY	30.2	41	100	41	High
TP10	1.2	CLAY	29.1	36	100	36	Medium
TP14	4.0	CLAY	29.8	23	100	23	Medium

In line with the NHBC (Chapter 4.2), the modified plasticity index for each sample was calculated. For design purposes the soils on site should be assumed to have a high volume change potential.

6.2 BRE SD1 Testing

Five samples were subject to BRE SD1 testing for concrete classification. The results are summarised in **Table 6.2**.

Table 6.2 BRE SD1 Testing Summary

Location	Depth (m)	2:1 Water/Soil Extract		Total Potential Sulphate (%)	pH	Design Sulphate Class for Location	ACEC Class for Location
		SO_4 (mg/l)	Mg (mg/l)				
TP07	3.5	76	-	0.072	8.6	DS-1	AC-1
TP08	2.2	<10	-	< 0.03	8.2	DS-1	AC-1
TP10	4.0	<10	-	< 0.03	8.7	DS-1	AC-1
TP12	2.2	<10	-	< 0.03	8.3	DS-1	AC-1
TP14	3.9	12	-	< 0.03	8.7	DS-1	AC-1

SECTION 7 Ground Gas Risk Assessment

7.1 Gas Screening Value

Six ground gas monitoring wells were installed in WS01 to WS06. Installation details are shown on the relevant log.

Three rounds of gas monitoring has been carried out to date. The installations were tested for carbon dioxide, methane, oxygen, carbon monoxide and hydrogen sulphide using a Gas Analyser GA2000/5000.

Recorded gas concentrations are summarised in **Table 7.1**.

Table 7.1 Measured Gas Concentration Summary

Gas	Minimum (% V/V)	Maximum (% V/V)
Methane	0.0	0.2
Carbon Dioxide	0.5	3.5
Oxygen	16.6	20.6

Methane levels peaked at 0.1% V/V. Carbon dioxide levels varied between 0.5% and 3.5% V/V. Oxygen concentrations varied between 16.6% and 20.6% V/V.

The gas flow rate from the boreholes was also assessed, a maximum flow rate of 2.2 l/hr was recorded. A minimum negative flow reading of -25.5 l/hr.

Based on a flow rate of 3.7 l/hr and the highest recorded carbon dioxide concentration of 3.5%, a gas screening value of 0.13 l/hr is calculated, as follows:

(6.0/100) x 3.7 = 0.222 l/hr

The results to date are presented in **Annex G**.

7.2 Conclusion

When this monitoring result is compared with Table 8.5 of CIRIA report C665, the site is classified as ‘Gas Characteristic Situation 2’ in line with recommendations provided in CIRIA C665. However, given the shallow depth of groundwater in the boreholes and in the soil generally, it is considered that the rise and fall of the water level in the borehole is the source of the fluctuating flow readings rather than a steady flow of ground gas from a productive source. In addition to the fluctuating flow readings, there is no significant source of ground gas either on site, or within vicinity of the site. A maximum and solitary reading of 6.0% carbon dioxide is relatively low and the saturated nature of the ground suggests any ground gas would struggle to migrate through the soils of low permeability and into the proposed houses.

It is therefore provisionally recommended that the site is classified as ‘Gas Characteristic Situation 2’ in line with recommendations provided in CIRIA C665.

Upon completion of the full six rounds of monitoring the recommendation will be reviewed in a letter report and if necessary amended.

SECTION 8 Quantitative Risk Assessment

8.1 Contaminants of Concern

All substances tested for were found to be present at concentrations below their respective human health threshold level.

8.2 Mitigation and Remedial Measures

The following sections summarise the likely mitigation and remedial measures suitable for the identified contamination and proposed development. Detailed methodology to achieve the measures should be prescribed in a Remediation Strategy Report and the results presented in a Validation Report upon completion of the development.

8.2.1 Human Health

8.2.1.1 Contaminated Soils

Site specific mitigation and remedial measures are not required with respect to human health.

Providing subsequent test results confirm all ACM have been removed from site, it will be considered that no further remedial measures will be required with regards to asbestos contamination.

The advice of an asbestos specialist will be required and as a minimum the following precautions should be employed:

- Dust suppression and measures to dampen the material
- Suitable PPE for site workers
- Air monitoring on the site boundary
- Personal air monitors (for a time to determine actual personnel / fibre interaction)

In addition to the above it is best practise to clean down plant and change air filters on any plant used in the works with asbestos contaminated material.

As good practice, construction workers should adhere to good site management, COSHH, good standards of hygiene and appropriate health & safety on site, with personal protection equipment (PPE) and dust suppression where appropriate.

All imported soils should be validated as clean and suitable for use in accordance with ‘Requirements for the Chemical Testing of Imported Soils for Various End Uses and Validation Cover Systems’.

For proposed new supply water pipes, the UK Water Industry Research publication ‘Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites (Report 10/WM/03/21)’ should be consulted.

In accordance with EC Regulation 1272/2008 and Environment Agency Guidance WM3 soils destined for off-site disposal should be classified on the basis of their hazard phrases prior to disposal. Soils are classified as a mirror entry waste and should be classified on the basis of their specific chemical properties.

If during earthworks ground conditions are encountered that are markedly different to those found during the investigation then the ground should be subject to additional sampling and testing and any necessary remedial measures designed and implemented before continuing with the works.

8.2.1.2 Radon

To mitigate against the risk to future site users from radon gas, full protection measures will be required in all structures. Reference should be made to guidance publication BR 211:2015 for further details on required protection elements. Verification of the installed protection measures is highly recommended. Terra Firma. offer a comprehensive ground gas protection system verification service.

8.2.2 Aquatic Environment

Site specific mitigation and remedial measures are not required with respect to the aquatic environment.

During the construction period, there is a risk to the environment/adjacent sites from de-watering, digging foundations, moving contaminated soil, drainage misconnections, discharges to local surface waters or the ground, runoff from construction materials and/or exposed ground, wheel washings and oil or chemical spills.

The risk is considered to be negligible as any adverse effects will be easily preventable by due diligence to good construction practise and housekeeping in preventing surface runoff and the spillage of materials.

The basic measures that should be taken are as follows:

- Prepare a drainage plan and mark the manholes to prevent pollutants accidently reaching the surface water sewers;
- Carry out any activities that could cause pollution in a designated, bunded area, away from rivers or boreholes. Where possible it should drain to the foul sewer;
- Use settlement ponds to remove silty water;
- Store all oils and chemicals in a fully bunded area to prevent leaks or spills;
- Get advice on whether you need an environmental permit and apply in good time

SECTION 9 Engineering Recommendations

9.1 Preparation of Site

Areas of vegetation including all roots should be stripped and removed from beneath the proposed development site.

Allowances should be made for any temporary/permanent support works to any existing adjacent structure necessary as a result of the proposed works.

Contingencies should be made for the protection/diversion of any underground/overhead services present beneath/above the site brought about as a result of the proposed works.

Any reduced levels should be brought up to the required levels with suitable inert mainly granular materials. Department of Transport (DTp) type 2 sub-base or similar should be used and compacted in layers to the requirements of the Specification for Highway Works.

Allowances should also be made for the excavation of any soft spots/areas and their replacement with well compacted imported granular materials.

In accordance with EC Regulation 1272/2008 and Environment Agency Guidance WM3 soils and other materials destined for off-site disposal should be classified on the basis of their hazard phrases prior to disposal. Soils are classified as a mirror entry waste and should be classified on the basis of their specific chemical properties. Terra Firma offer this service if required.

9.2 Foundation and Floor Slab Solution

It is recommended that mass concrete strip or trench fill foundations be used; founded within the firm to stiff blueish grey mottled brown slightly fissured CLAY at an approximate depth from 1.0m to 2.2m below the existing ground level. An allowable bearing pressure of 100kN/m^2 may be used for strips up to 750mm wide.

Foundations must sit at least 200mm within the founding horizon.

For the given foundation solutions and bearing pressure, maximum total settlements of 25mm should result with differential movements of the superstructure not exceeding 1:750.

If trees are to be incorporated within the proposed development, foundations will need to be taken deeper within influencing distance of the tree root systems. The National House Building Council (NHBC) Chapter 4.2 gives guidelines as to the appropriate type of floor slab and void based on the type of tree, distance of the foundation from the tree and the plasticity index of the in-situ materials.

During the investigation three samples of the in-situ clay were taken and submitted for plasticity testing. In line with the NHBC (Chapter 4.2), the modified plasticity index for each sample was calculated. For design purposes the superficial cohesive deposits should be assumed to have a high volume change potential.

Foundations should be taken down to a minimum depth of 1.0m below finished levels when founding in high volume change potential soils.

Floor slabs may be designed as ground bearing following removal of soft near-surface soils and replacement with well-compacted granular materials such as Department of Transport (DoT) Type 2 materials or similar to be compacted in layers to the Specification of Highway Works. If the fill materials exceed 600mm, floor slabs should be designed as suspended.

Allowances should be made for the removal of any ‘soft spots’ and their replacement with well-compacted granular materials. Department of Transport (DoT) Type 2 materials or similar could be used and should be compacted in layers to the specification for Highway Works.

All foundation formations should be inspected by a suitably qualified Engineer before being concreted.

9.3 Excavations and Formations

Most of the shallow excavations will be possible with normal soil excavating machinery.

Any water inflows together with rainwater infiltration should be dealt with by conventional pumping techniques. However, it should be noted that during times of heavy rainfall a higher water table will be encountered.

The sides of any excavations deeper than 1.20m, or shallower if unstable, should be supported by planking and strutting or other proprietary means.

The sub-formations/formations are likely to be susceptible to loosening, softening and deterioration by exposure to weather (rain, frost and drying conditions), the action of water (flood water or removal of groundwater) and site traffic.

Formations should never be left unprotected and continuously exposed to rain causing degradation, or left exposed/uncovered overnight, unless permitted by a qualified engineer.

Construction plant and other vehicular traffic should not be operated on unprotected formations.

As a minimum the formation/excavation surfaces must be protected by blinding concrete immediately after exposure.

Allowances should be made for the removal of soft spots/areas and their replacement with well compacted granular materials.

Allowances should also be made for special precautions to prevent formation deterioration in addition to the above.

9.4 Protection of Buried Concrete

When the results are compared with Table C1 of BRE Digest 1:2005, it indicates that buried concrete should generally conform to Design Sulphate Class DS-1, ACEC Class AC-1.

9.5 Access Roads and Car Parking Areas

For car parking and road areas, formations within the in-situ natural soils a CBR value of 5% may be used for design purposes. The TRL dynamic cone penetrometer test results, from which CBR percentages have been correlated, are located in **ANNEX I**.

Allowances should be made for the removal of any ‘soft spots/areas’ and their replacement with well-compacted granular materials as previously described.

Please note that the Local Council / Highways Authority may require in-situ CBR testing to be undertaken before a road is adopted. In-situ CBR Testing should be performed following earthworks to verify the performance of the engineered fill.

9.6 Storm Water Drainage

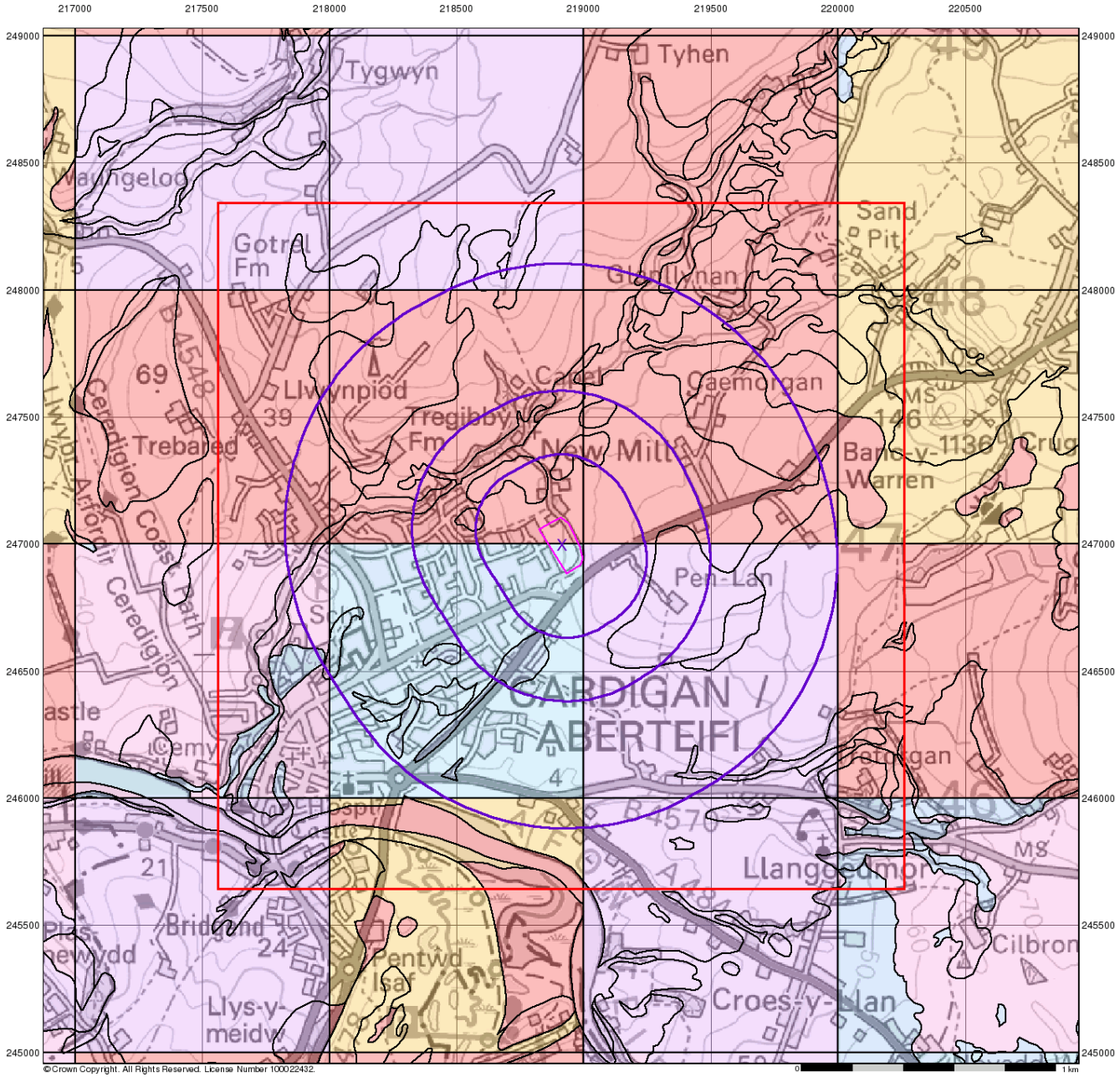
During the site investigation five soakaway tests were undertaken in general accordance with BRE DG 365:2016. The soakaway test was carried out in trial pits TP01 to TP05 within natural soil.

The soakaway tests recorded insufficient infiltration and were subsequently terminated early. In addition, shallow groundwater has been recorded in the boreholes during the ground gas monitoring, suggesting a shallow groundwater table beneath the site.

It is considered that soakaway storm water draining is unsuitable at the site.

The soakaway test results are presented in **Annex D**.

ANNEX A
Envirocheck Report



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Groundwater Vulnerability

General

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

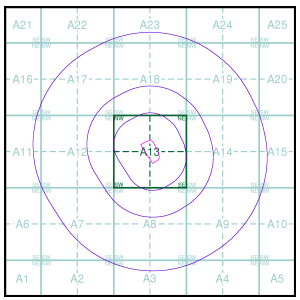
Agency and Hydrological

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



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Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

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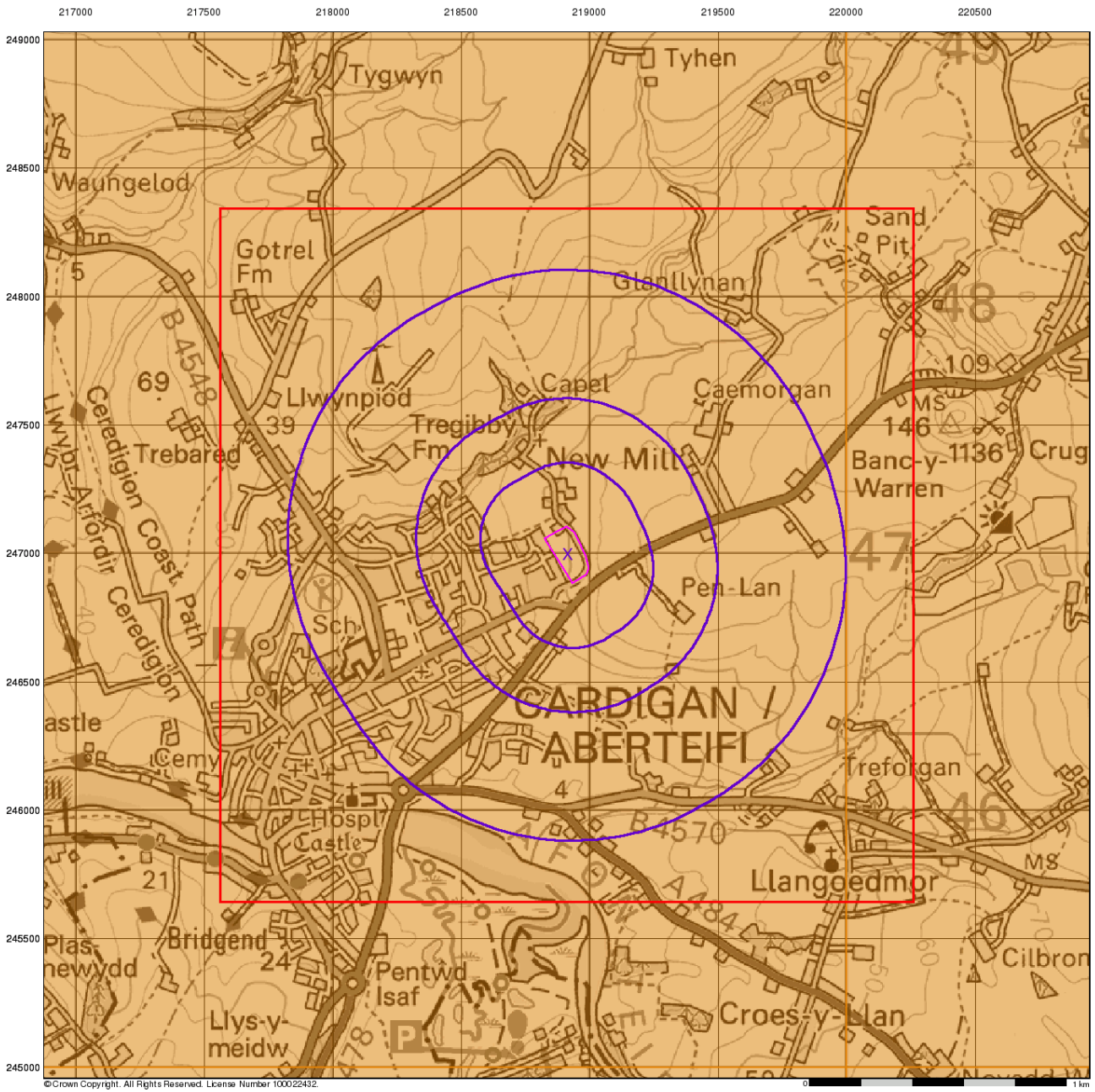

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Bedrock Aquifer Designation

General

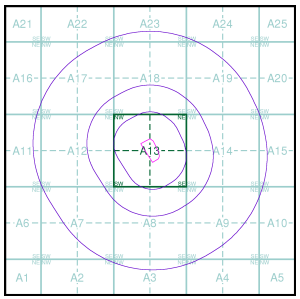
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

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



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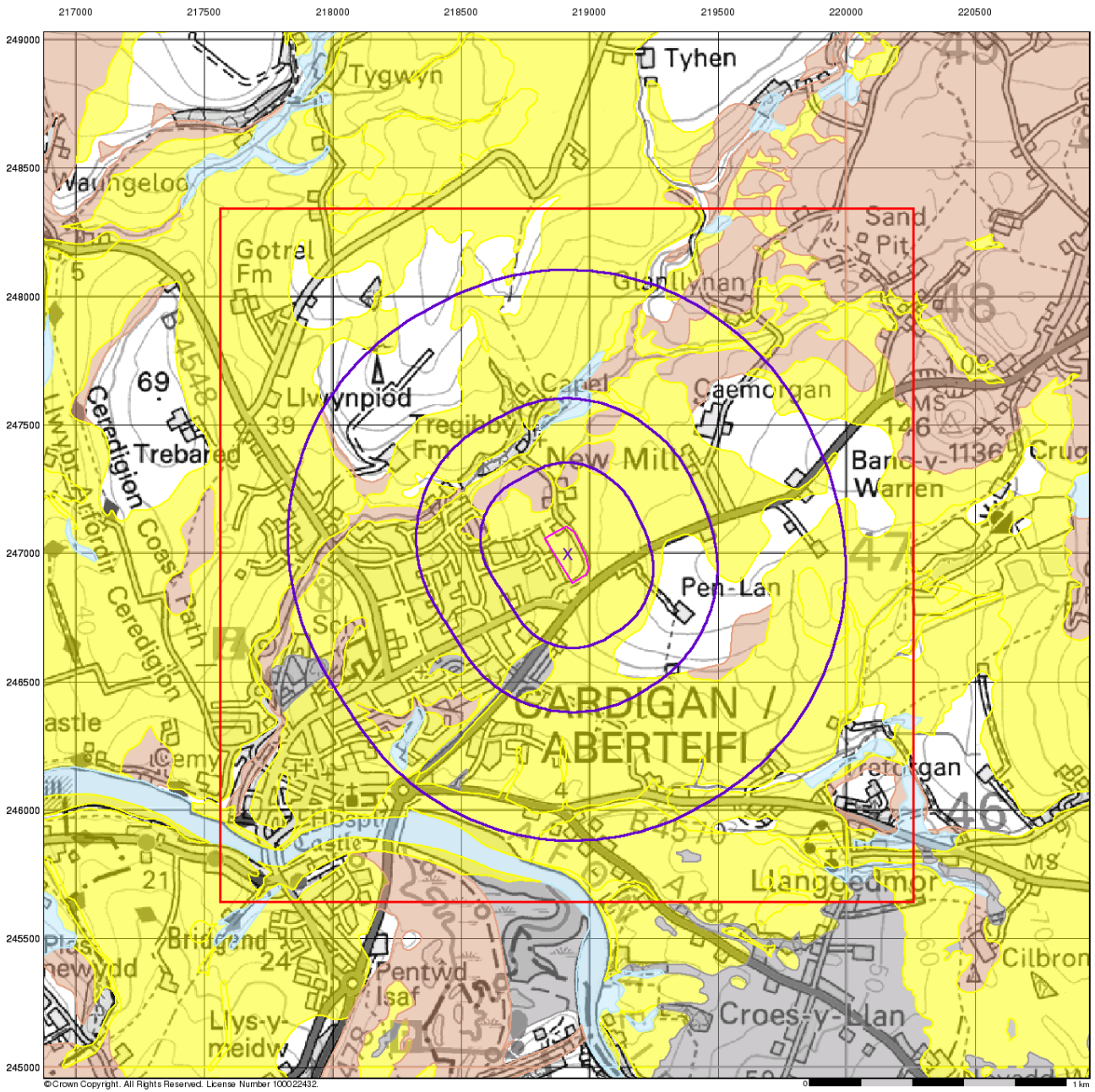

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Superficial Aquifer Designation

General

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

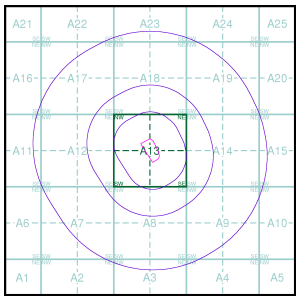
Slice | Map ID

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



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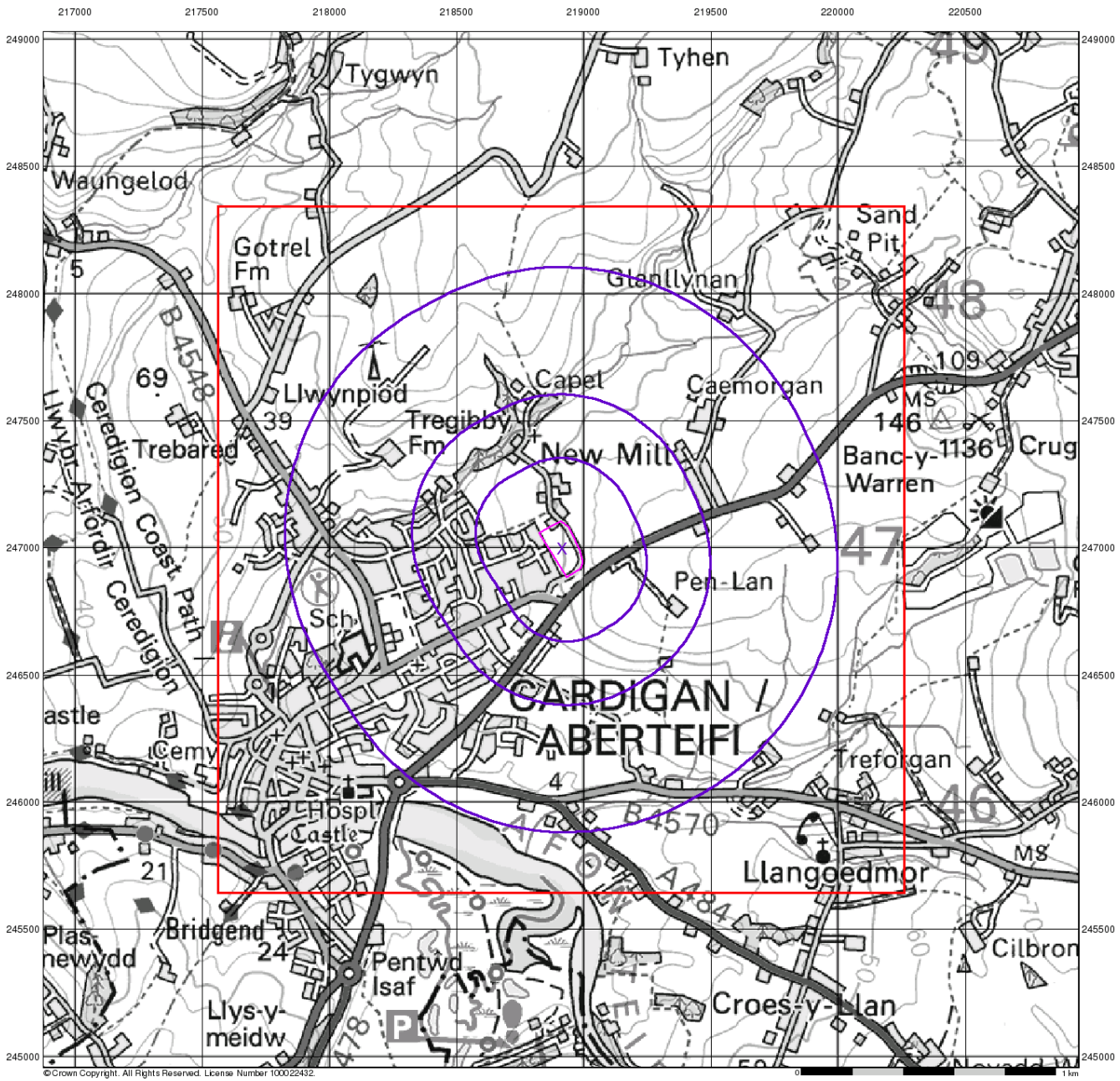

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Source Protection Zones

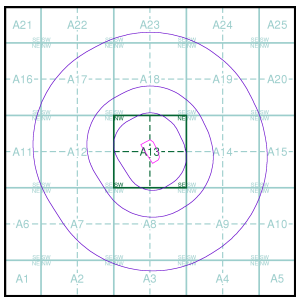
General

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



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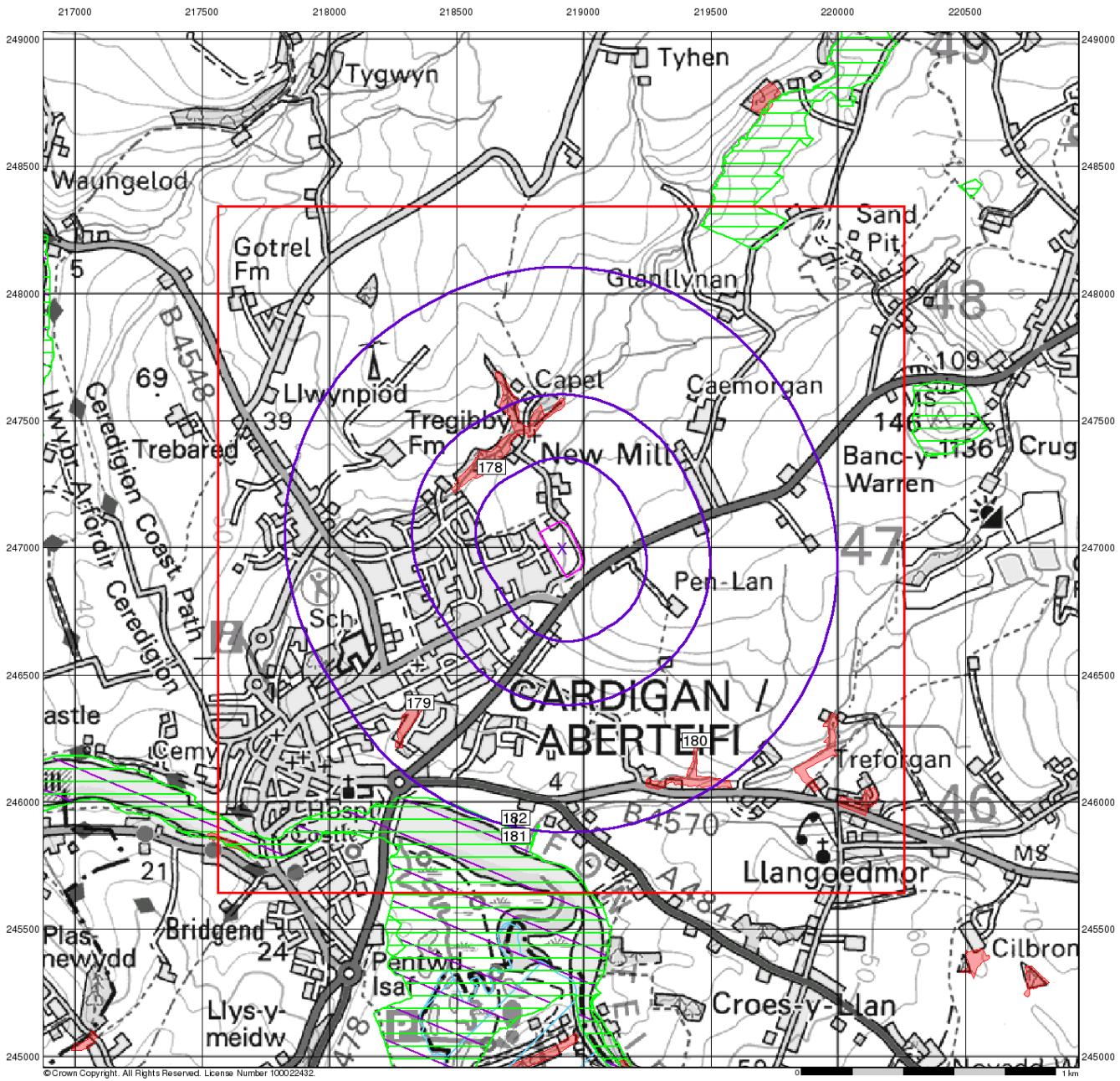

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Sensitive Land Uses

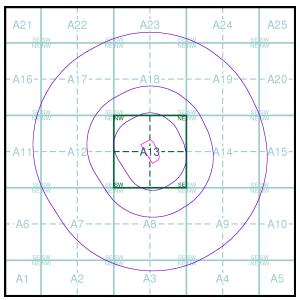
General

- 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



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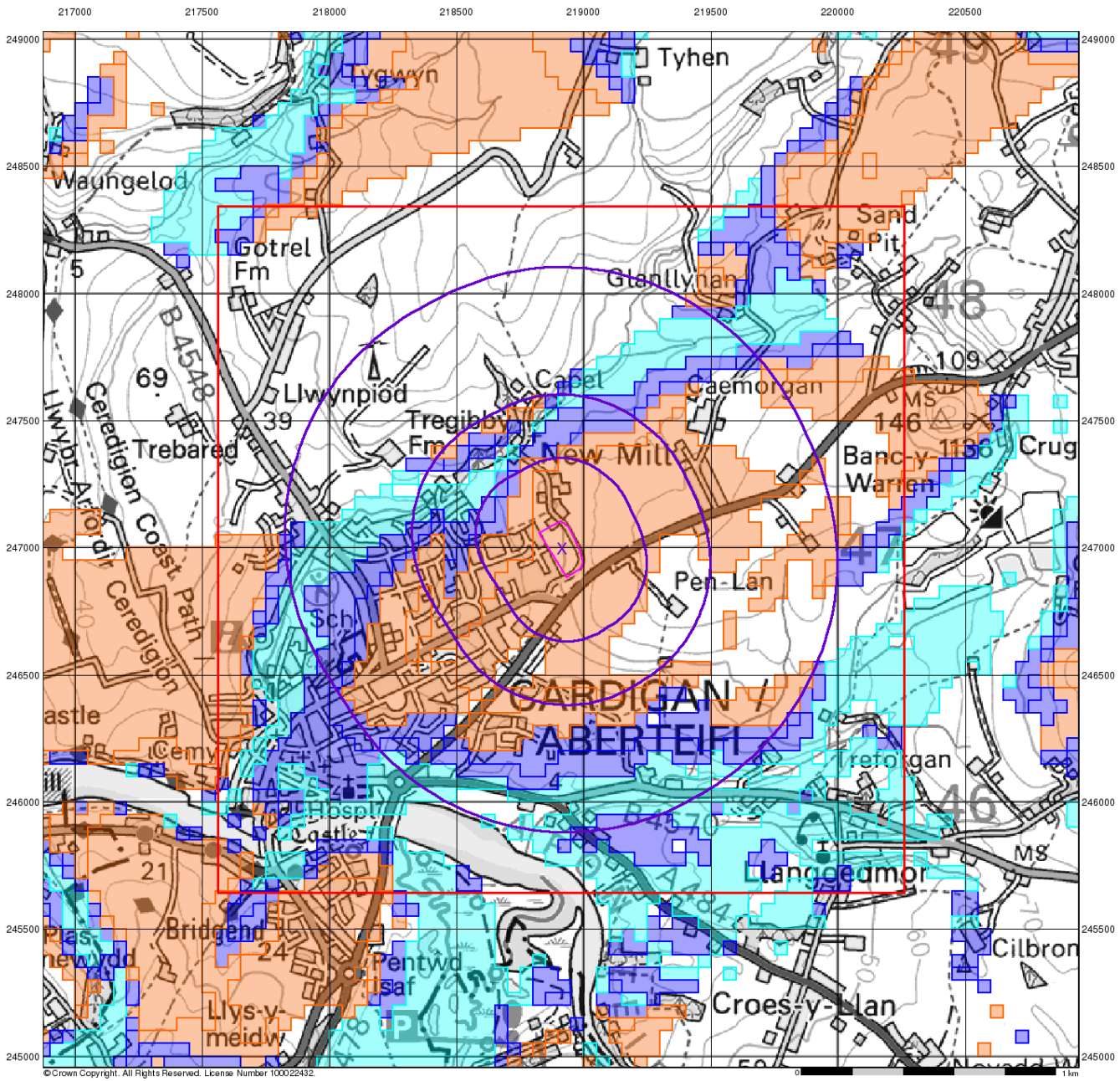

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BGS Flood GFS Data

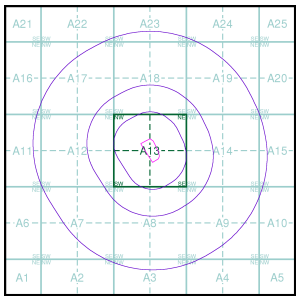
General

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



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Search Buffer (m):	1000

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Envirocheck® Report:

Datasheet

Order Details:

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306860604_1_1

Customer Reference:
17706MP dol y dinter

National Grid Reference:
218910, 247000

Slice:
A

Site Area (Ha):
2.05

Search Buffer (m):
1000

Site Details:

new mill road
Cardigan
SA43 1NE

Client Details:

Ms R Liley
TFW Group Ltd
5 Deryn Court
Wharfdale Road
Pentwyn
Cardiff
CF23 7HB

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Contents

Introduction

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

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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			9	12
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 8		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 8		Yes		
Pollution Incidents to Controlled Waters	pg 8			1	7
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 10				(*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 11	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				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 12		5	19	71

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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					
Historical Landfill Sites	pg 23				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 23	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 23				1
Potentially Infilled Land (Non-Water)	pg 23			2	5
Potentially Infilled Land (Water)	pg 24		2	3	10
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
BGS Recorded Mineral Sites	pg 28			2	3
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		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	pg 30	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 31		6	8	14
Fuel Station Entries	pg 33			3	
Points of Interest - Commercial Services					
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 33				4
Points of Interest - Public Infrastructure	pg 34		1	9	2
Points of Interest - Recreational and Environmental	pg 35			3	3
Gas Pipelines					
Underground Electrical Cables					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 36			1	2
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 36				1
Special Areas of Conservation	pg 36				1
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (W)	0	1	218915 246996
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	24	1	218800 246996
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	124	1	218700 247050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	161	1	218750 247200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	179	1	218650 247100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	189	1	218700 247200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	224	1	218600 247000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	225	1	218650 247200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	247	1	218900 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (N)	247	1	218915 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	249	1	218750 247300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	254	1	218850 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	272	1	218700 247300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	280	1	218550 246996
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (NW)	293	1	218750 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	299	1	218950 247400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	341	1	218650 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	352	1	218850 247450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	358	1	219000 247450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	360	1	218700 247400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (NW)	366	1	218550 247300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	374	1	218450 247050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	376	1	218450 247100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	382	1	218750 247450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	384	1	218650 247400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	397	1	218900 247500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	405	1	218700 247450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	412	1	218800 247500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	424	1	218400 247050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	424	1	218400 247000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	433	1	218915 246450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SE (NW)	437	1	218500 247350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A17SE (NW)	439	1	218550 247400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (NW)	446	1	218450 247300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	447	1	218900 247550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SE (N)	447	1	218915 247550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	451	1	218850 247550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	472	1	218400 246850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	478	1	218350 246996
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NW (SE)	483	1	219300 246550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (NE)	491	1	219200 247500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	497	1	218915 247600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Mr D C W Jones Property Type: Domestic Property (Multiple) Location: Felinban Farmhouse, Aneddfa & Ger Y Nant, Ger Y Melin Y Coed, Cardigan, Ceredigion, Sa43 1pg Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bp0239201 Permit Version: 1 Effective Date: 22nd September 1994 Issued Date: 22nd September 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Afon Mwldan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A12NE (NW)	384	2	218478 247223
1	**Discharge Consents** Operator: Mr J B Hudson Property Type: Domestic Property (Multiple) Location: Felinban Farmhouse, Aneddfa & Ger Y Nant, Ger Y Melin Y Coed, Cardigan, Ceredigion, Sa43 1pg Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bp0239201 Permit Version: 1 Effective Date: 22nd September 1994 Issued Date: 22nd September 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Afon Mwldan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A12NE (NW)	384	2	218478 247223
1	**Discharge Consents** Operator: Mr A M Gillingham Property Type: Domestic Property (Multiple) Location: Felinban Farmhouse, Aneddfa & Ger Y Nant, Ger Y Melin Y Coed, Cardigan, Ceredigion, Sa43 1pg Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: BP0239201 Permit Version: 1 Effective Date: 22nd September 1994 Issued Date: 22nd September 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Afon Mwldan **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A12NE (NW)	384	2	218478 247223
2	**Discharge Consents** Operator: Rees Wynne Property Type: Undefined Or Other Location: Cardigan The Old Barn Felin Ba Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bp0132601 Permit Version: 1 Effective Date: 24th August 1989 Issued Date: 24th August 1989 Revocation Date: 24th August 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	405	2	218500 247300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Roberts M Property Type: Undefined Or Other Location: Conversion Of Farm Build Into Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bn0040701 Permit Version: 1 Effective Date: 22nd June 1971 Issued Date: 22nd June 1971 Revocation Date: 2nd July 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Soakaway Nr Afon Mwldan **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12NE (W)	409	2	218420 247120
3	**Discharge Consents** Operator: Dwr Cymru Welsh Water Property Type: Sewerage Network - Pumping Staions Location: Grove Park Estate Cnwc-Y-Dintir Ca, Cnwc-Y-Dintir Cardigan Authority: Natural Resources Wales Catchment Area: MWLDAN Reference: BN0225901 Permit Version: 1 Effective Date: 25th April 1980 Issued Date: 25th April 1980 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Afon Mwldan **Status: Effective** Positional Accuracy: Located by supplier to within 100m	A12NE (W)	426	2	218400 247100
3	**Discharge Consents** Operator: Dwr Cymru Welsh Water Property Type: Sewerage Network - Pumping Staions Location: Grove Park Estate Cnwc-Y-Dintir Ca, Cnwc-Y-Dintir Cardigan Authority: Natural Resources Wales Catchment Area: MWLDAN Reference: Bn0225901 Permit Version: 1 Effective Date: 25th April 1980 Issued Date: 25th April 1980 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Afon Mwldan **Status: Effective** Positional Accuracy: Located by supplier to within 100m	A12NE (W)	426	2	218400 247100
4	**Discharge Consents** Operator: Jones E Property Type: Domestic Property (Single) Location: Yr Ysgubor Caemorgan Rd Cardigan Dy, Caemorgan Rd, Cardigan, Dyfed, Sa43 1qu Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bn0151401 Permit Version: 1 Effective Date: 14th June 1976 Issued Date: 14th June 1976 Revocation Date: 29th September 1992 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land Nr Nant Mwldan **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	467	2	219400 247200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Mr P K Williams Property Type: Domestic Property (Single) Location: Yr Ysgubor Caemorgan Rd Cardigan Dy, Caemorgan Rd, Cardigan, Dyfed, Sa43 1qu Authority: Natural Resources Wales Catchment Area: Not Given Reference: BN0114201 Permit Version: 1 Effective Date: 1st August 1974 Issued Date: 1st August 1974 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge Environment: Into Land Receiving Water: To Land Near River Mwldan **Status:** **New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	467	2	219400 247200
5	**Discharge Consents** Operator: Cramp T Property Type: Domestic Property (Single) Location: Capel Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bp0051801 Permit Version: 1 Effective Date: 12th August 1987 Issued Date: 12th August 1987 Revocation Date: 10th October 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A18SW (N)	509	2	218800 247600
6	**Discharge Consents** Operator: Davies O J Property Type: Undefined Or Other Location: Brynllynan Cardigan. Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bj0094201 Permit Version: 1 Effective Date: 23rd July 1971 Issued Date: 23rd July 1971 Revocation Date: 26th October 1992 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Open Ditch Nr. River Mwldan **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	603	2	219000 247700
7	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Water Supply Grid Location: Cardigan (New) Chlorinated Ove Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bp0174601 Permit Version: 1 Effective Date: 2nd October 1989 Issued Date: 2nd October 1989 Revocation Date: 14th March 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land **Status:** **Consent expired** Positional Accuracy: Located by supplier to within 100m	A14NE (E)	706	2	219700 247000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Discharge Consents** Operator: Jones J E Property Type: Livestock Production, Food Production Location: Oernant Farm Cardigan Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bk0116201 Permit Version: 1 Effective Date: 14th August 1974 Issued Date: 14th August 1974 Revocation Date: 1st February 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Farm Ditch On Right Bank Of Ri **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A19NW (NE)	798	2	219300 247800
9	**Discharge Consents** Operator: Mid Wales Housing Assoc Ltd Property Type: Domestic Property (Multiple) Location: Melinydre Gwbert Rd Cardigan Dyfed Authority: Natural Resources Wales Catchment Area: Afon Teifi Reference: Bp0003901 Permit Version: 1 Effective Date: 11th October 1985 Issued Date: 11th October 1985 Revocation Date: 6th December 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Afon Mwldan **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A12NW (W)	824	2	218000 247050
10	**Discharge Consents** Operator: Mr Martin Clements Property Type: Domestic Property (Single) Location: Stp Serving Cedrwydd Glas, Llangoedmor, Cardigan, Ceredigion, Sa432ld Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Eprnb3097tk Permit Version: 1 Effective Date: 14th October 2013 Issued Date: 14th October 2013 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd-Y-Fuwch **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8SE (S)	888	2	218958 245995
10	**Discharge Consents** Operator: Martin Clements Property Type: Domestic Property (Single) Location: Stp Serving Cedrwydd Glas, Llangoedmor, Cardigan, Ceredigion, Sa432ld Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Nb3097tk Permit Version: 1 Effective Date: 14th October 2013 Issued Date: 14th October 2013 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd-Y-Fuwch **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A8SE (S)	888	2	218958 245995

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: Tami Cutler-Moore Property Type: Domestic Property (Single) Location: Manarafon, Cardigan, Sa43 2ld Authority: Natural Resources Wales Catchment Area: MWLDAN Reference: Bb3796zn Permit Version: 1 Effective Date: 30th September 2020 Issued Date: 30th September 2020 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd-Y-Fuwch **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A8SE (S)	889	2	218936 245994
11	**Discharge Consents** Operator: Ioan Jacob Evans Property Type: Domestic Property (Single) Location: Stp Serving Rhyd Y Fuwch Farm, ., Cardigan, Ceredigion, Sa432la Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Epryp3428xx Permit Version: 1 Effective Date: 27th November 2012 Issued Date: 27th November 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd Y Fuwch **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SW (S)	889	2	219268 246059
11	**Discharge Consents** Operator: Ioan Jacob Evans Property Type: Domestic Property (Single) Location: Stp Serving Rhyd Y Fuwch Farm, ., Cardigan, Ceredigion, Sa432la Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Yp3428xx Permit Version: 1 Effective Date: 27th November 2012 Issued Date: 27th November 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd Y Fuwch **Status: Effective** Positional Accuracy: Located by supplier to within 10m	A9SW (S)	889	2	219268 246059
12	**Discharge Consents** Operator: The Occupier Property Type: Undefined Or Other Location: Dwel Pt Os 452 Pontycleifion Cardi, Pontycleifion Cardigan Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bn0165301 Permit Version: 1 Effective Date: 16th March 1977 Issued Date: 16th March 1977 Revocation Date: 16th September 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: To Land Nr. River Teify **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A8SW (S)	913	2	218700 246000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Discharge Consents** Operator: Mr Evan George Harries Property Type: Domestic Property (Single) Location: Penmorfa Llangoedmor Cardigan, Llangoedmor, Ceredigion, Sa43 2ld Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Bp0305801 Permit Version: 1 Effective Date: 12th April 2003 Issued Date: 12th April 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Nant Rhyd Y Fuwch **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	A3NW (S)	914	2	218882 245970
14	**Prosecutions Relating to Controlled Waters** Location: Afon Mwldarn, CARDIGAN, Dyfed, SA43 Prosecution Text: EA News Release 03/09/1997, Causing polluting matter to enter the Afon Mwldarn from a building site in Cardigan and causing trade effluent to be discharged in excess of consent limits. Prosecution Act: WRA91 s85(1)(6) Hearing Date: 3rd September 1997 Verdict: Guilty Fine: 500 Cost: 100 Positional Accuracy: Manually positioned within the geographical locality	A12NW (W)	820	4	218004 247032
15	**Local Authority Pollution Prevention and Controls** Name: Tesco Stores Ltd Location: Aberystwyth Road, CARDIGAN, Dyfed, SA43 1NA Authority: Ceredigion Council, Environmental Health Department Permit Reference: LAEPR/1.4/C/01 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status:** **Permitted** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	135	3	218790 246857
	Nearest Surface Water Feature	A13SE (SE)	22	-	219000 246900
16	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Opposite Kwick, Save To T, Junction Grove Authority: Environment Agency, Welsh Region Pollutant: Oils - Other Oil Note: Deliberate Act Incident Date: 9th February 1995 Incident Reference: 22479 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Direct Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (NW)	466	4	218400 247250
17	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 2nd May 1991 Incident Reference: 319 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	700	4	219500 247500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Near Ps Oveflow Authority: Environment Agency, Welsh Region Pollutant: Chemicals - Paints / Dyes Note: Poor Management Control Incident Date: 23rd July 1996 Incident Reference: 29262 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SW (W)	808	4	218100 246700
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Near Ps Oveflow Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Poor Management Control Incident Date: 23rd July 1996 Incident Reference: 29262 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SW (W)	810	4	218100 246695
19	**Pollution Incidents to Controlled Waters** Property Type: Cattle Beef Farming: Yards Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Weather Incident Date: 22nd March 1996 Incident Reference: 28724 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (S)	891	4	219250 246050
19	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Weather Incident Date: 22nd March 1996 Incident Reference: 28724 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (S)	896	4	219250 246045
20	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Near Road Bridge On, A484 Road, LLANGOEDMOR Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Afon Teifi Tributary; Run-Off Incident Date: 13th February 1998 Incident Reference: 34971 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Deliberate Act Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	944	4	219700 246300
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Fron Teifi, Llangoedmor, CARDIGAN Authority: Environment Agency, Welsh Region Pollutant: Mud/Clay/Soil Note: Not Supplied Incident Date: 13th June 1996 Incident Reference: 28863 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A3NE (S)	985	4	219000 245900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Thyssen Construction Ltd Licence Number: 22/62/3/0025 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: General Industrial Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 20 Yearly Rate (m3): 3660 Details: Inland Water Known As Afon Mwldan Cardigan Ceredigion Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A6NE (W)	1115	4	217790 246640
	Water Abstractions Operator: Cardigan Sand And Gravel Company Ltd Licence Number: 22/62/3/0003 Permit Version: 100 Location: Mwldan Brook Authority: Environment Agency, Welsh Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Mwldan Brook Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A24SW (NE)	1299	4	219460 248280
	Water Abstractions Operator: Cardigan Sand And Gravel Company Ltd Licence Number: 22/62/3/0003 Permit Version: 100 Location: Surface Springs And Stream Authority: Environment Agency, Welsh Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Surface Springs And Stream Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A25SW (NE)	1450	4	219970 248100
	Water Abstractions Operator: Tarmac Trading Limited Licence Number: Wa/062/0003/0008 Permit Version: Not Supplied Location: Cardigan Readymix, Tanbryn, Penparc, Cardigan, Sa43 1rb Authority: Natural Resources Wales Abstraction: Construction: Dust Suppression Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied 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	A25SW (NE)	1503	2	220119 248012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Tarmac Trading Limited Licence Number: Wa/062/0003/0008 Permit Version: Not Supplied Location: Cardigan Readymix, Tanbryn, Penparc, Cardigan, Sa43 1rb Authority: Natural Resources Wales Abstraction: Construction: General Washing/Process Washing Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied 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	A25SW (NE)	1503	2	220119 248012
	Water Abstractions Operator: Tarmac Trading Limited Licence Number: Wa/062/0003/0008 Permit Version: Not Supplied Location: Cardigan Readymix, Tanbryn, Penparc, Cardigan, Sa43 1rb Authority: Natural Resources Wales Abstraction: Construction: Process Water Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied 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	A25SW (NE)	1503	2	220119 248012
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Low Vulnerability Combined Vulnerability: Low Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: >10m Superficial Recharge: No Data	A13NE (W)	0	2	218915 246996
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: 40-70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13NE (N)	0	2	218915 247000
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A13NE (W)	0	2	218915 246996
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (W)	0	2	218915 246996
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 601.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (SE)	22	5	219000 246900
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 53.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (SE)	56	5	219038 246894
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 122.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13NW (NW)	58	5	218814 247122
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 24.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (SE)	84	5	219079 246927
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 347.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (E)	104	5	219100 246939
27	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 13.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (SE)	258	5	219155 246721
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 347.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A13SE (SE)	260	5	219146 246711
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 60.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NW (S)	318	5	218792 246598

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 143.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 2	A13NW (NW)	332	5	218630 247326
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 145.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18SW (NW)	342	5	218664 247360
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 126.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18SW (NW)	343	5	218671 247365
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 244.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A12NE (NW)	358	5	218545 247283
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 394.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18SW (N)	372	5	218767 247447
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 586.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A18SW (N)	375	5	218758 247446
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 161.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NW (S)	376	5	218750 246555
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 231.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NE (W)	438	5	218400 247165
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14NW (E)	440	5	219414 247087

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 45.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14NW (E)	446	5	219420 247088
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 292.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A12NE (W)	448	5	218383 247133
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 577.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14NW (NE)	453	5	219349 247278
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 447.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NE (S)	461	5	218933 246421
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 54.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NE (S)	461	5	218933 246421
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 57.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14NW (NE)	463	5	219373 247249
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14NW (NE)	465	5	219363 247274
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 511.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NW (SW)	529	5	218623 246455
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 174.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18SE (N)	573	5	219014 247667

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 438.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8NE (S)	575	5	219115 246337
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NE (NW)	603	5	218269 247292
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NE (NW)	607	5	218266 247295
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: Underground Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18NE (N)	661	5	219129 247727
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18NE (N)	669	5	219129 247736
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 183.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A18NE (N)	671	5	219130 247737
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 210.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18NE (N)	671	5	219130 247737
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19SW (NE)	679	5	219351 247620
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19SW (NE)	683	5	219352 247625

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 205.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NW (W)	688	5	218139 247123
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 74.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A12NW (W)	688	5	218139 247122
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 140.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19SW (NE)	688	5	219353 247631
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 102.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A12NW (W)	749	5	218076 247100
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NW (W)	749	5	218076 247100
62	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 24.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NW (W)	758	5	218070 247135
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 85.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	761	5	219303 247755
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 101.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NW (W)	773	5	218057 247151
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 318.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A7NE (SW)	775	5	218328 246398

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 90.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	776	5	218715 246137
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A12NW (W)	799	5	218064 247304
68	**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: Teifi Primacy: 1	A12NW (W)	805	5	218060 247310
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 502.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A14SE (E)	808	5	219775 246727
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 404.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A12NW (W)	821	5	218003 247029
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	823	5	219377 247781
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	825	5	219381 247781
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 395.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A9SW (SE)	825	5	219442 246228
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	827	5	219414 247759

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 61.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	843	5	219413 247780
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 243.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A18NE (N)	847	5	219160 247912
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 720.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Mwldan Catchment Name: Teifi Primacy: 1	A18NE (N)	853	5	219169 247916
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 2	A8SW (S)	862	5	218665 246064
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	862	5	218665 246064
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 378.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A8SE (S)	863	5	219084 246033
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 55.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 2	A12NW (W)	865	5	217978 247237
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	868	5	218661 246059
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 37.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	883	5	218897 246000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 301.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	886	5	219455 247802
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	886	5	219455 247802
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A9NE (SE)	891	5	219646 246319
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 108.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	891	5	218666 246033
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 162.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A9SW (SE)	892	5	219332 246085
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 149.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Cynllo Catchment Name: Teifi Primacy: 1	A9SW (S)	899	5	219257 246044
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	900	5	219466 247812
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.8 Watercourse Level: Underground Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A8SE (S)	900	5	218922 245983
92	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 158.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A19NW (NE)	905	5	219470 247814

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A3NW (S)	909	5	218907 245974
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 83.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A3NW (S)	915	5	218875 245970
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 76.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A7SE (SW)	925	5	218509 246060
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 630.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A9SW (SE)	931	5	219403 246079
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 31.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A3NE (S)	934	5	218959 245949
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 37.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A11SE (W)	936	5	217894 246953
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A8SW (S)	937	5	218582 246014
100	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 54.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A23SE (N)	941	5	218979 248042
101	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 199.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A7SE (SW)	944	5	218456 246068

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 5.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A3NE (S)	950	5	218984 245934
103	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A3NE (S)	953	5	218989 245931
104	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 59.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 2	A11SE (W)	957	5	217877 246919
105	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 46.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A11SE (W)	957	5	217877 246919
106	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 168.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nant Rhyd-y-fuwch Catchment Name: Teifi Primacy: 1	A3NW (S)	979	5	218824 245910
107	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 25.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A3NW (S)	983	5	218719 245924
108	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 371.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A23SE (N)	984	5	219014 248082
109	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 162.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A11SE (W)	984	5	217857 246877
110	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A7SE (SW)	984	5	218316 246116

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 165.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A15SW (E)	994	5	219984 246833
112	**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: Teifi Primacy: 1	A2NE (S)	994	5	218560 245961
113	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 77.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A2NE (S)	994	5	218522 245977
114	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 77.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A17SW (NW)	998	5	217951 247542
115	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 99.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A3NW (S)	998	5	218618 245936
116	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 217.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Teifi Primacy: 1	A7SE (SW)	998	5	218488 245990

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	**Historical Landfill Sites** Licence Holder: Ceredigion County Council Location: Cardigan, Ceredigion Name: King Georges Field Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14334 First Input Date: 31st December 1910 Last Input Date: 31st December 1929 Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6820/0011 BGS Ref: Not Supplied Other Ref: Not Supplied	A7NE (SW)	639	2	218334 246635
118	**Historical Landfill Sites** Licence Holder: Ceredigion County Council Location: Cardigan Name: Bath House Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13919 First Input Date: 31st December 1910 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6820/0002 BGS Ref: Not Supplied Other Ref: Not Supplied	A7NW (SW)	907	2	218048 246589
	Local Authority Landfill Coverage Name: Ceredigion Council - Has supplied landfill data		0	3	218915 246996
119	**Local Authority Recorded Landfill Sites** Location: King George'S Field Reference: 10 Authority: Ceredigion Council, Environmental Health Department **Last Reported Status: Closed** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A7NW (SW)	771	3	218200 246600
120	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A13SE (SE)	290	-	219241 246778
121	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NE (W)	367	-	218457 247075
122	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A7NE (SW)	650	-	218330 246621
123	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A7NE (SW)	724	-	218264 246586
124	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12NW (W)	788	-	218081 247322
125	**Potentially Infilled Land (Non-Water)** Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A7NW (SW)	905	-	218049 246589
126	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A3NW (S)	987	-	218808 245903

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
127	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A13SW (SW)	95	-	218848 246840
128	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A13NW (N)	107	-	218884 247207
129	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A13NE (NE)	303	-	219120 247325
130	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A18SW (N)	405	-	218854 247504
131	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A14NW (NE)	455	-	219337 247302
132	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A14NW (E)	510	-	219485 247093
133	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A9NW (SE)	532	-	219310 246494
134	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A19SW (NE)	536	-	219402 247351
135	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A14NW (E)	543	-	219508 247135
136	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A18SE (N)	564	-	219031 247654
137	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A17SE (NW)	639	-	218250 247337
138	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1906	A7NE (SW)	642	-	218353 246599
139	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A14NE (E)	878	-	219810 247289
140	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A15SW (E)	932	-	219928 246973
141	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A11NE (W)	959	-	217873 247184

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Caradoc Rocks (Undifferentiated)	A13NE (W)	0	1	218915 246996
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (W)	0	1	218915 246996
	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	A12NE (NW)	368	1	218501 247234
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (NE)	461	1	219292 247377
	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	A12NE (W)	494	1	218343 247170
	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	A7NE (SW)	514	1	218549 246541
	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	A18SE (N)	533	1	218989 247630

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SE (E)	678	1	219673 246900
	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	A7NE (SW)	735	1	218400 246376
	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	A7NE (SW)	751	1	218319 246450
	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	A12SW (W)	762	1	218131 246740
	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	A7NE (SW)	772	1	218282 246469
	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	A7NE (SW)	782	1	218309 246412

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SW)	813	1	218339 246329
	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	A7NE (SW)	826	1	218286 246333
	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	A7NE (SW)	848	1	218258 246369
	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	A12NW (W)	892	1	217934 247000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	893	1	218195 246380
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (W)	933	1	218000 246620

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	942	1	218119 246408
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	944	1	218164 246331
142	**BGS Recorded Mineral Sites** Site Name: Pen-Lan Location: Cardigan, Cardigan, Ceredigion Source: British Geological Survey, National Geoscience Information Service Reference: 78181 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Dinas Island Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14SW (SE)	329	1	219286 246779
143	**BGS Recorded Mineral Sites** Site Name: Cnwc-Y-Dintir Sand Pit Location: Cardigan, Cardigan, Ceredigion Source: British Geological Survey, National Geoscience Information Service Reference: 78182 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary, Devensian Geology: Till, Devensian Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A12NE (W)	368	1	218457 247079
144	**BGS Recorded Mineral Sites** Site Name: Cardigan Common Location: Cardigan, Ceredigion Source: British Geological Survey, National Geoscience Information Service Reference: 78183 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	A7NE (SW)	729	1	218259 246584
145	**BGS Recorded Mineral Sites** Site Name: Cae-Morgan Location: Cardigan, Cardigan, Ceredigion Source: British Geological Survey, National Geoscience Information Service Reference: 78176 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Nantmel Mudstones Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	730	1	219450 247603

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
146	**BGS Recorded Mineral Sites** Site Name: Lan-Llynan Location: Cardigan, Cardigan, Ceredigion Source: British Geological Survey, National Geoscience Information Service Reference: 78175 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Ordovician Geology: Nantmel Mudstones Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19NW (N)	975	1	219280 248005
	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 (W)	0	1	218915 246996
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	241	1	218845 246658
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	87	1	218955 246798
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	241	1	218845 246658
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	91	1	218833 247166
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	149	1	218889 247251
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	218	1	218607 247080
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	241	1	218845 246658
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	218915 246996

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
147	**Contemporary Trade Directory Entries** Name: Richards Bros Location: Brynteg, New Mill Road, Cardigan, Dyfed, SA43 1QT Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (N)	118	-	218920 247221
148	**Contemporary Trade Directory Entries** Name: Weslec Ltd Location: Aberystwyth Road, Cardigan, Dyfed, SA43 1NA Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	132	-	218790 246862
148	**Contemporary Trade Directory Entries** Name: Lloyd Motors (Nissan) Location: Aberystwyth Road, CARDIGAN, Dyfed, SA43 1NA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	132	-	218790 246862
148	**Contemporary Trade Directory Entries** Name: Tesco Petrol Filling Stations Location: Aberystwyth Rd, Cardigan, Dyfed, SA43 1NA Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	133	-	218789 246862
149	**Contemporary Trade Directory Entries** Name: Tesco Petrol Station Location: Aberystwyth Road, Cardigan, Dyfed, SA43 1NA Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (S)	213	-	218803 246715
150	**Contemporary Trade Directory Entries** Name: Green Motors Ltd Location: Aberystwyth Rd, Cardigan, Dyfed, SA43 1NA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SW (SW)	228	-	218732 246774
151	**Contemporary Trade Directory Entries** Name: Cardigan Blinds Location: 32, Felin Ban Estate, Cardigan, Dyfed, SA43 1BB Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	301	-	218533 247135
152	**Contemporary Trade Directory Entries** Name: Cawdor Ford Location: Rhos Garage, Aberystwyth Road, CARDIGAN, Dyfed, SA43 1LZ Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	313	-	218671 246713
152	**Contemporary Trade Directory Entries** Name: Concrete Surfaces Uk Location: 8 NEWTOWN, ABERYSTWYTH ROAD, CARDIGAN, SA43 1LZ Classification: Concrete Products **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	340	-	218638 246714
153	**Contemporary Trade Directory Entries** Name: Aph Electrical Location: Springlea, Felin Ban Farm Estate, Cardigan, Dyfed, SA43 1PG Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	421	-	218427 247197
154	**Contemporary Trade Directory Entries** Name: J R Clarke & Son Location: Cnwc-y-Dintir, Cardigan, Dyfed, SA43 1BA Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	429	-	218395 247060
154	**Contemporary Trade Directory Entries** Name: Clarke Location: Cnwc y Dintir, Cardigan, Dyfed, SA43 1BA Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	429	-	218395 247060

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
155	**Contemporary Trade Directory Entries** Name: Desk Accessories Location: Capel House, New Mill Road, Cardigan, Dyfed, SA43 1QT Classification: Office Furniture & Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SW (N)	492	-	218795 247582
155	**Contemporary Trade Directory Entries** Name: Capel Brassware Location: Capel House, New Mill Road, Cardigan, Dyfed, SA43 1QT Classification: Brassware Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	496	-	218814 247590
156	**Contemporary Trade Directory Entries** Name: Mark Jukes Location: Drws y Coed, Caemorgan Road, Cardigan, Dyfed, SA43 1QU Classification: Joinery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	574	-	219498 247242
157	**Contemporary Trade Directory Entries** Name: Clynderwen & Cardiganshire Farmers Ltd Location: Unit 8, Parc Teifi Business Park, Cardigan, SA43 1EW Classification: Agricultural Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	605	-	218685 246331
158	**Contemporary Trade Directory Entries** Name: Green Dragon Location: Unit 15, Parc Teifi Business Park, Cardigan, Dyfed, SA43 1EW Classification: Fuel Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	655	-	218750 246254
159	**Contemporary Trade Directory Entries** Name: Screwfix Cardigan Location: UNIT 7, PARC TEIFI BUSINESS PARK, CARDIGAN, SA43 1EW Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	712	-	218557 246278
160	**Contemporary Trade Directory Entries** Name: Swallow Office Supplies Location: Unit 21 Parc Teifi Business Park, Cardigan, Dyfed, SA43 1EW Classification: Office Furniture & Equipment **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A8SW (S)	750	-	218626 246199
160	**Contemporary Trade Directory Entries** Name: Scented Silicone Location: Unit 12, Parc Teifi Business Park, Cardigan, SA43 1EW Classification: Silicones **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	751	-	218628 246196
160	**Contemporary Trade Directory Entries** Name: Ultima Cleaning Ltd Location: Unit 12, Parc Teifi Business Park, Cardigan, Dyfed, SA43 1EW Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	751	-	218628 246196
160	**Contemporary Trade Directory Entries** Name: Dragon Grafix Location: Parc House, Parc Teifi Business Park, Cardigan, Dyfed, SA43 1EW Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	792	-	218605 246162
160	**Contemporary Trade Directory Entries** Name: Parc Circuits Ltd Location: Parc House, Parc Teifi Business Park, Cardigan, Dyfed, SA43 1EW Classification: Printed Circuit Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	792	-	218605 246162
160	**Contemporary Trade Directory Entries** Name: Busy Bee Natural Location: PARC HOUSE, PARC TEIFI BUSINESS PARK, CARDIGAN, SA43 1EW Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	797	-	218598 246160

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
160	**Contemporary Trade Directory Entries** Name: Parc Circuit Technology Ltd Location: Parc House, Parc Teifi Business Park, Cardigan, SA43 1EW Classification: Printed Circuit Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	797	-	218598 246160
161	**Contemporary Trade Directory Entries** Name: Cleanup Services Location: Willowdene, Cardigan, Dyfed, SA43 1QY Classification: Blast Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	870	-	219811 247263
162	**Contemporary Trade Directory Entries** Name: R Rees Location: 64, North Road, Cardigan, Dyfed, SA43 1AA Classification: Coal & Smokeless Fuel Merchants & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	900	-	218113 246496
163	**Contemporary Trade Directory Entries** Name: Strand Gas Supplies Location: Rhoswerdd, Cardigan, Dyfed, SA43 1QY Classification: Gas Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	900	-	219852 247229
164	**Fuel Station Entries** Name: Tesco Cardigan Location: Aberystwyth Road , , Cardigan, Ceredigion, SA43 1NA Brand: TESCO Premises Type: Hypermarket **Status: Open** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	272	-	218702 246740
164	**Fuel Station Entries** Name: Rhos Garage Location: Aberystwyth Road , , Cardigan, Ceredigion, SA43 1LZ Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	313	-	218671 246713
165	**Fuel Station Entries** Name: Cams Service Station Location: Aberystwyth Road , , Cardigan, Ceredigion, SA43 1LU Brand: ESSO Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	334	-	218623 246748
166	**Points of Interest - Manufacturing and Production** Name: V James Location: 102 Maesglas, Cardigan, SA43 1AQ Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A12SE (W)	568	6	218285 246881
166	**Points of Interest - Manufacturing and Production** Name: V James Location: 102 Maesglas, Cardigan, SA43 1AQ Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A12SE (W)	569	6	218284 246880
167	**Points of Interest - Manufacturing and Production** Name: Tank Location: SA43 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12NW (NW)	656	6	218226 247328
167	**Points of Interest - Manufacturing and Production** Name: A H & F M Wilson Location: Tregibby, Gwbert Road, Cardigan, SA43 1PH Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A17SE (NW)	657	6	218244 247366

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
168	**Points of Interest - Public Infrastructure** Name: Tesco Petrol Filling Station Location: Aberystwyth Rd, Cardigan, Dyfed, SA43 1NA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	132	6	218790 246862
169	**Points of Interest - Public Infrastructure** Name: Tesco Petrol Station Location: Aberystwyth Road, Cardigan, SA43 1NA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	272	6	218702 246740
169	**Points of Interest - Public Infrastructure** Name: Tesco Cardigan Location: Aberystwyth, Road, Cardigan, SA43 1NA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	272	6	218702 246740
169	**Points of Interest - Public Infrastructure** Name: Tesco Petrol Filling Station Location: Aberystwyth Road, Cardigan, Dyfed, SA43 1NA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	274	6	218700 246740
170	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	365	6	218549 247297
170	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	366	6	218510 247246
170	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	369	6	218543 247297
170	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	372	6	218504 247248
171	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	378	6	218714 247427
171	**Points of Interest - Public Infrastructure** Name: Weir Location: SA43 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	379	6	218709 247426
172	**Points of Interest - Public Infrastructure** Name: Sewage Pumping Station Location: SA43 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	555	6	218272 247110
173	**Points of Interest - Public Infrastructure** Name: Cardigan Police Station Location: Parc Teifi, Cardigan, SA43 1EW Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8SW (S)	592	6	218843 246298

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
174	**Points of Interest - Recreational and Environmental** Name: Play Area Location: SA43 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	342	6	218483 247084
175	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (SW)	476	6	218473 246719
175	**Points of Interest - Recreational and Environmental** Name: Playground Location: Maesglas, SA43 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SE (SW)	489	6	218463 246712
176	**Points of Interest - Recreational and Environmental** Name: Playground Location: Gwbert Road, SA43 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	700	6	218208 246726
176	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	701	6	218206 246726
177	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	727	6	218244 246612

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
178	**Ancient Woodland** Name: Not Supplied Reference: 5406 Area(m²): 32371.45 Type: Restored Ancient Woodland Site	A13NW (NW)	318	2	218636 247317
179	**Ancient Woodland** Name: Not Supplied Reference: 5405 Area(m²): 7202.03 Type: Restored Ancient Woodland Site	A7NE (SW)	761	2	218355 246389
180	**Ancient Woodland** Name: Not Supplied Reference: 5403 Area(m²): 12768.35 Type: Ancient and Semi-Natural Woodland	A9SW (SE)	812	2	219441 246243
181	**Sites of Special Scientific Interest** Name: Afon Teifi Multiple Areas: Y Total Area (m2): 7781788.17 Source: Natural Resources Wales Reference: 102732wlu Designation Details: Mixed Biological And Geological Designation Date: 8th December 1997 Date Type: Notified	A3NW (S)	965	2	218733 245939
182	**Special Areas of Conservation** Name: Afon Teifi / River Teifi Multiple Areas: Y Total Area (m2): 7214141.53 Source: Natural Resources Wales Reference: Uk0012670 **Status: Designated**	A3NW (S)	965	2	218733 245939

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Natural Resources Wales	June 2020	Annually
Ceredigion Council - Environmental Health Department	March 2014	Annual Rolling Update
Pembrokeshire County Council - Public Protection Division	September 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	August 2014	Quarterly
Natural Resources Wales	October 2022	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	January 2021	Quarterly
Natural Resources Wales	October 2022	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Ceredigion Council - Environmental Health Department	February 2015	Variable
Pembrokeshire County Council - Environmental Health Department	November 2015	Variable
Local Authority Pollution Prevention and Controls		
Ceredigion Council - Environmental Health Department	February 2015	Annual Rolling Update
Pembrokeshire County Council - Environmental Health Department	November 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Ceredigion Council - Environmental Health Department	February 2015	Variable
Pembrokeshire County Council - Environmental Health Department	November 2015	Variable
Nearest Surface Water Feature		
Ordnance Survey	December 2022	
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	July 2015	
Natural Resources Wales	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	March 2013	
Natural Resources Wales	March 2013	
Registered Radioactive Substances		
Natural Resources Wales	January 2015	
Environment Agency - Welsh Region	June 2016	As notified
Substantiated Pollution Incident Register		
Environment Agency Wales - South West Area	January 2021	Quarterly
Natural Resources Wales	October 2022	Quarterly
Water Abstractions		
Environment Agency - Welsh Region	October 2022	Quarterly
Natural Resources Wales	October 2022	Quarterly
Water Industry Act Referrals		
Environment Agency - Welsh Region	October 2017	
Natural Resources Wales	October 2022	Quarterly
Groundwater Vulnerability Map		
Natural Resources Wales	June 2018	As notified
Bedrock Aquifer Designations		
Natural Resources Wales	January 2018	Annually
Superficial Aquifer Designations		
Natural Resources Wales	January 2018	Annually

Data Currency

Agency & Hydrological	Version	Update Cycle
Source Protection Zones Natural Resources Wales	July 2022	Annual Rolling Update
Extreme Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Flooding from Rivers or Sea without Defences Natural Resources Wales	September 2020	
Areas Benefiting from Flood Defences Natural Resources Wales	November 2019	Quarterly
Flood Water Storage Areas Natural Resources Wales	August 2019	Quarterly
Flood Defences Natural Resources Wales	November 2019	Quarterly
OS Water Network Lines Ordnance Survey	January 2023	Quarterly
Surface Water 1 in 30 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water 1 in 100 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent Natural Resources Wales	May 2018	Annually
Surface Water Suitability Natural Resources Wales	February 2016	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites		
Natural Resources Wales	July 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Welsh Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Natural Resources Wales	October 2021	Quarterly
Environment Agency Wales - South West Area	October 2022	Quarterly
Licensed Waste Management Facilities (Locations)		
Natural Resources Wales	December 2022	Quarterly
Environment Agency Wales - South West Area	July 2021	Quarterly
Local Authority Landfill Coverage		
Ceredigion Council - Environmental Health Department	February 2003	Not Applicable
Pembrokeshire County Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
Ceredigion Council - Environmental Health Department	October 2018	
Pembrokeshire County 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 - South West Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency Wales - South West Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency Wales - South West Area	June 2015	
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	January 2022	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
Ceredigion Council - Planning Department	February 2016	Variable
Pembrokeshire Coast National Park Authority - Development Control	February 2016	Variable
Pembrokeshire County Council - Planning Department	October 2015	Variable
Planning Hazardous Substance Consents		
Ceredigion Council - Planning Department	February 2016	Variable
Pembrokeshire Coast National Park Authority - Development Control	February 2016	Variable
Pembrokeshire County Council - Planning Department	October 2015	Variable

Data Currency

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	November 2022	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	September 2022	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	September 2022	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	October 2022	Quarterly
Fuel Station Entries Catalist Ltd - Experian	January 2023	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Points of Interest - Commercial Services PointX	December 2022	Quarterly
Points of Interest - Education and Health PointX	December 2022	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2022	Quarterly
Points of Interest - Public Infrastructure PointX	December 2022	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2022	Quarterly
Underground Electrical Cables National Grid	May 2021	Bi-Annually

Data Currency

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural Resources Wales	September 2018	Bi-Annually
Areas of Adopted Green Belt		
Ceredigion Council	July 2022	Quarterly
Pembrokeshire Coast National Park Authority - Development Control	July 2022	Quarterly
Pembrokeshire County Council	July 2022	Quarterly
Areas of Unadopted Green Belt		
Ceredigion Council	July 2022	Quarterly
Pembrokeshire Coast National Park Authority - Development Control	July 2022	Quarterly
Pembrokeshire County Council	July 2022	Quarterly
Areas of Outstanding Natural Beauty		
Natural Resources Wales	August 2022	Bi-Annually
Environmentally Sensitive Areas		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Ceredigion Council	August 2018	Bi-Annually
Pembrokeshire County Council	August 2018	Bi-Annually
Marine Nature Reserves		
Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves		
Natural Resources Wales	February 2022	Bi-Annually
National Parks		
Natural Resources Wales	February 2018	Annually
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	April 2016	
Natural Resources Wales	July 2019	Bi-Annually
Ramsar Sites		
Natural Resources Wales	July 2019	Bi-Annually
Sites of Special Scientific Interest		
Natural Resources Wales	March 2020	Bi-Annually
Special Areas of Conservation		
Natural Resources Wales	August 2020	Bi-Annually
Special Protection Areas		
Natural Resources Wales	August 2018	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	**Ceredigion Council - Environmental Health Department** Penmorfa, Aberaeron, Ceredigion, Dyfed, SA46 0PA	Telephone: 01545 570881 Fax: 01545 572009 Website: www.ceredigion.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.gov.uk
6	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
7	**The National Assembly for Wales - GI Services (Department of Planning & Countryside)** Yr Hen Ysgol Gymraeg, Alexandria Road, Aberystwyth, Ceredigion, SY23 1LD	Telephone: 02920 825111 Website: www.wales.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LSGR	Landscaped Ground (Undivided)	Artificially Modified Ground	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Water, Type Unspecified	Not Supplied - Not Supplied
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TRD	Tidal River Or Creek Deposits	Clay, Silt and Sand	Not Supplied - Holocene
	SAMD	Saltmarsh Deposits	Clay and Silt	Not Supplied - Holocene
	TILDI	Till, Devensian (Irish Sea Ice)	Diamicton	Not Supplied - Devensian
	GFDIS	Glaciofluvial Deposits, Devensian (Irish Sea Ice)	Sand and Gravel	Not Supplied - Devensian
	GLDDI	Glaciolacustrine Deposits, Devensian (Irish Sea Ice)	Clay	Not Supplied - Devensian
	GDUDI	Glacial Deposits, Devensian (Irish Sea Ice)	Clay, Silt and Sand	Not Supplied - Devensian
	GDHI	Glacial Deposits, Heterogeneous, Devensian (Irish Sea Ice)	Clay And Gravel	Not Supplied - Devensian
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary
	HDTS	Head and Talus (Undifferentiated)	Gravel, Clayey	Not Supplied - Quaternary
	SUPD	Superficial Deposits	Sediment	Not Supplied - Quaternary
	LDE	Lacustrine Deposits	Clay and Silt	Not Supplied - Quaternary
	ALF	Alluvial Fan Deposits	Gravel	Not Supplied - Quaternary

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PEAT	Peat	Peat	Not Supplied - Quaternary
	BSA	Blown Sand	Sand	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	NTM	Nantmel Mudstones Formation	Mudstone	Not Supplied - Ashgill
	NTM	Nantmel Mudstones Formation	Sandstone	Not Supplied - Ashgill
	DIIS	Dinas Island Formation	Sandstone and Mudstone	Not Supplied - Caradoc
	CDMD	Cwm Degwel Mudstone Member	Mudstone	Not Supplied - Caradoc
	NPMU	Net Pool Mudstone	Mudstone	Not Supplied - Caradoc
		Faults		

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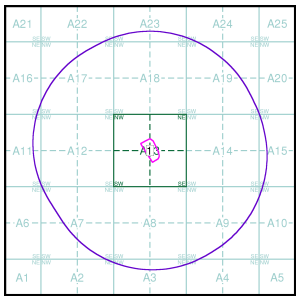
Geology 1:50,000 Maps

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

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**193**
Map Name:	**Cardigan**
Map Date:	**2003**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A

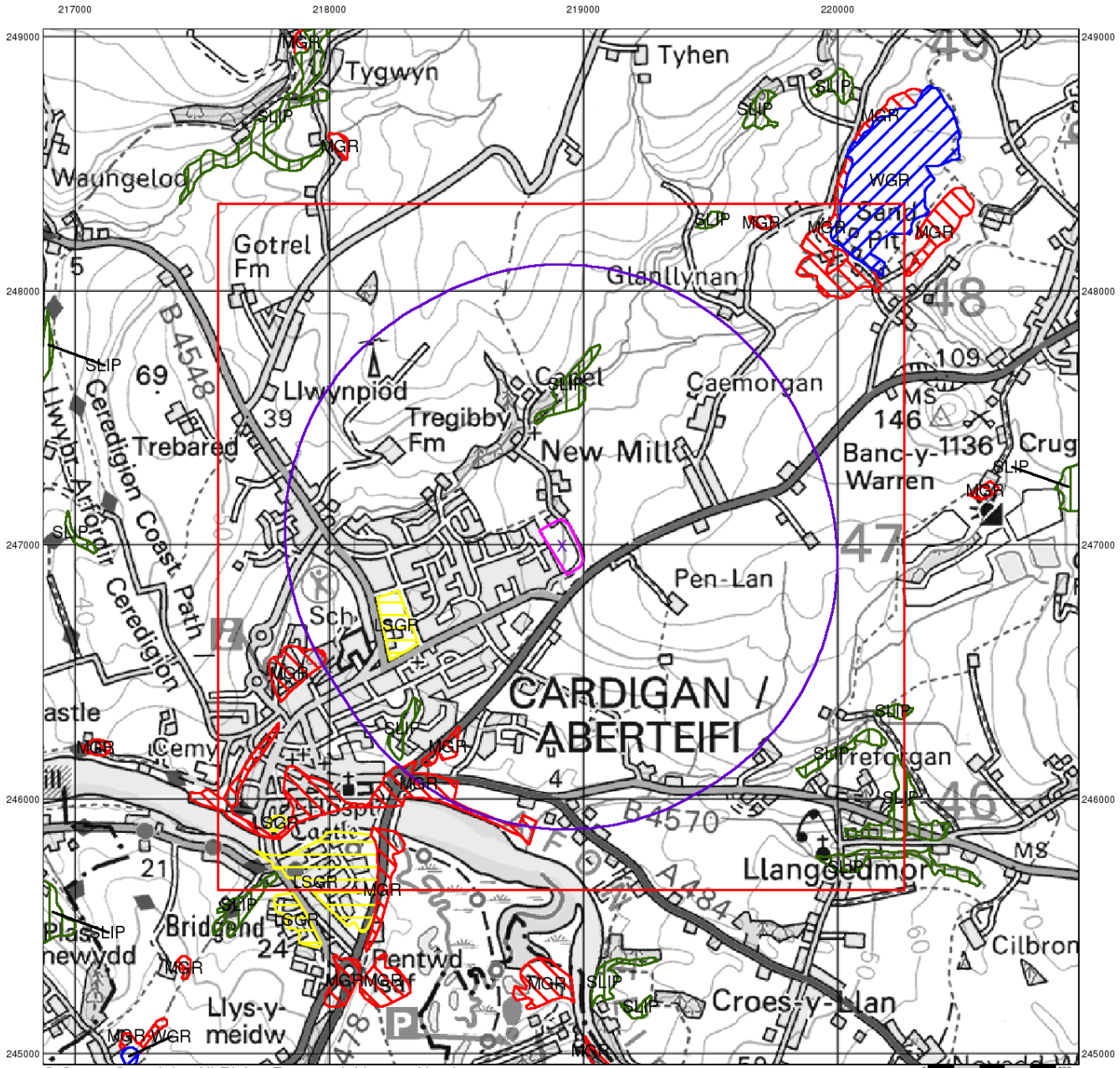


Order Details:

Order Number:	306860604_1_1
Customer Reference:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details:

new mill road, Cardigan, SA43 1NE



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Artificial Ground and Landslip

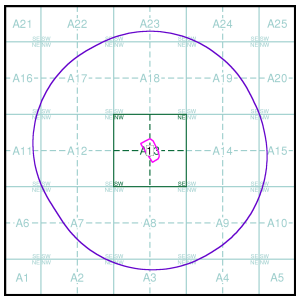
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice A

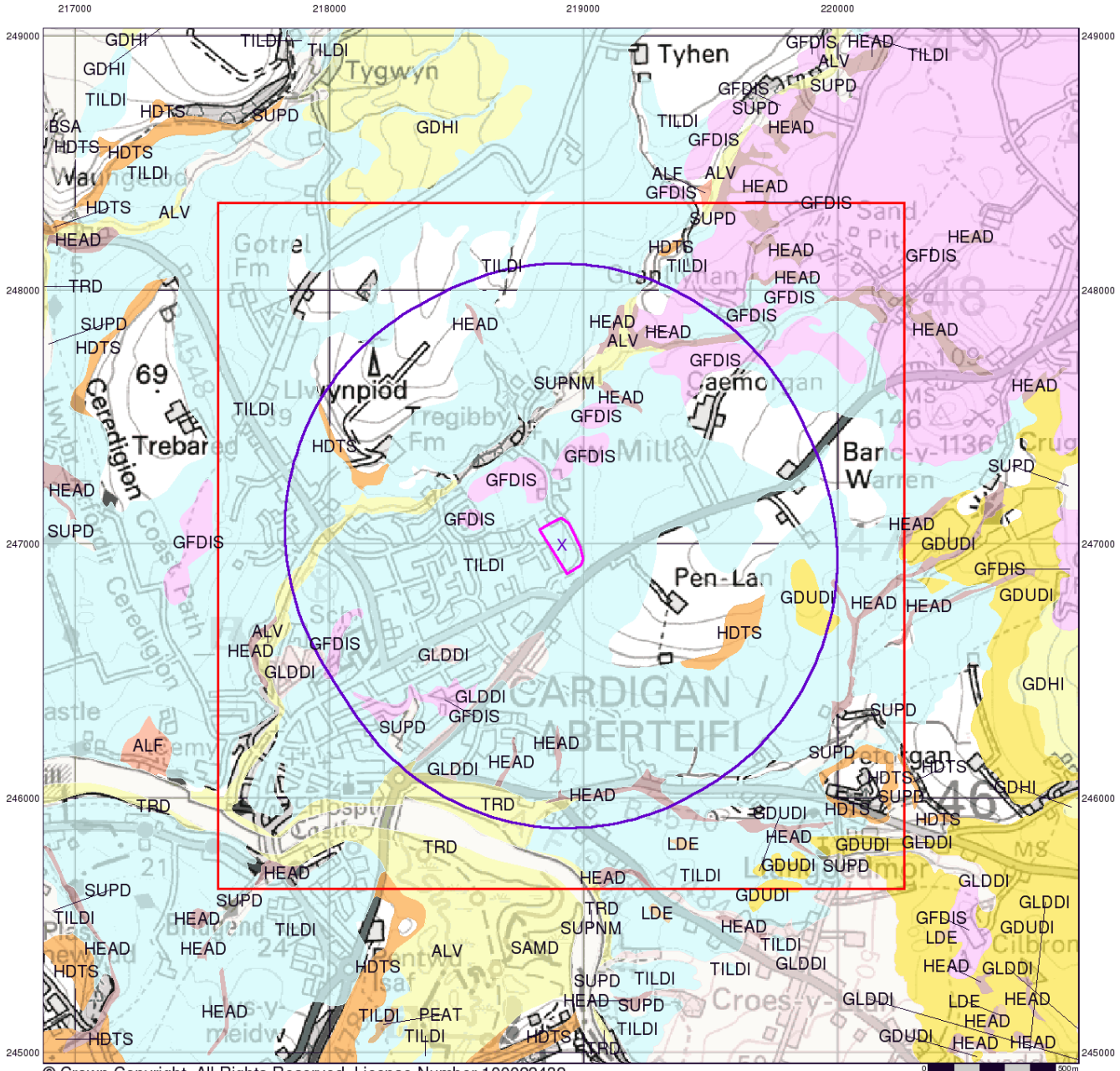


Order Details:

Order Number:	306860604_1_1
Customer Reference:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details:

new mill road, Cardigan, SA43 1NE



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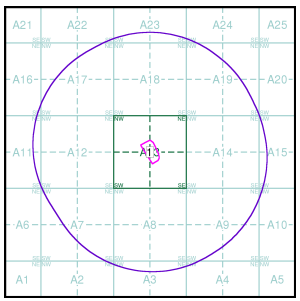
Superficial Geology

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

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

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

Superficial Geology Map - Slice A



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Customer Reference:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details:

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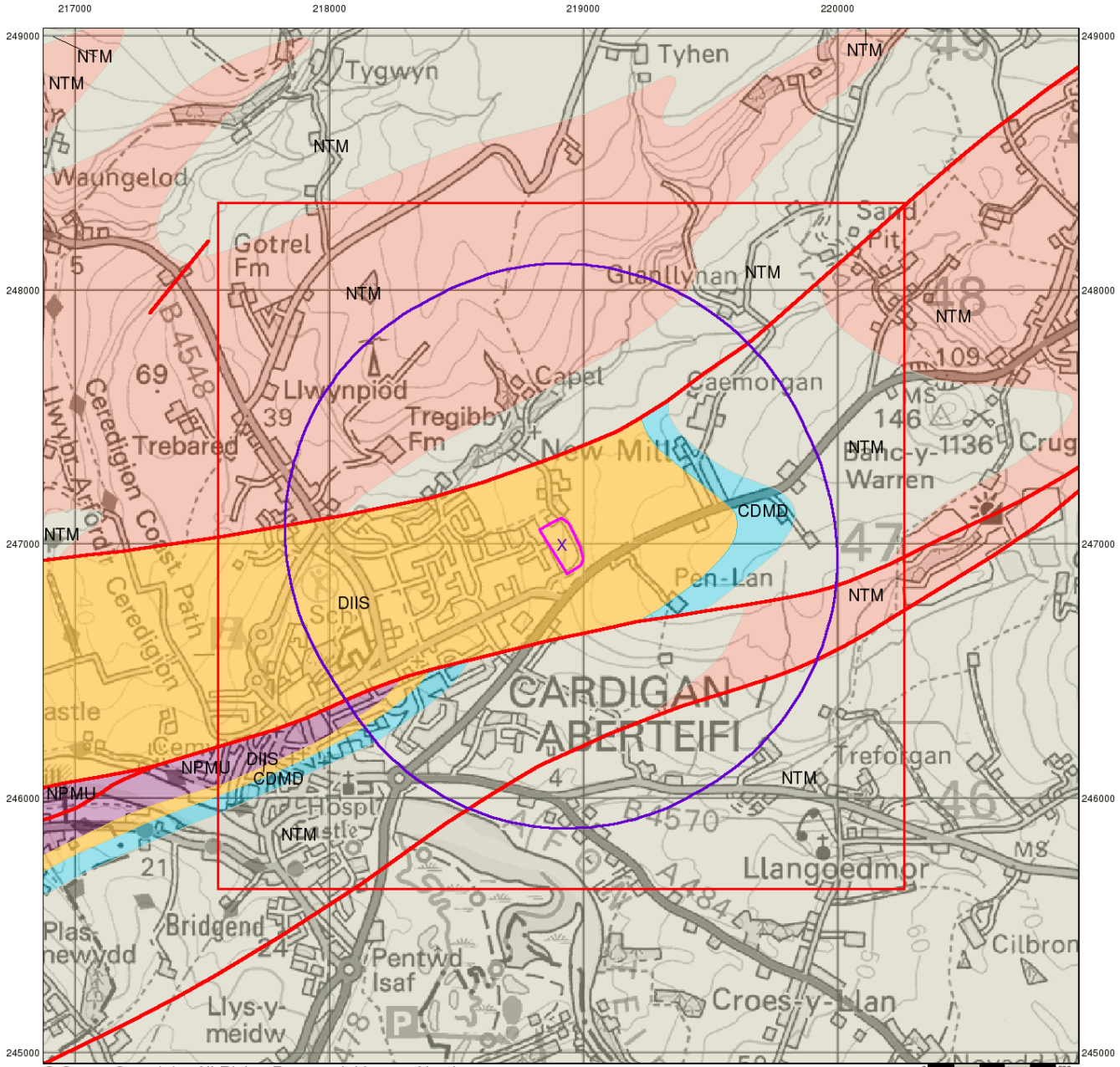
Web: www.envirocheck.co.uk



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Bedrock and Faults

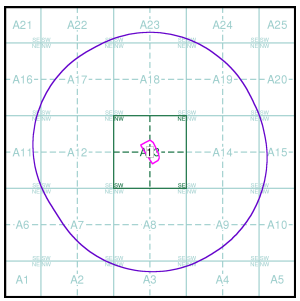
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice A



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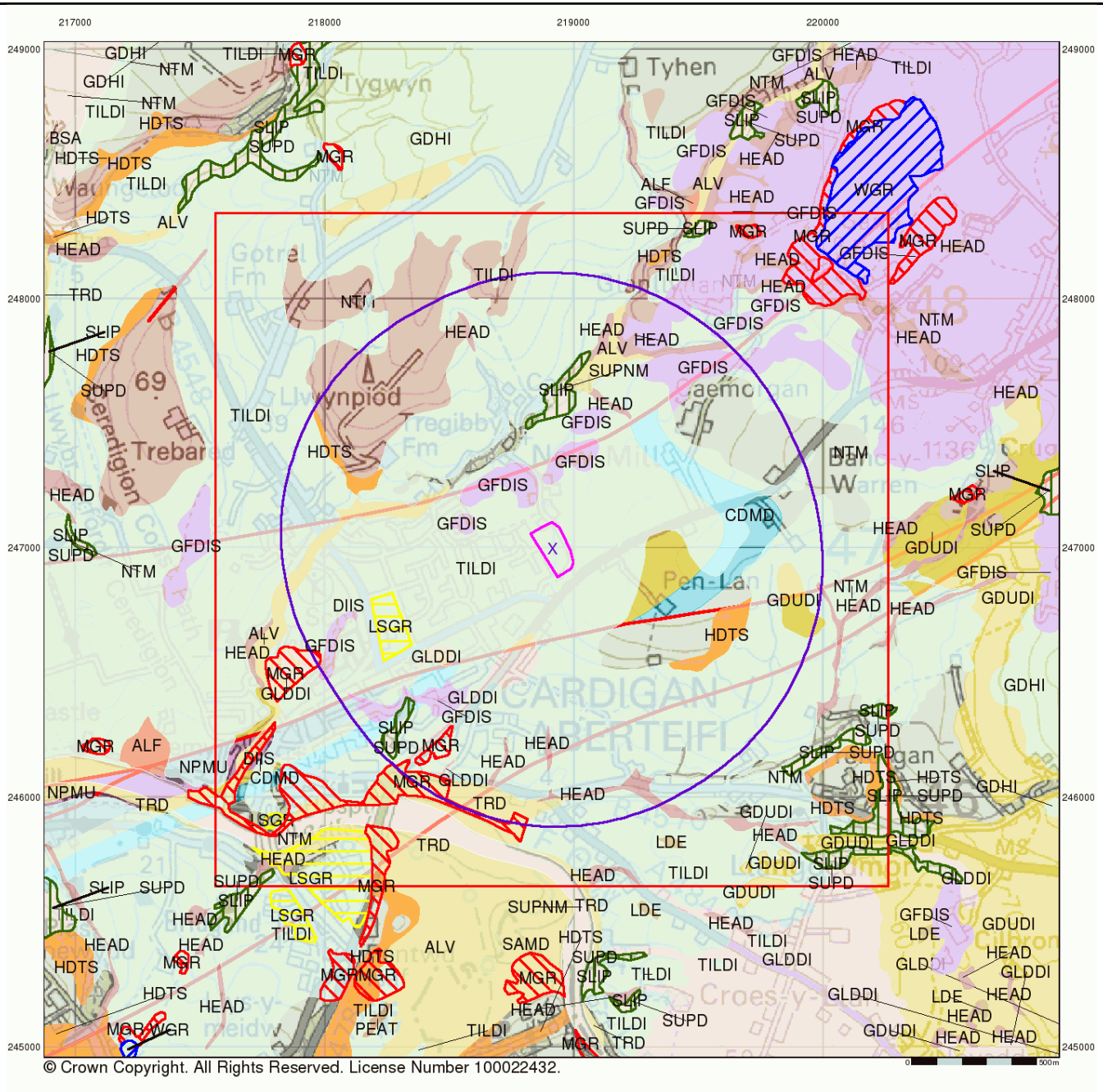

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Combined Surface Geology

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

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

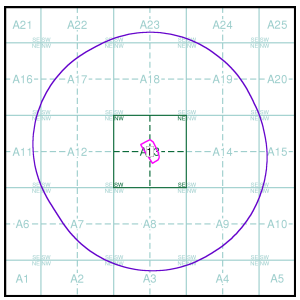
Additional Information

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

Contact

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

Combined Geology Map - Slice A



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

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

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
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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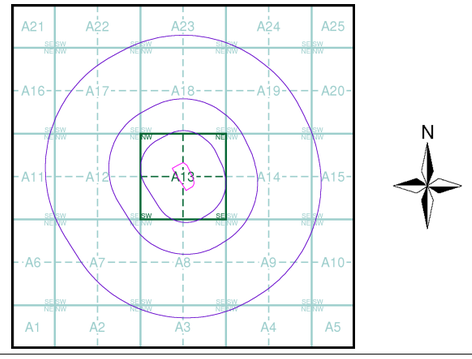
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Pembrokeshire	1:10,560	1888	2
Cardiganshire	1:10,560	1889	3
Cardiganshire	1:10,560	1906 - 1907	4
Pembrokeshire	1:10,560	1907	5
Cardiganshire	1:10,560	1938 - 1953	6
Pembrokeshire	1:10,560	1953	7
Cardiganshire	1:10,560	1953	8
Ordnance Survey Plan	1:10,000	1963	9
Ordnance Survey Plan	1:10,000	1980 - 1984	10
Ordnance Survey Plan	1:10,000	1993	11
10K Raster Mapping	1:10,000	2000	12
10K Raster Mapping	1:10,000	2006	13
VectorMap Local	1:10,000	2022	14

Historical Map - Slice A



Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

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Fax: 0844 844 9951
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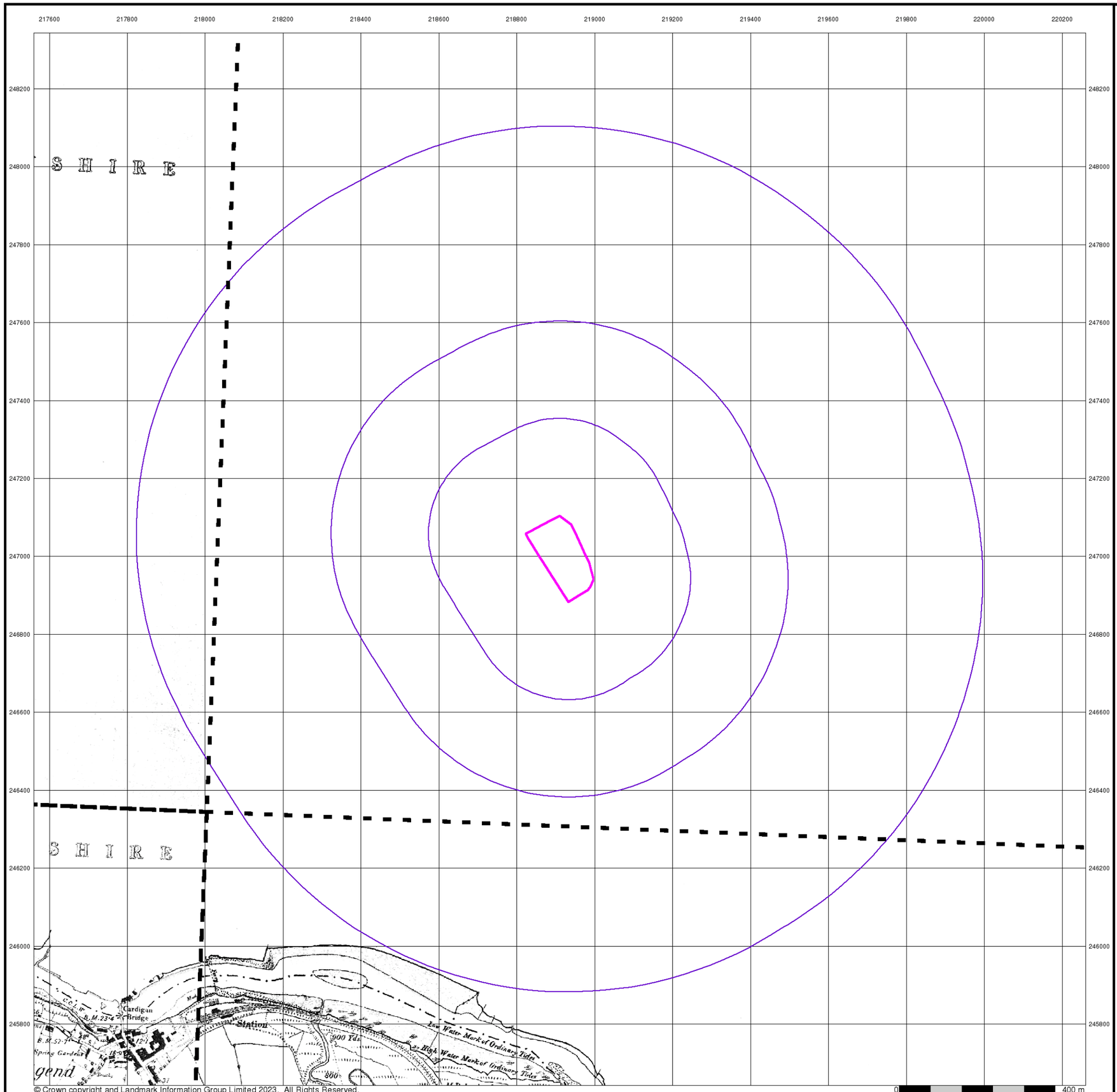

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Pembrokeshire

Published 1888

Source map scale - 1:10,560

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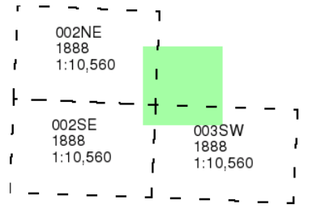
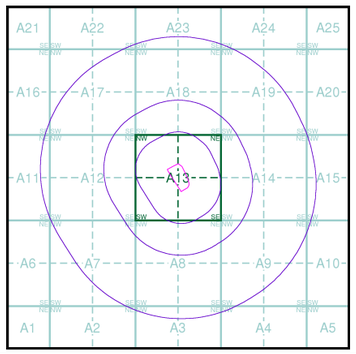
Map Name(s) and Date(s)



Historical Map - Slice A



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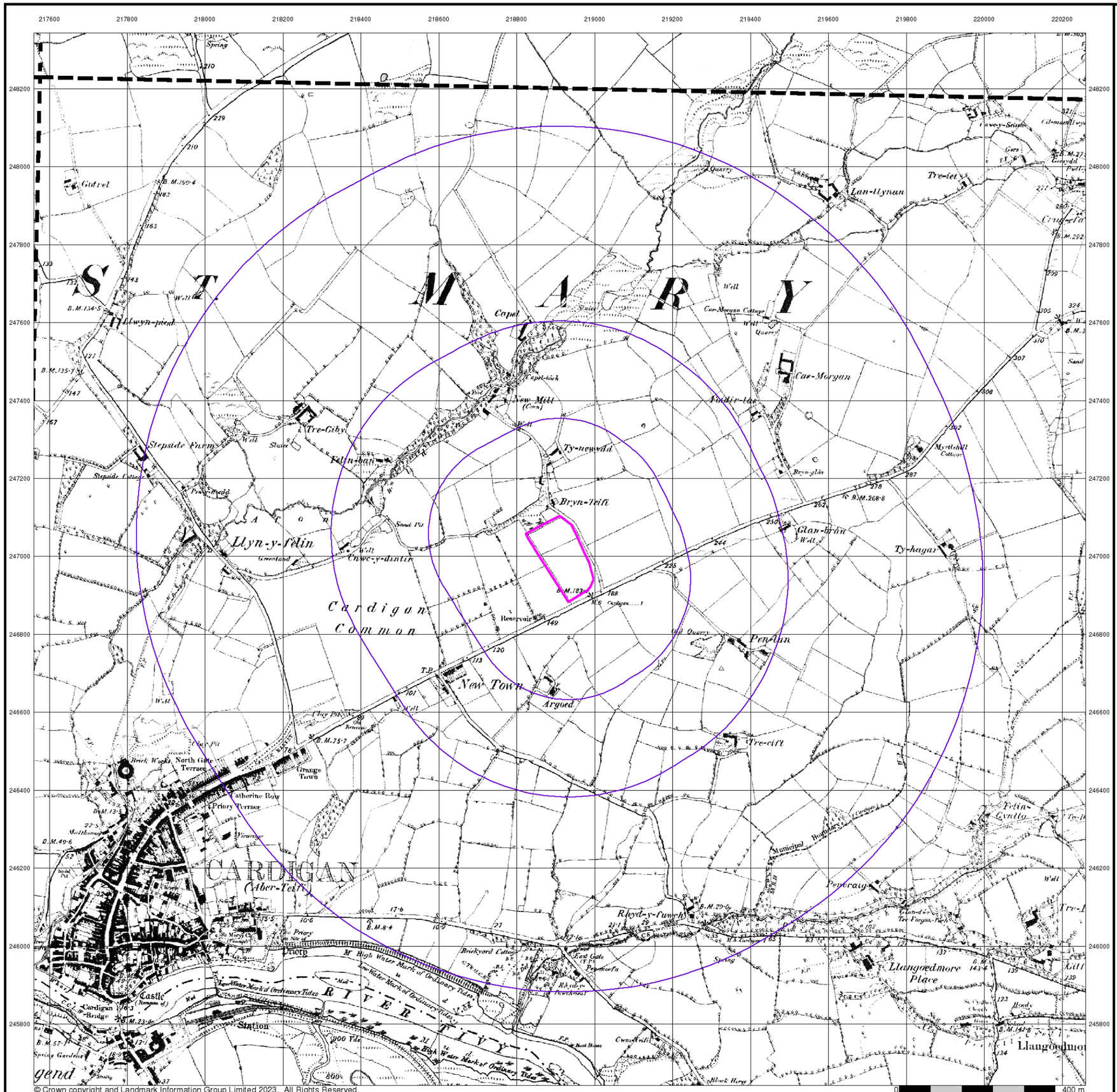

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Cardiganshire

Published 1889

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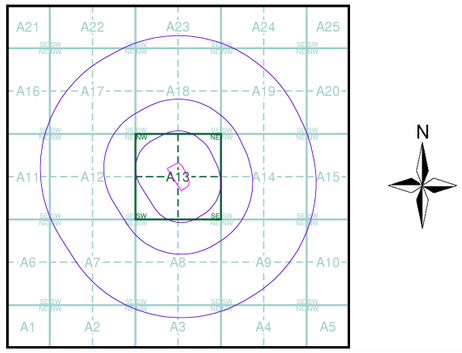
Map Name(s) and Date(s)

029SE 1889 1:10,560	030SW 1889 1:10,560
037NE 1889 1:10,560	038NW 1889 1:10,560

Historical Map - Slice A



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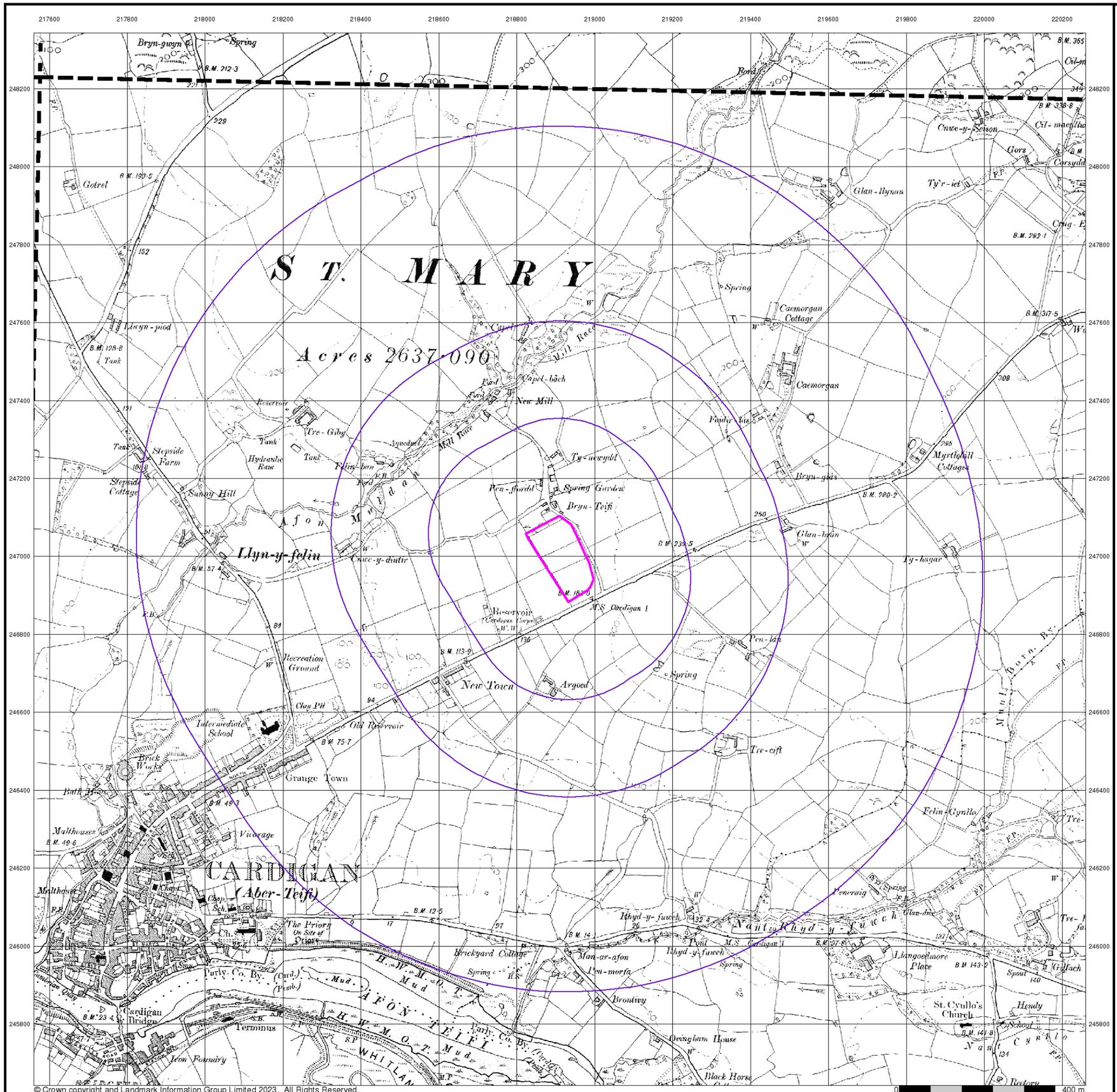

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Cardiganshire

Published 1906 - 1907

Source map scale - 1:10,560

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Map Name(s) and Date(s)

Historical Map - Slice A

N

Order Details

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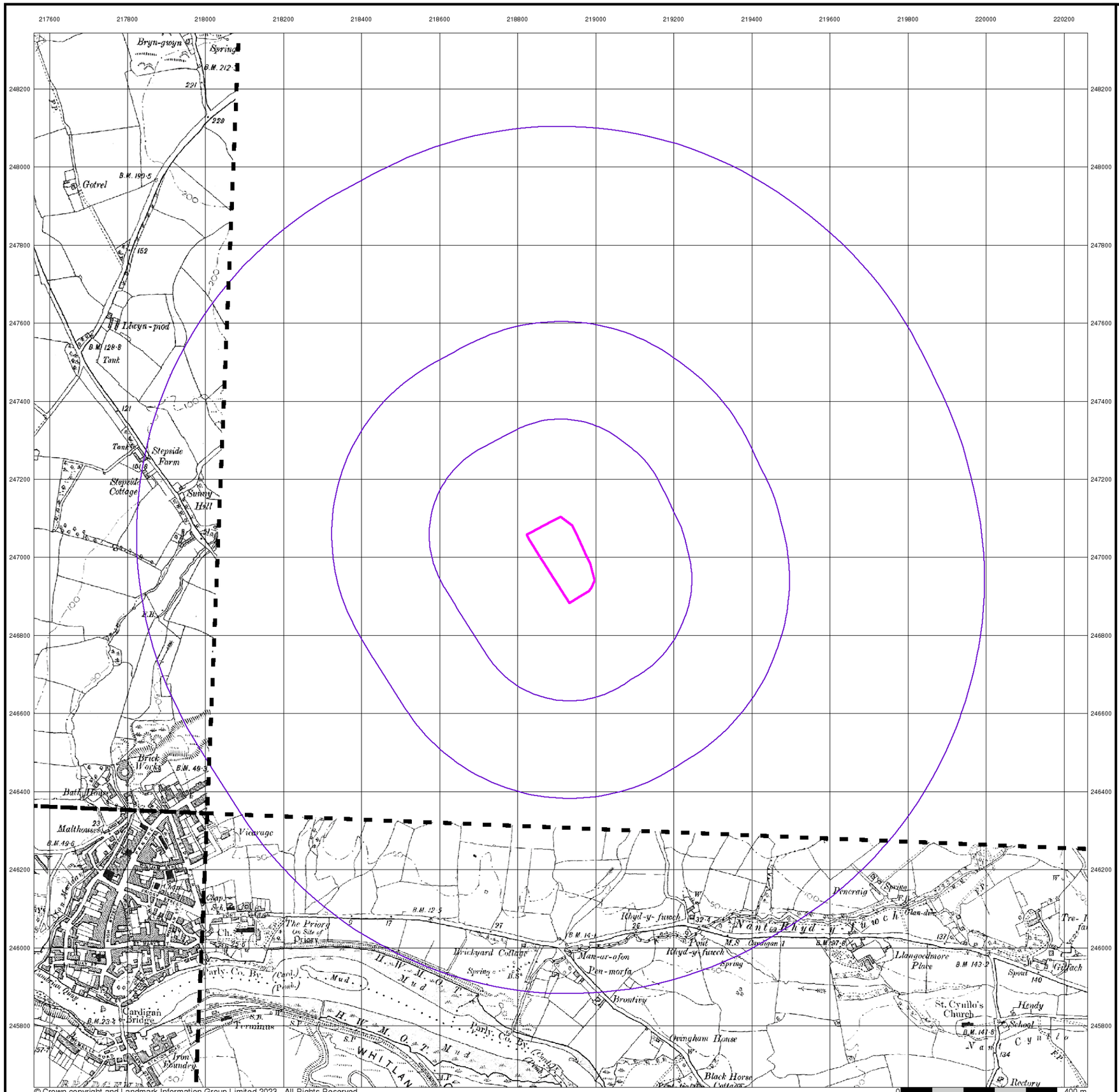

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Pembrokeshire

Published 1907

Source map scale - 1:10,560

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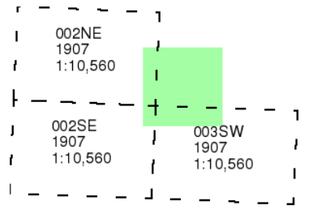
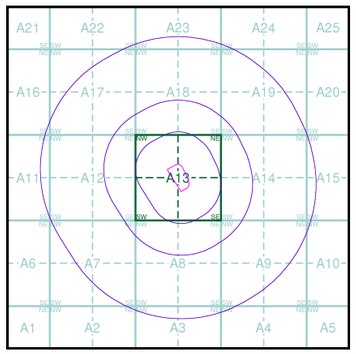


Historical Map - Slice A



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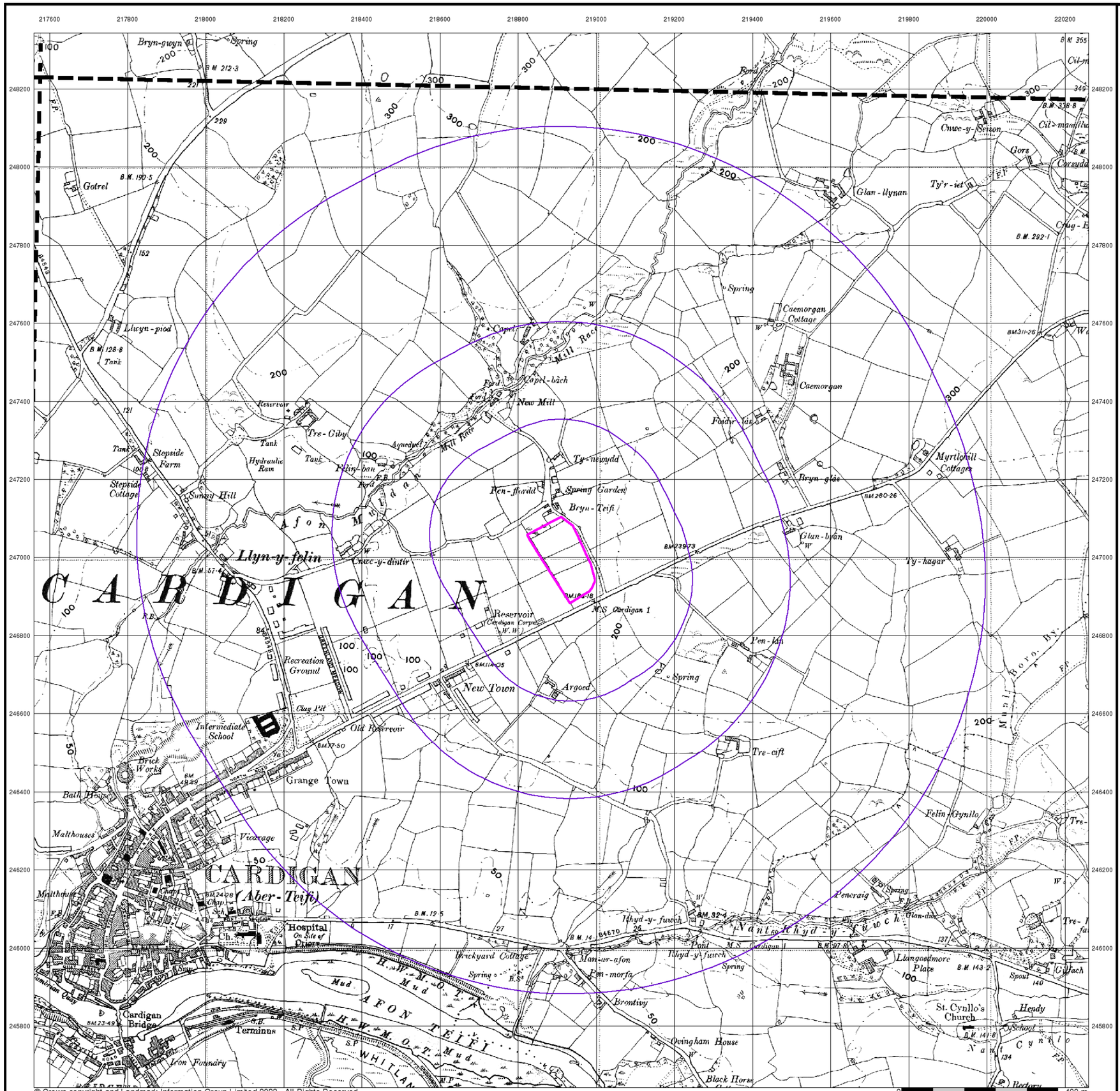

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Cardiganshire

Published 1938 - 1953

Source map scale - 1:10,560

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Map Name(s) and Date(s)

Historical Map - Slice A

N

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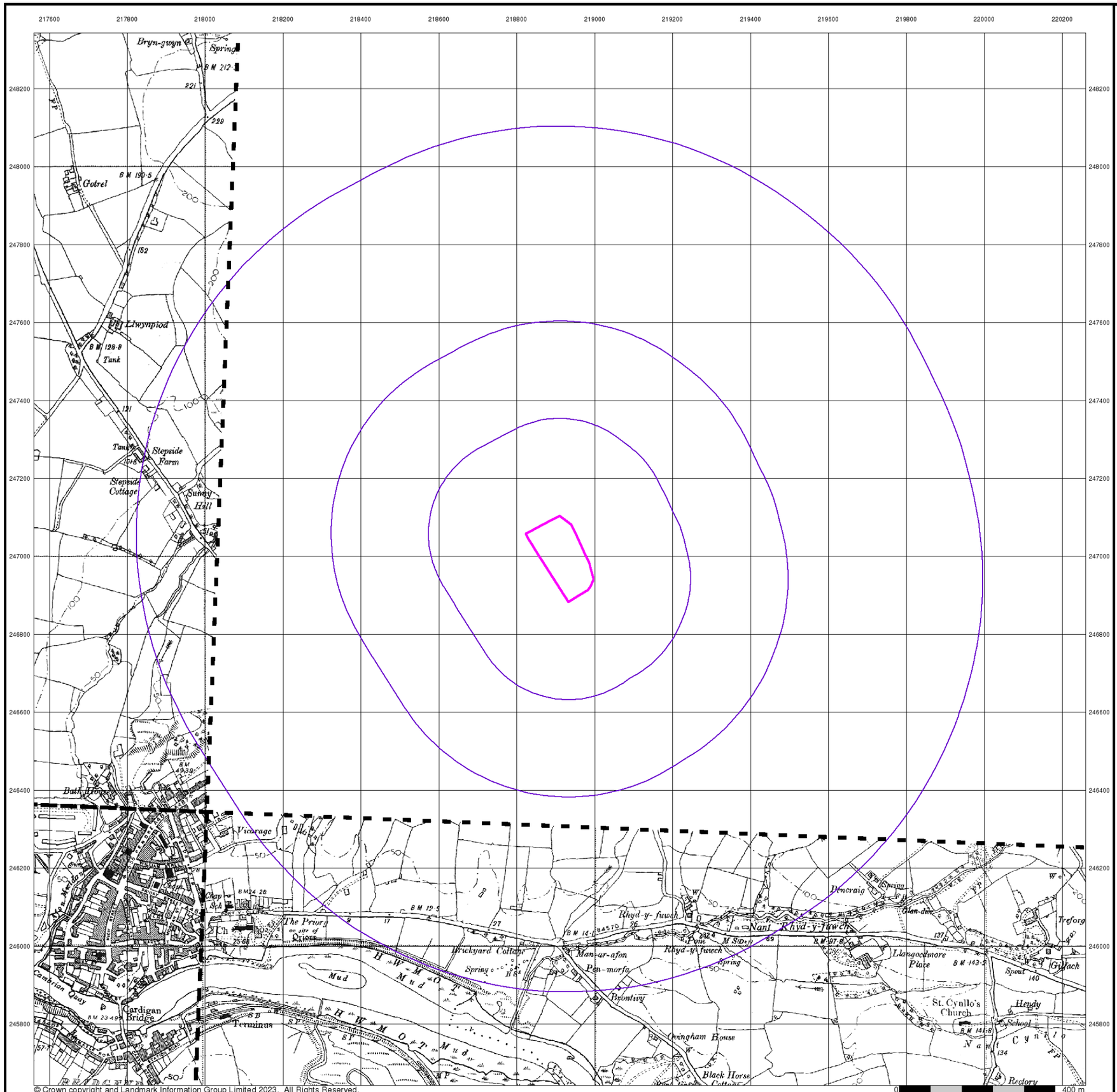

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Pembrokeshire

Published 1953

Source map scale - 1:10,560

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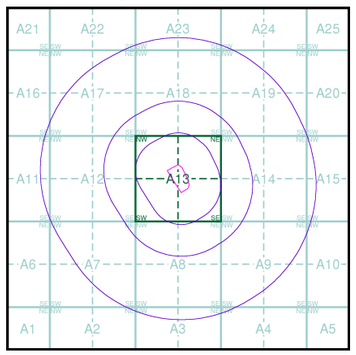
Map Name(s) and Date(s)

002NE
1953
1:10,560

002SE
1953
1:10,560

003SW
1953
1:10,560

Historical Map - Slice A



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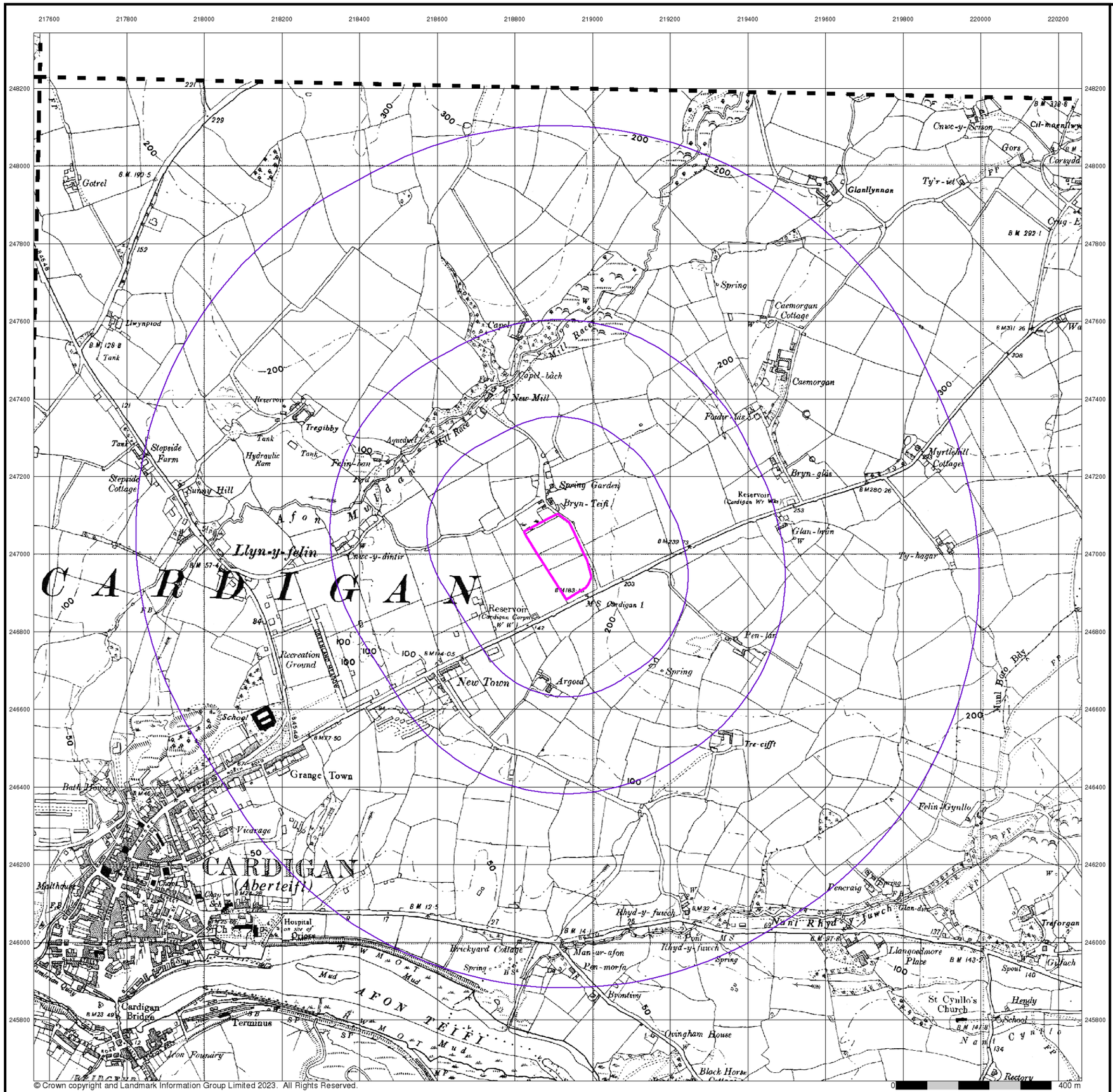

0 400 m

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Cardiganshire

Published 1953

Source map scale - 1:10,560

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Map Name(s) and Date(s)

Historical Map - Slice A

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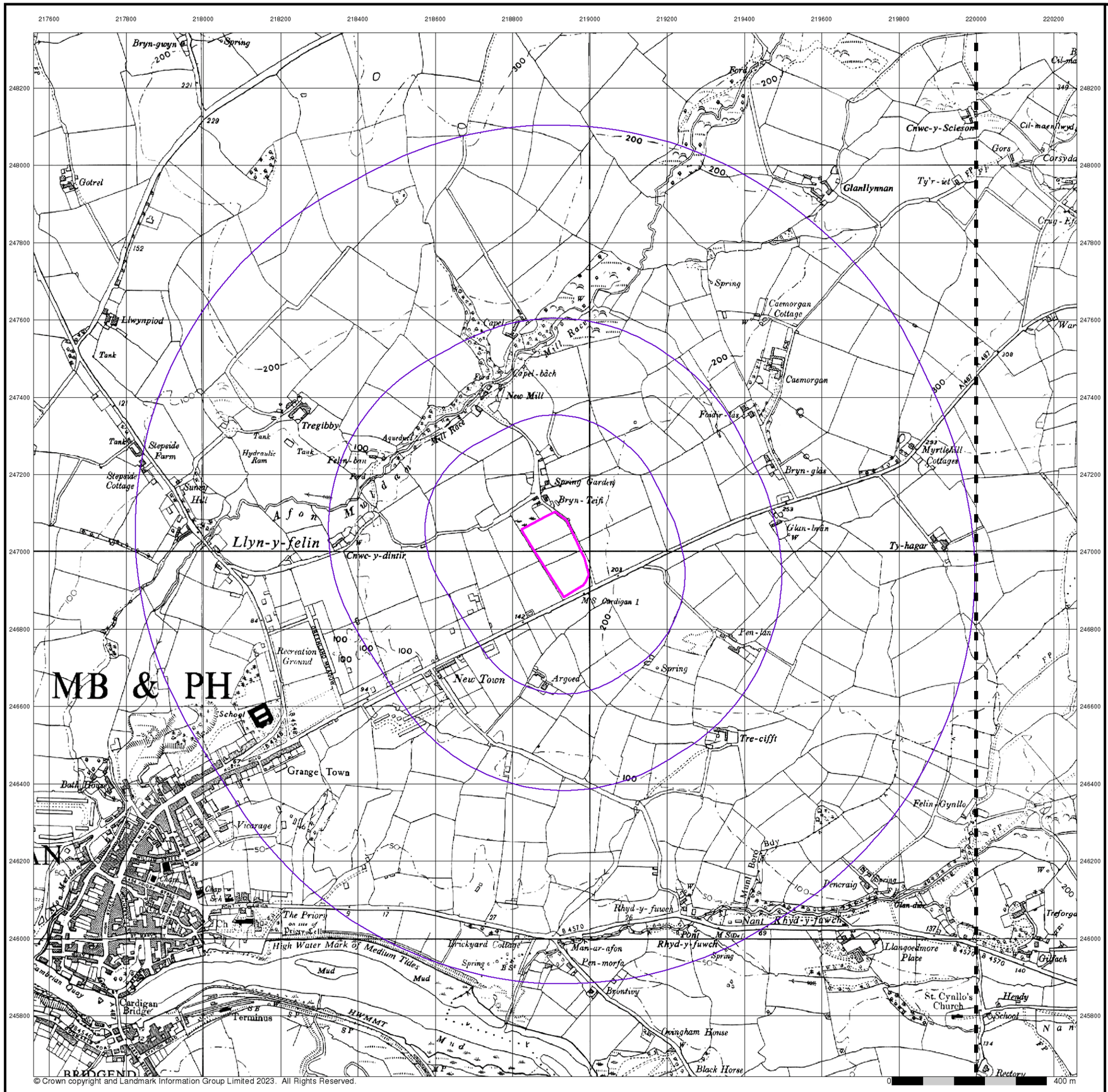

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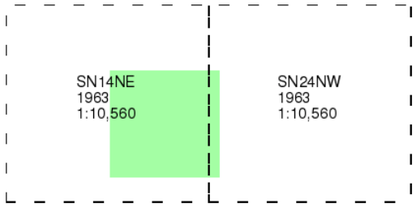
Ordnance Survey Plan

Published 1963

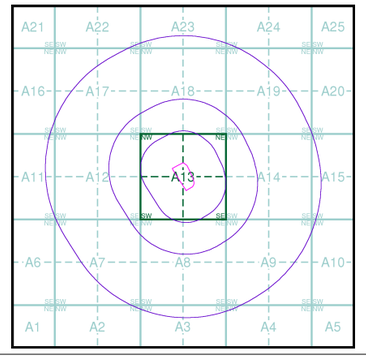
Source map scale - 1:10,000

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



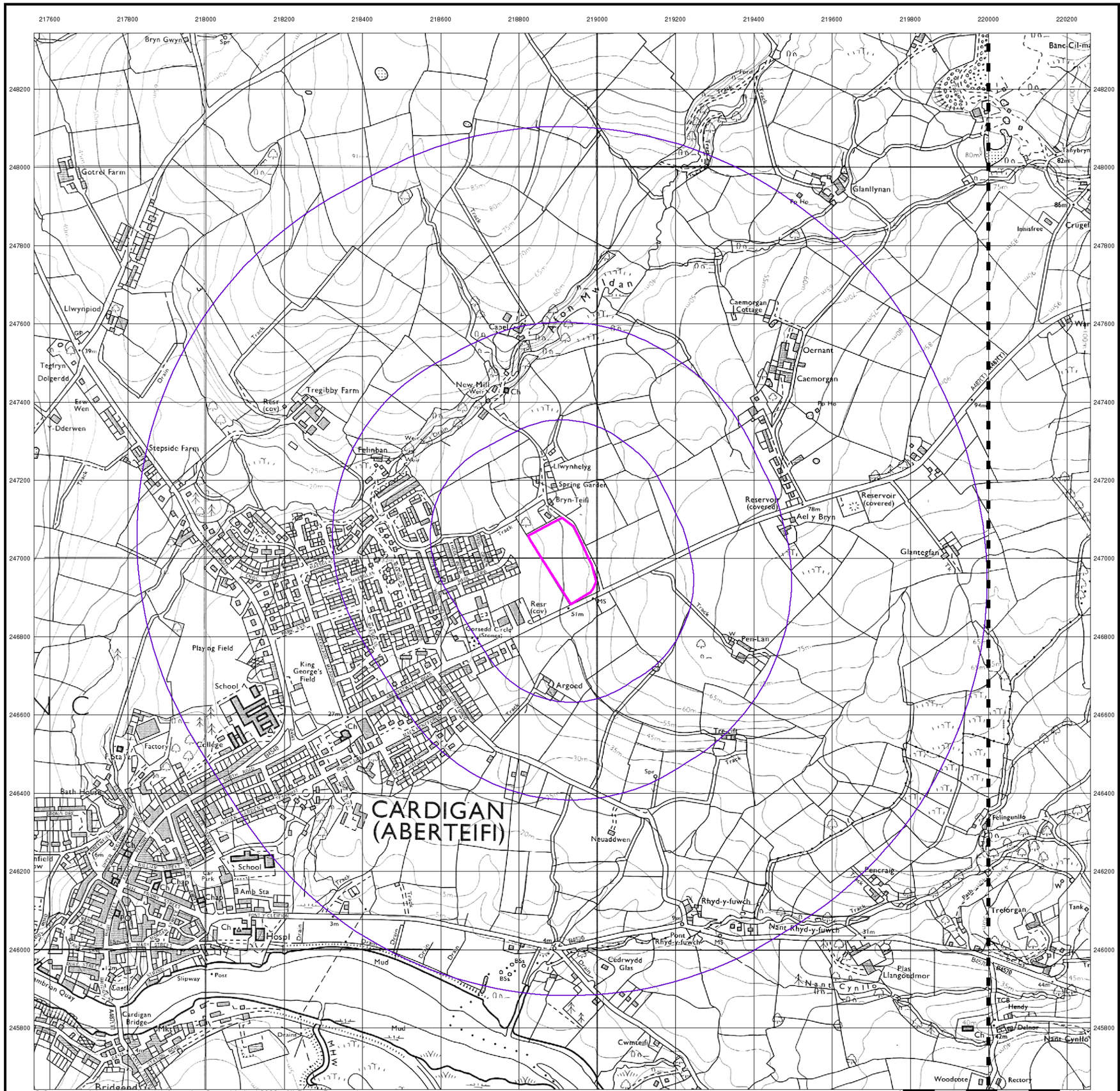
Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

new mill road, Cardigan, SA43 1NE

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



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Geotechnical & Geoenvironmental Specialists

Ordnance Survey Plan

Published 1980 - 1984

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.

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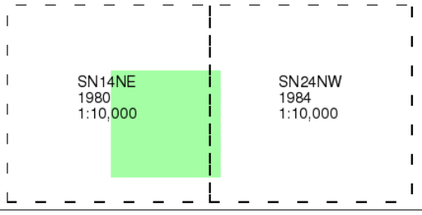
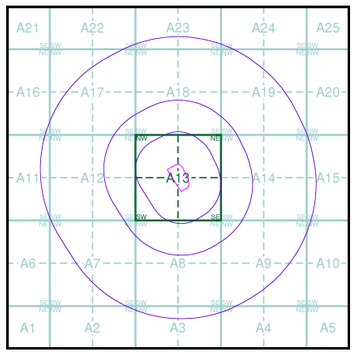


Historical Map - Slice A



Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
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Site Details

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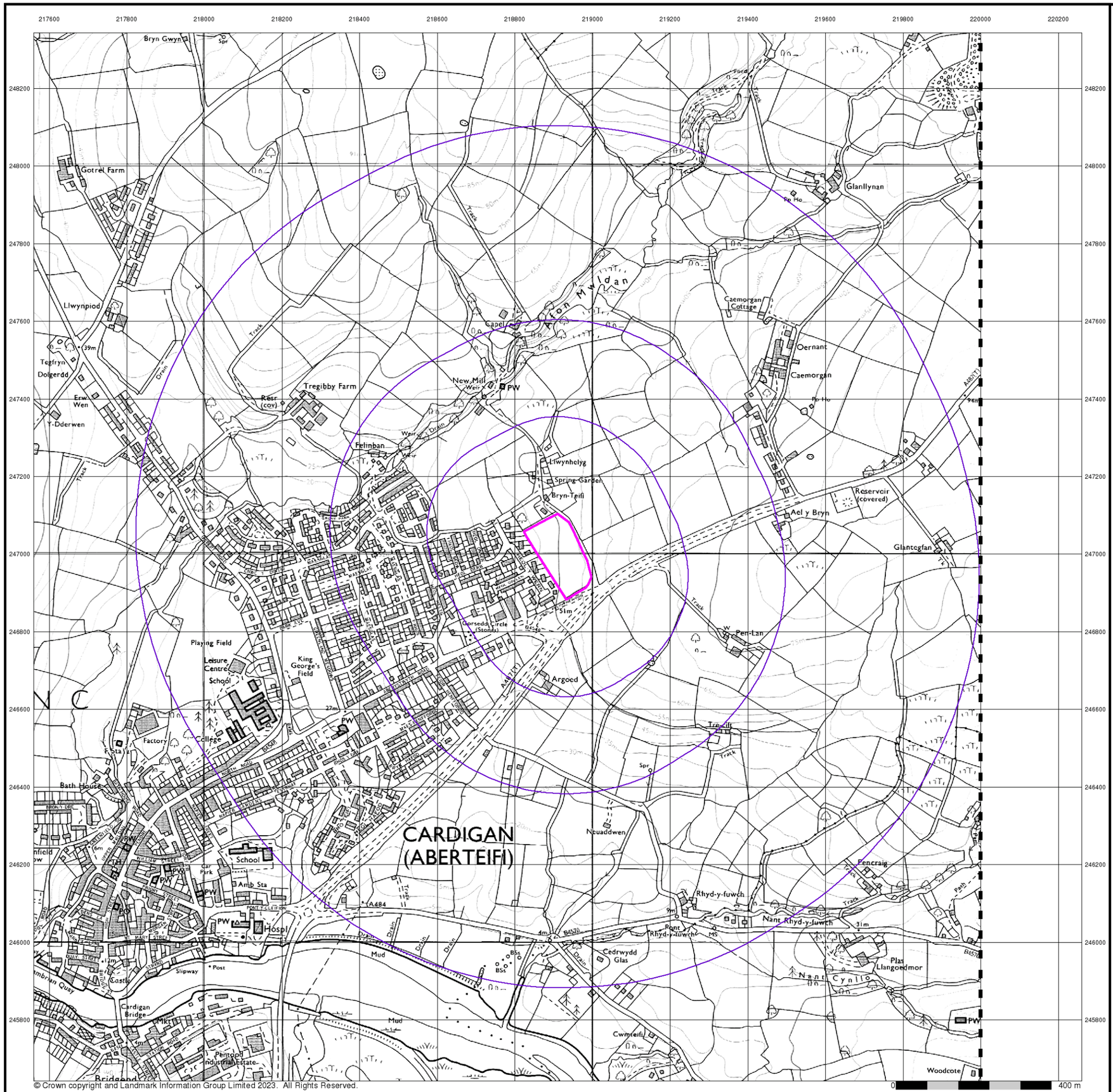

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Ordnance Survey Plan

Published 1993

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.

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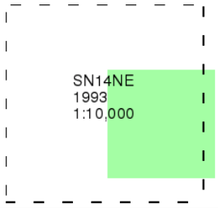
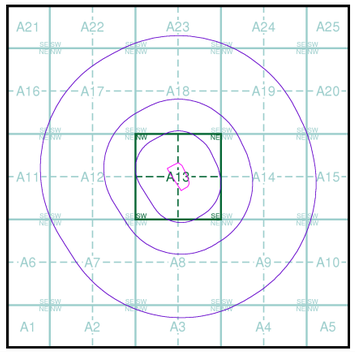


Historical Map - Slice A



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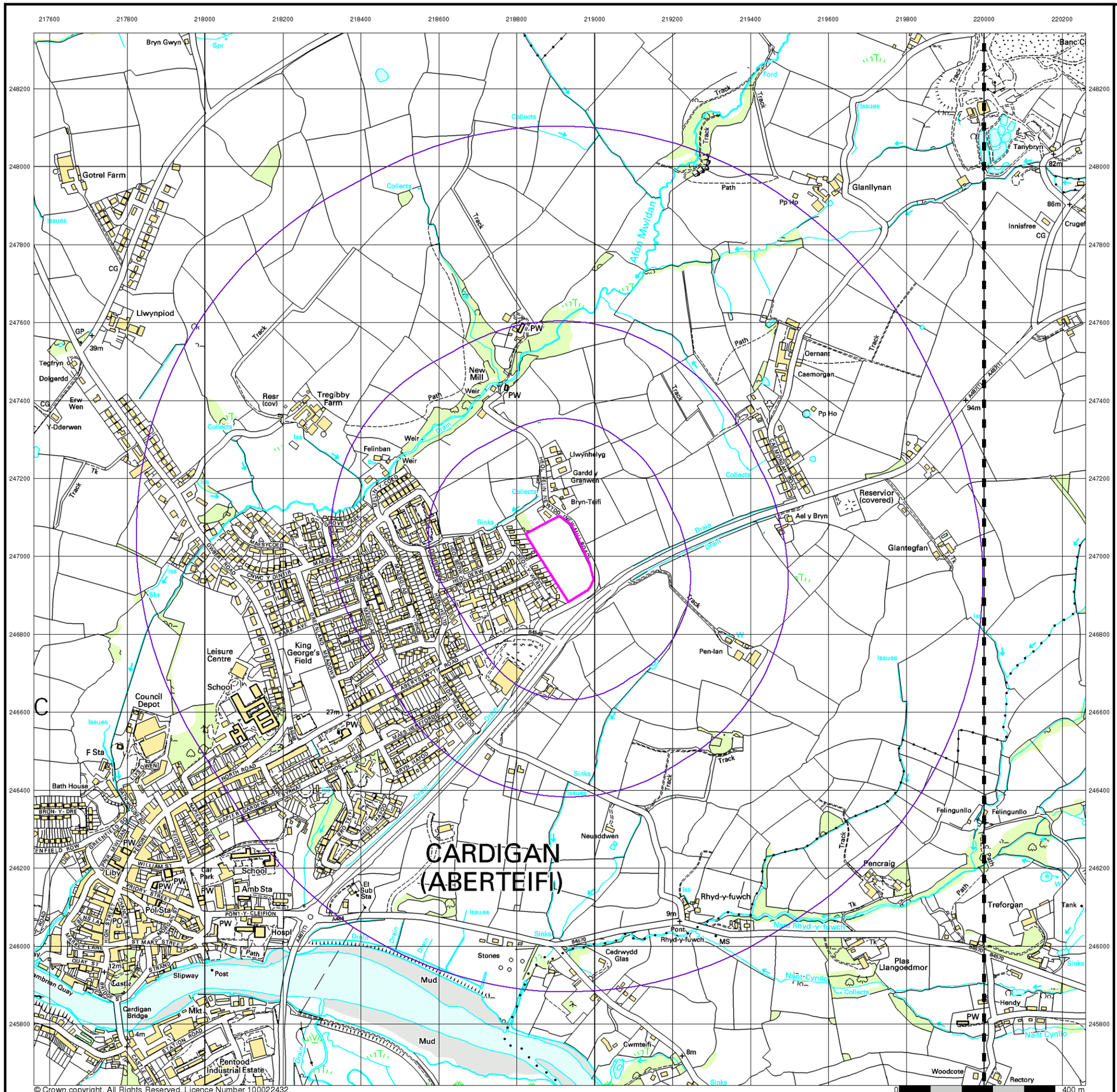

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10k Raster Mapping

Published 2000

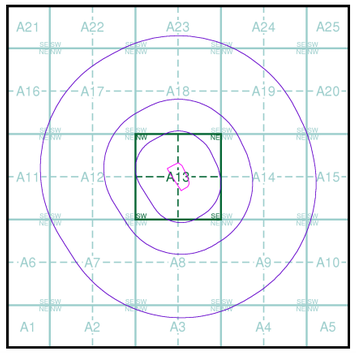
Source map scale - 1:10,000

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)

SN14NE 2000 1:10,000	SN24NW 2000 1:10,000

Historical Map - Slice A



Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
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Search Buffer (m):	1000

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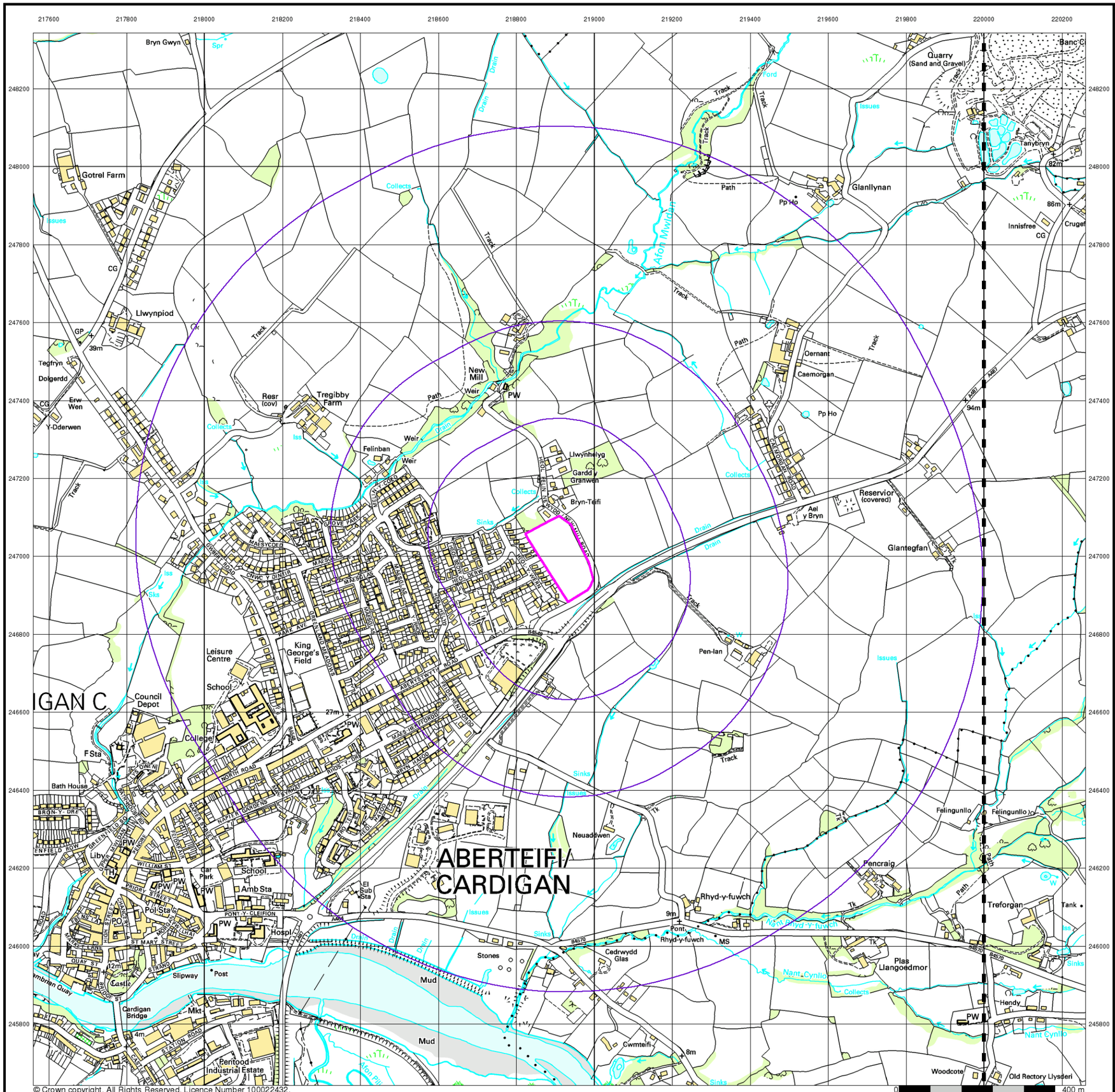

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10k Raster Mapping

Published 2006

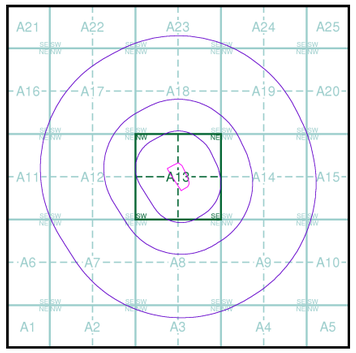
Source map scale - 1:10,000

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)

SN14NE	SN24NW
2006	2006
1:10,000	1:10,000

Historical Map - Slice A



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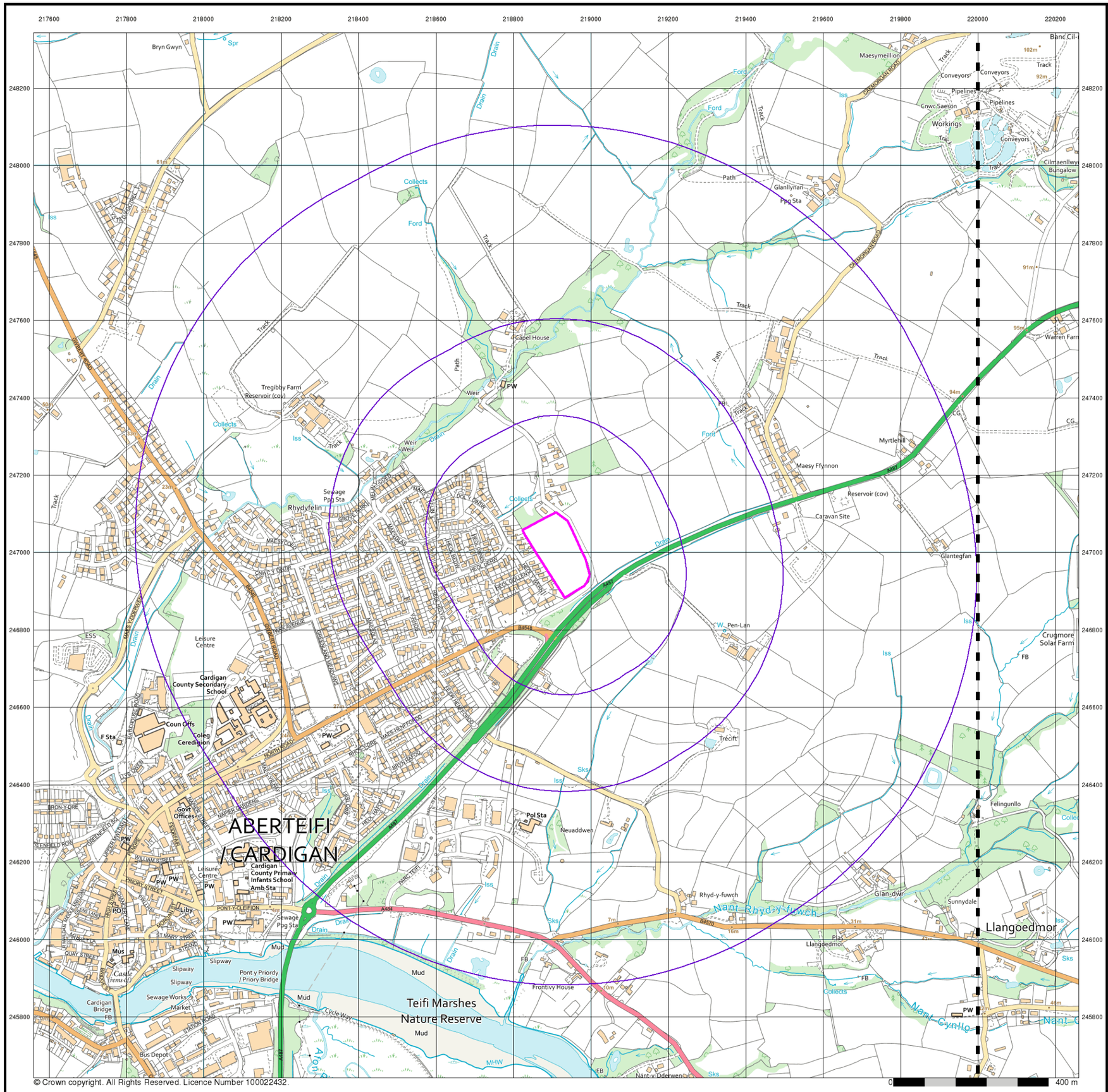

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VectorMap Local

Published 2022

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

N

Order Details

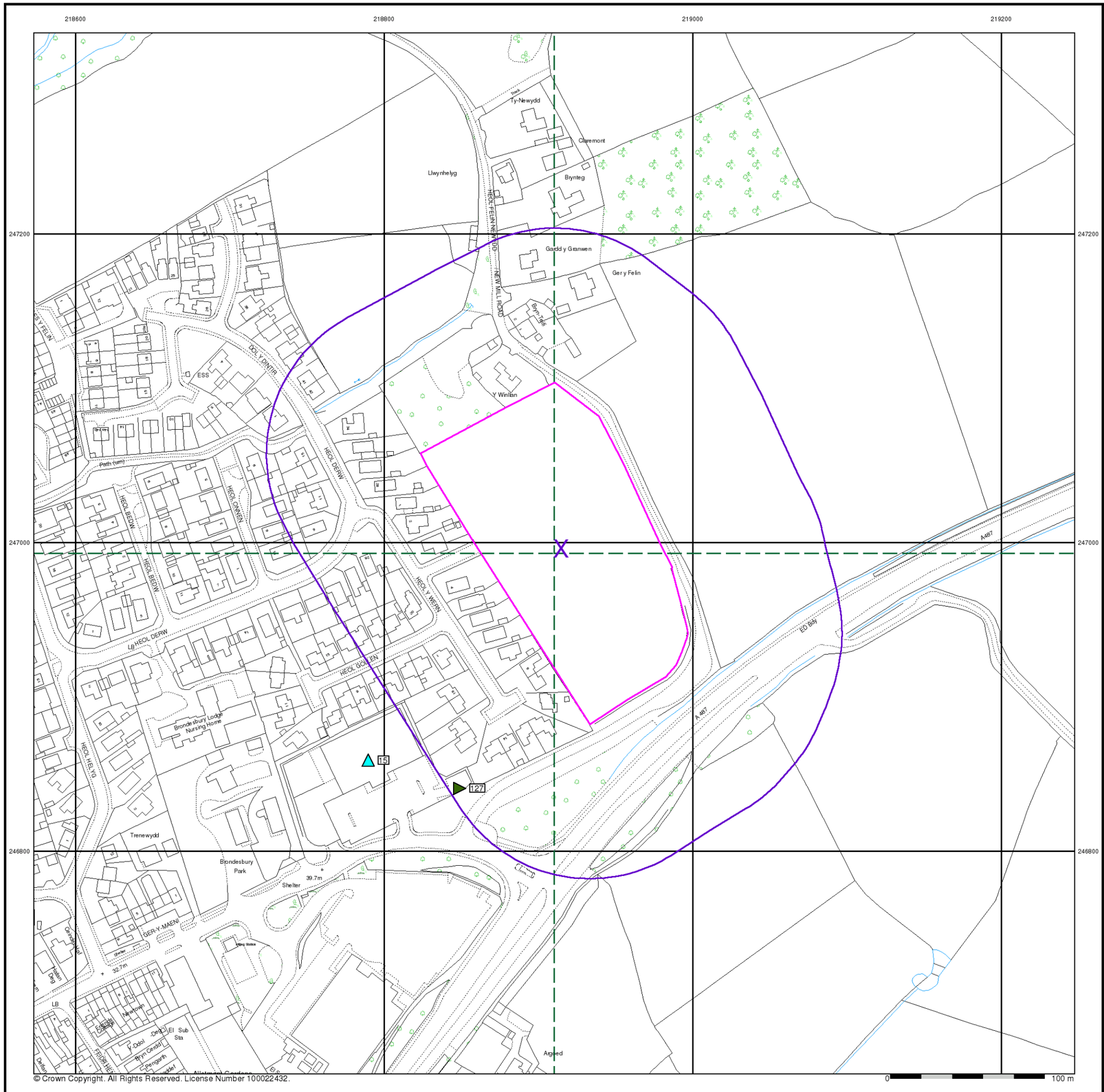
Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

new mill road, Cardigan, SA43 1NE

Landmark
INFORMATION GROUP

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



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Geotechnical & Geoenvironmental Specialists

General

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

Agency and Hydrological

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

Hazardous Substances

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

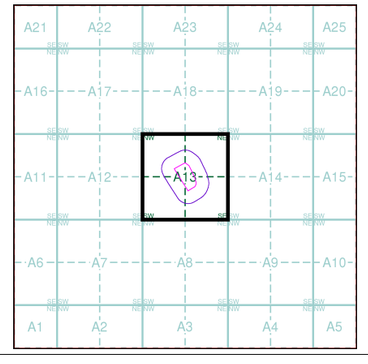
Geological

- BGS Recorded Mineral Site

Waste

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

Site Sensitivity Map - Segment A13



Order Details

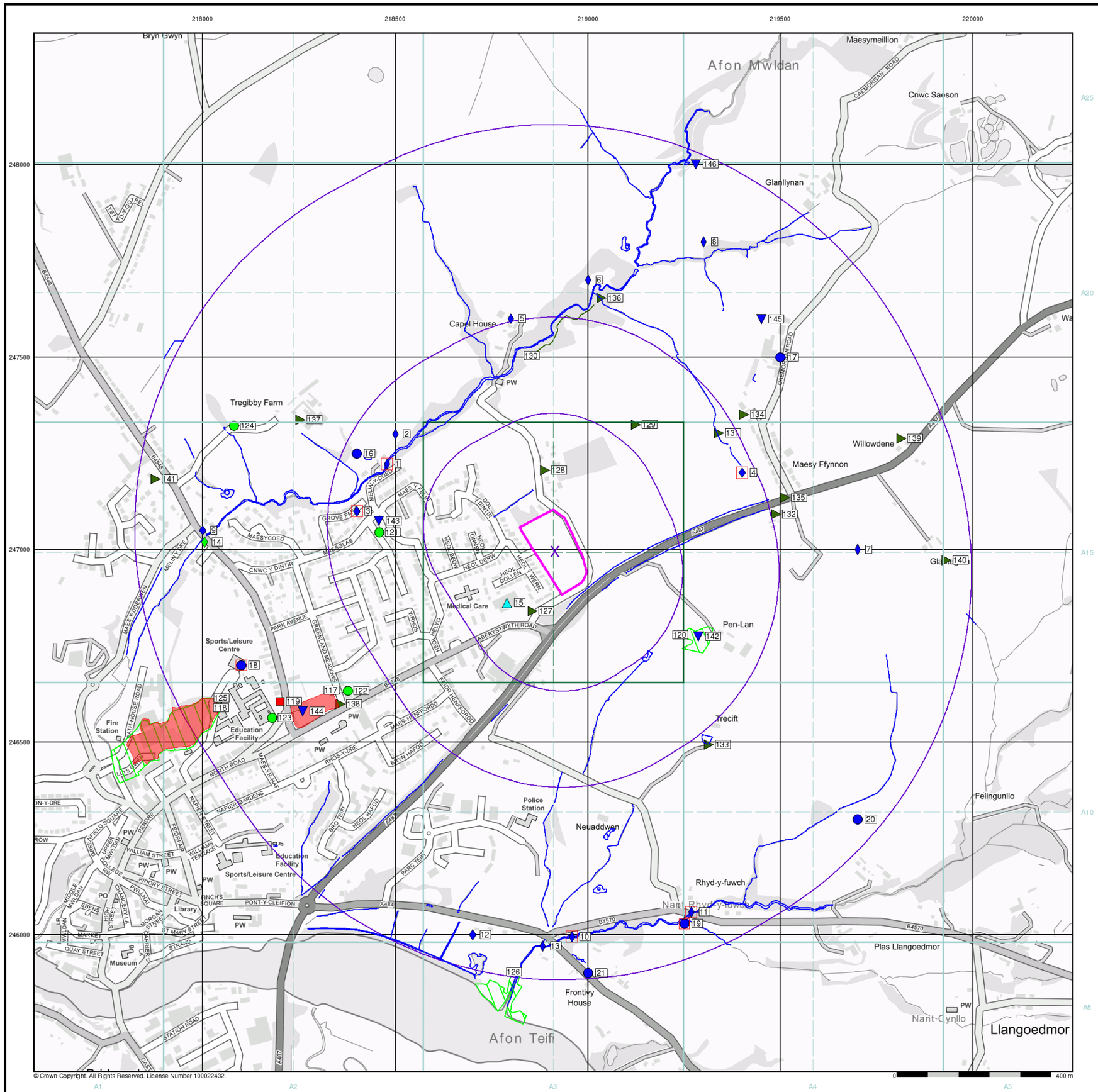
Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Plot Buffer (m):	100

Site Details

new mill road, Cardigan, SA43 1NE

Landmark INFORMATION GROUP

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



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Geotechnical & Geoenvironmental Specialists

General

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

Agency and Hydrological

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

Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
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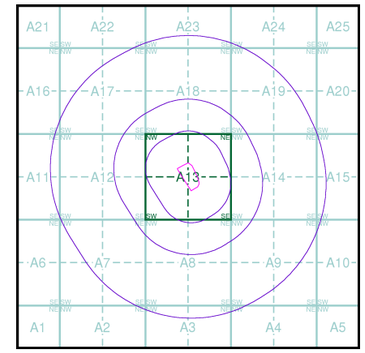
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

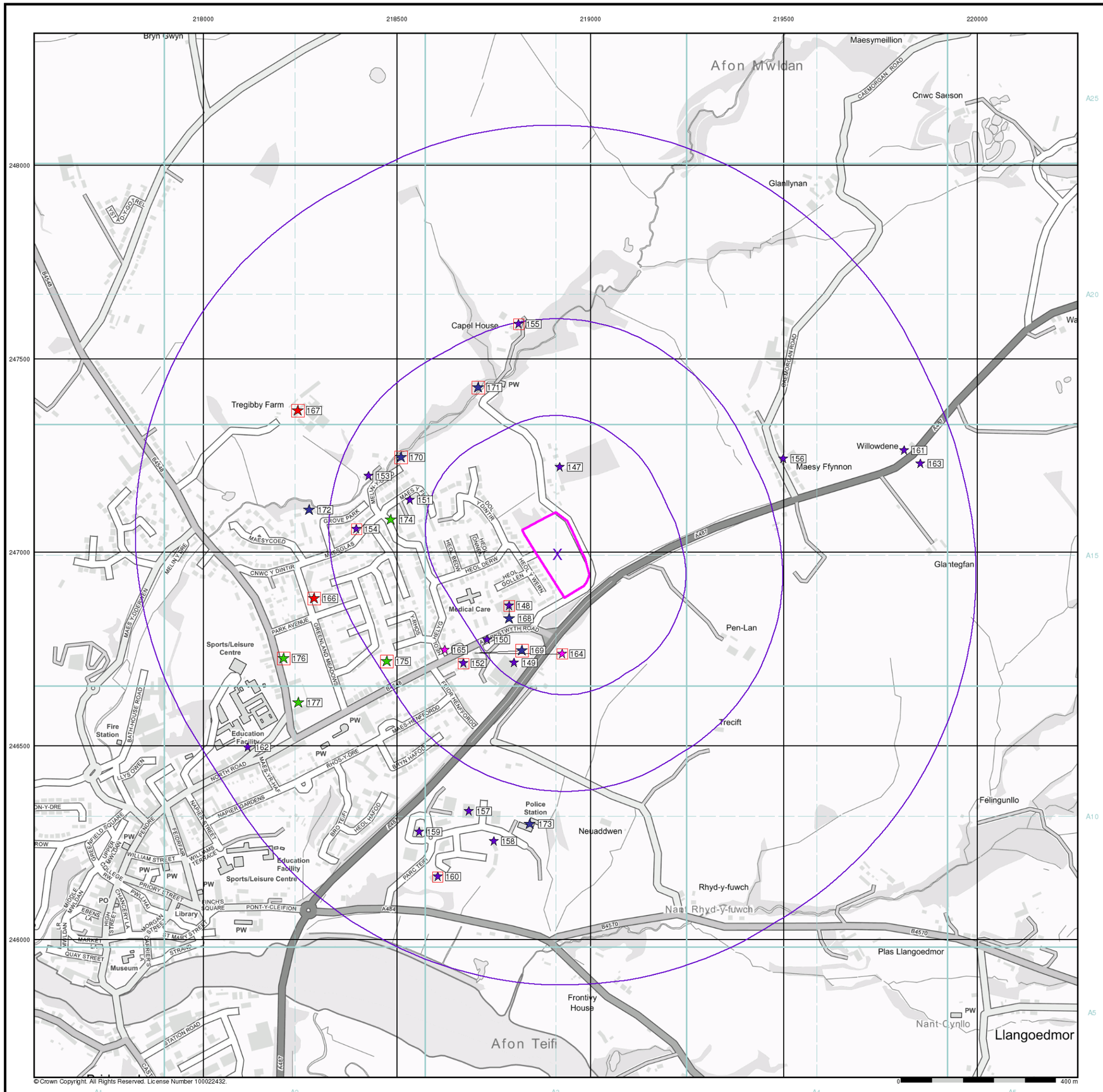
Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

new mill road, Cardigan, SA43 1NE

Landmark INFORMATION GROUP

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



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Industrial Land Use Map

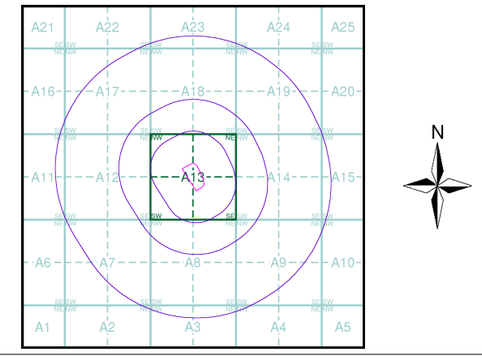
General

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

Industrial Land Use

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

Industrial Land Use Map - Slice A



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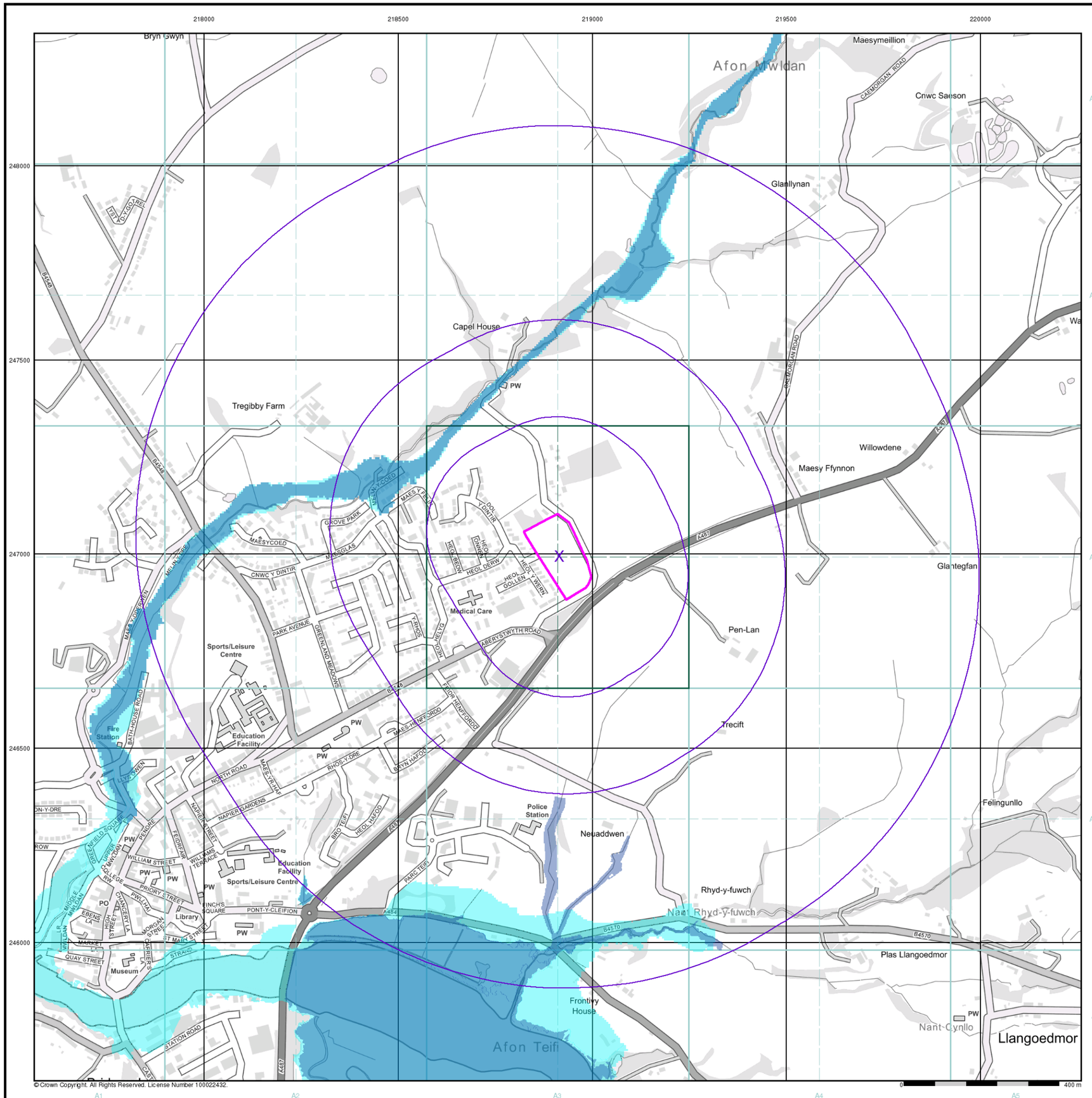

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Geotechnical & Geoenvironmental Specialists

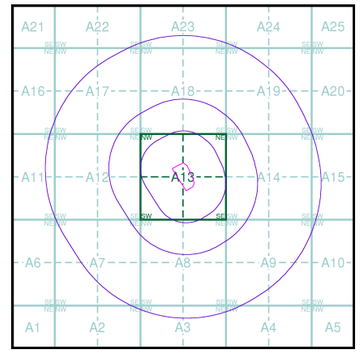
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



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Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

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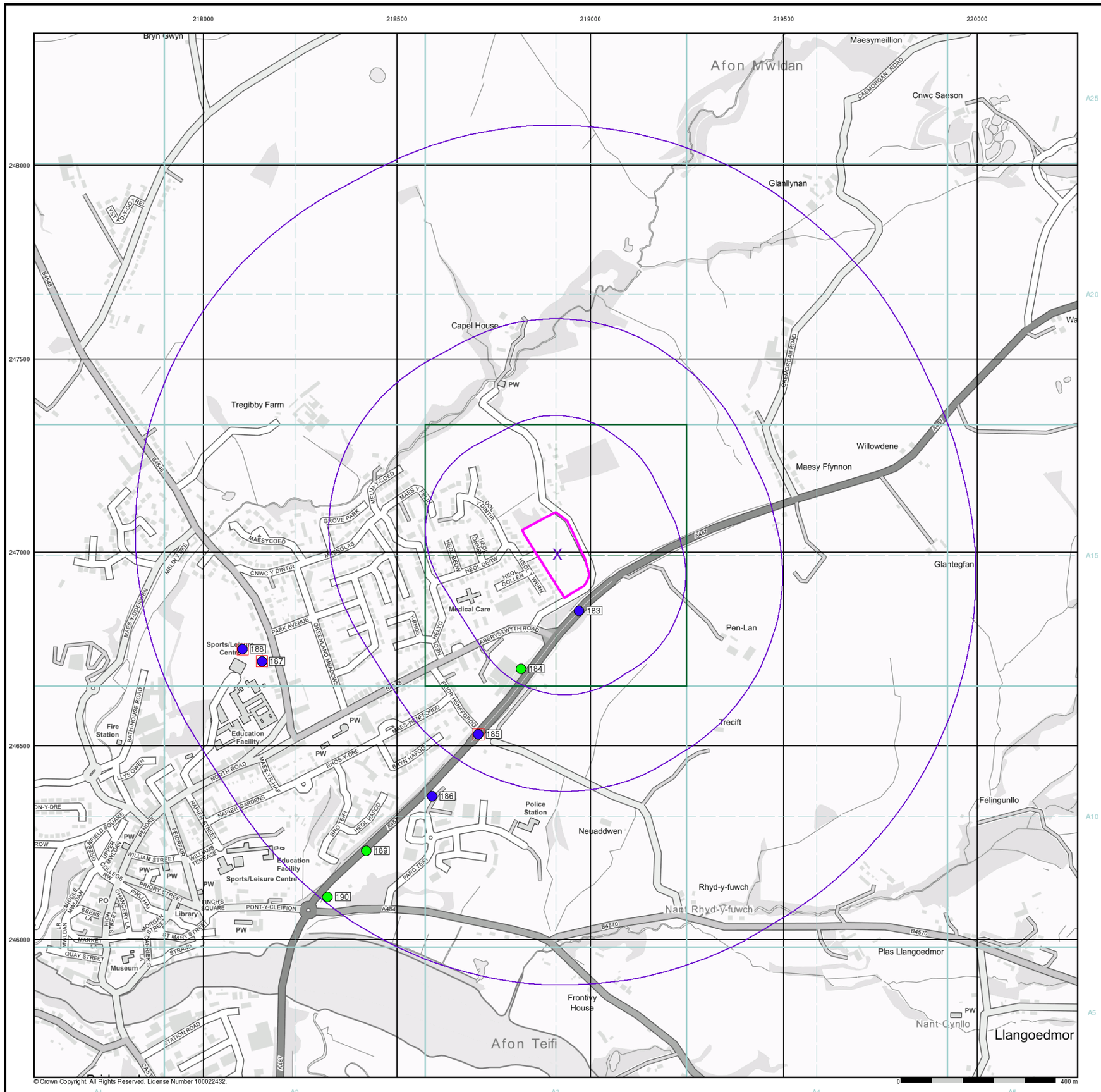

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Geotechnical & Geoenvironmental Specialists

General

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

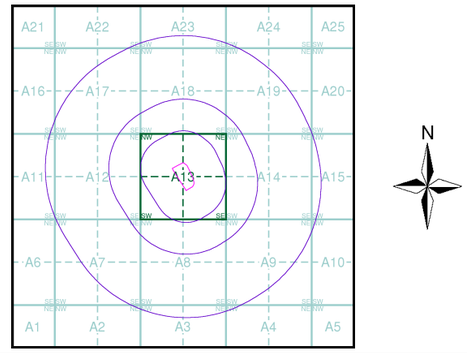
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice A



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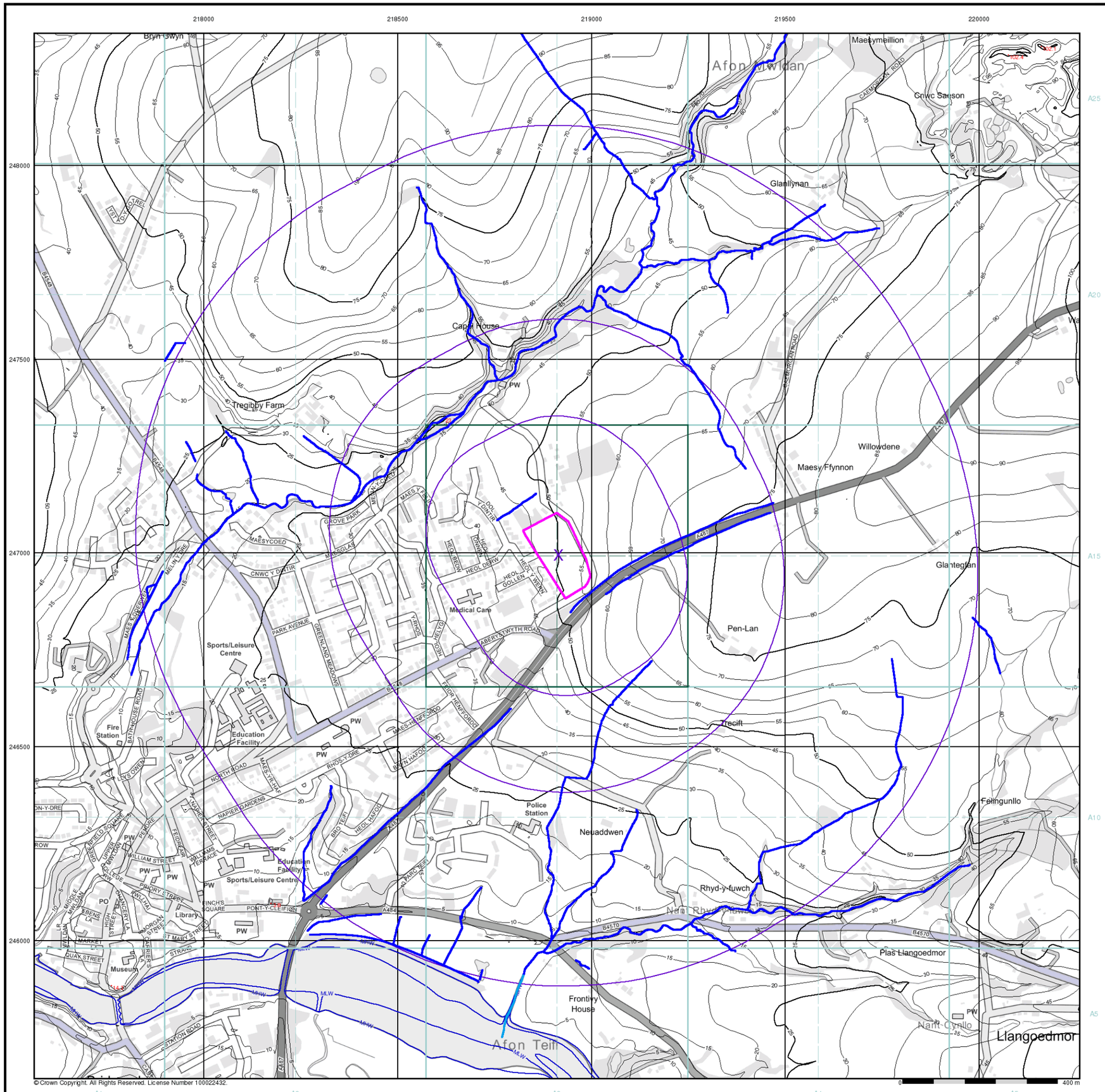

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Geotechnical & Geoenvironmental Specialists

General

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

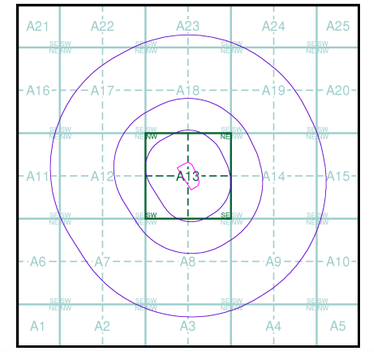
OS Water Network Data

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

Contours (height in meters)

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

OS Water Network Map - Slice A



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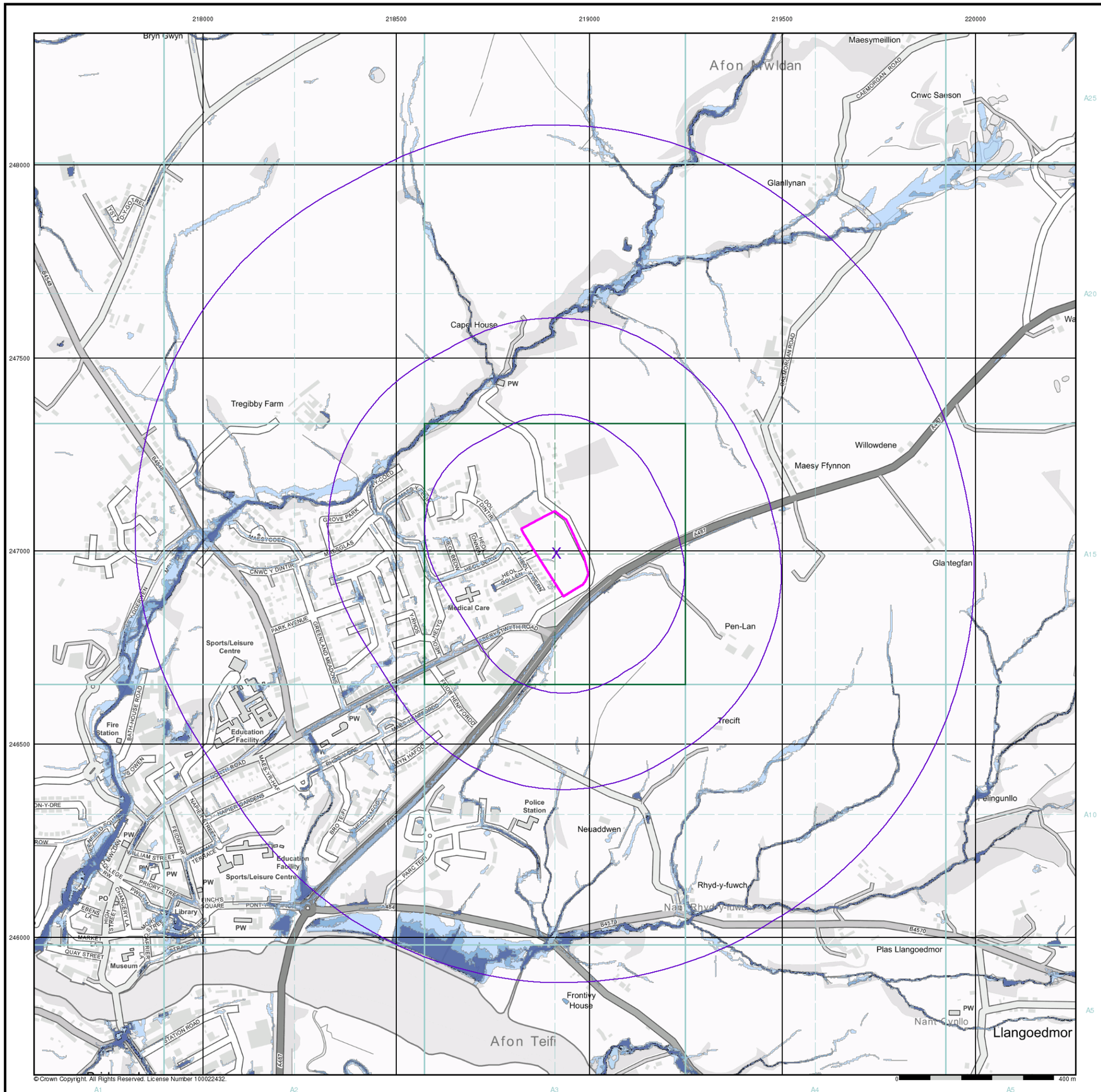

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Geotechnical & Geoenvironmental Specialists

General

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

Risk of Flooding from Surface Water

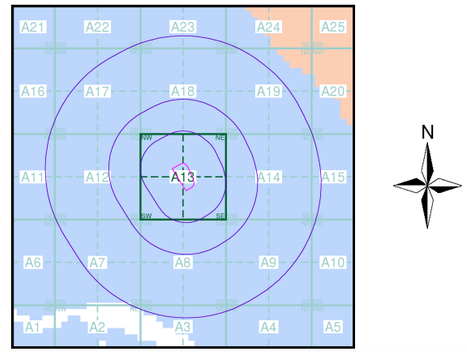
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

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



Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

new mill road, Cardigan, SA43 1NE

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

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Geotechnical & Geoenvironmental Specialists

General

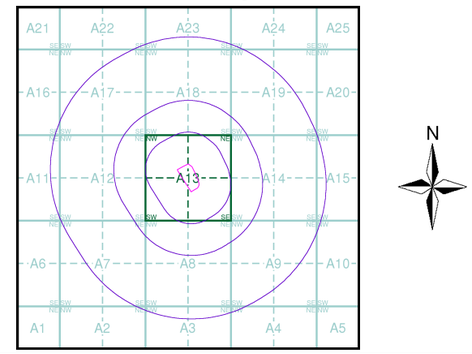
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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



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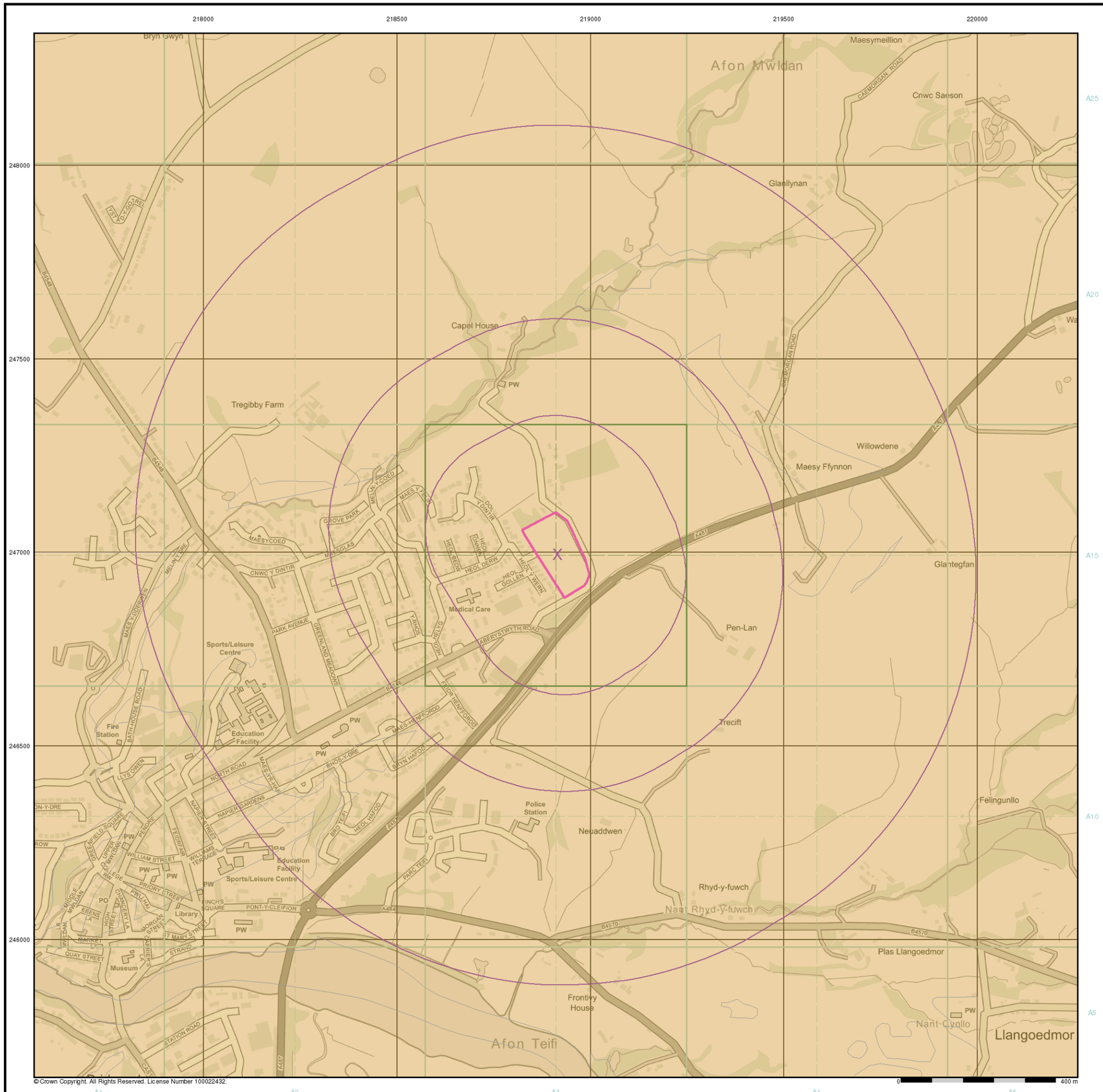

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General

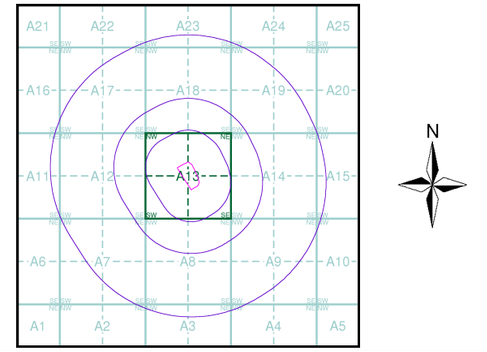
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

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

Estimated Soil Chemistry Cadmium - Slice A



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General

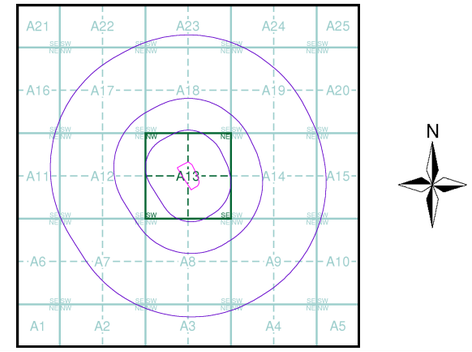
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

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

Estimated Soil Chemistry Chromium - Slice A



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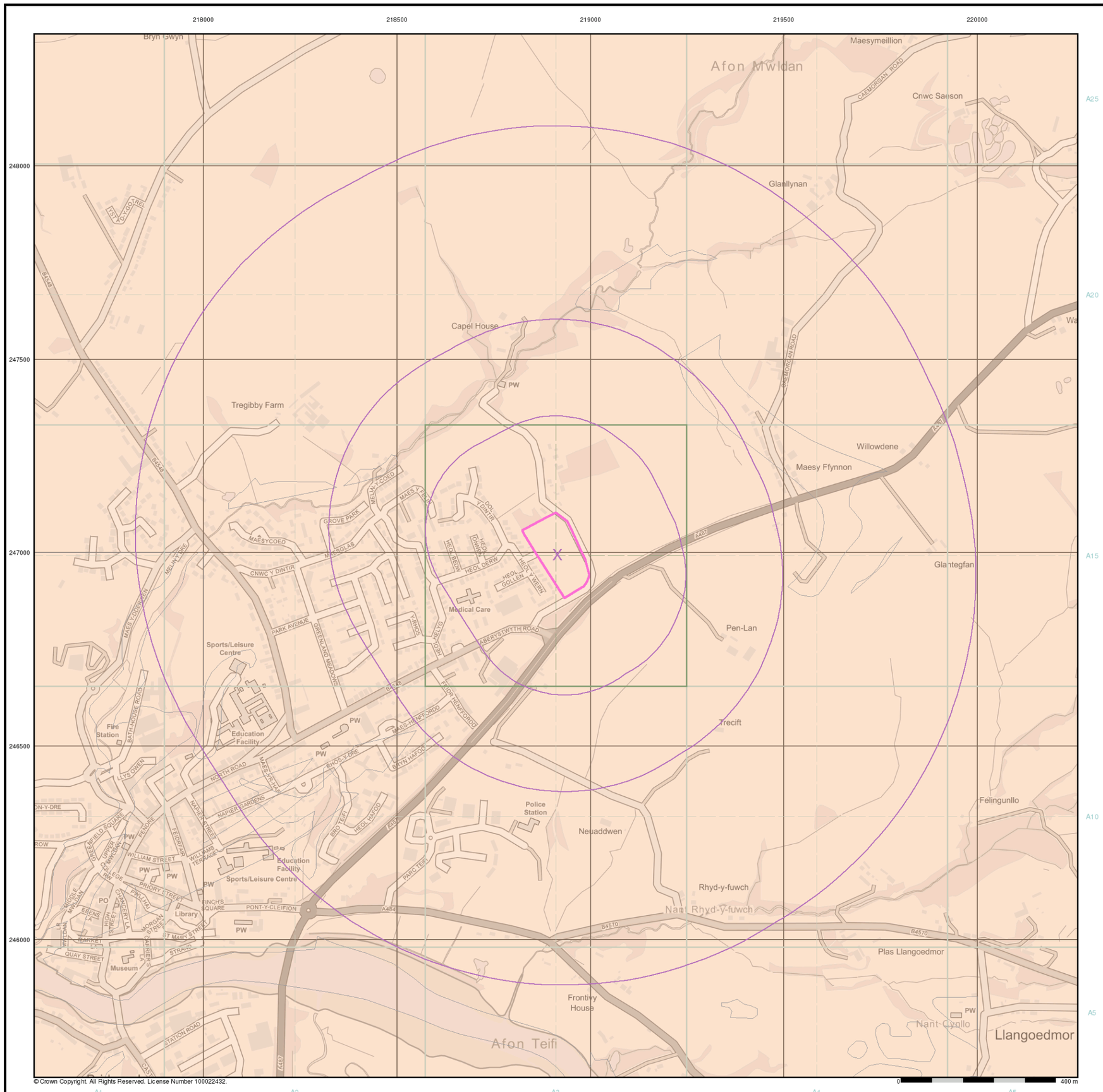

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General

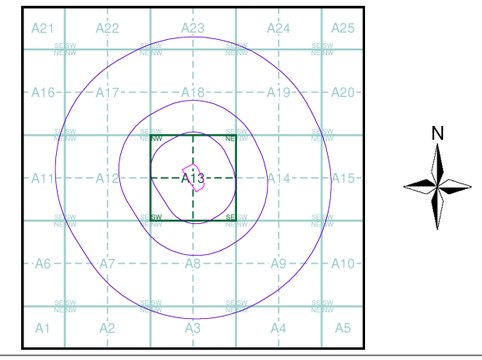
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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



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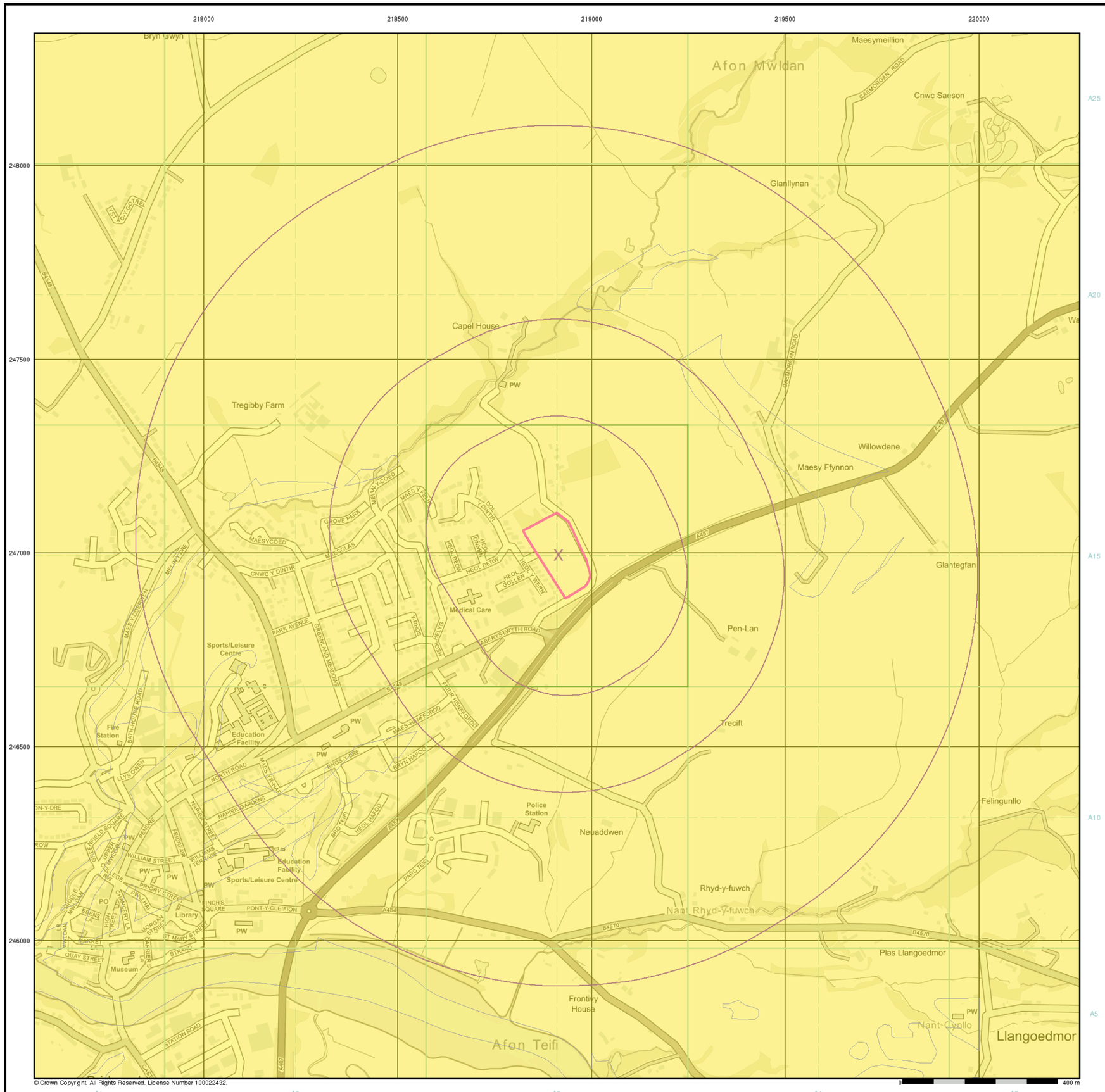

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General

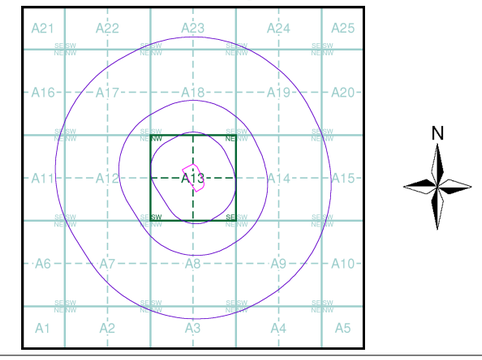
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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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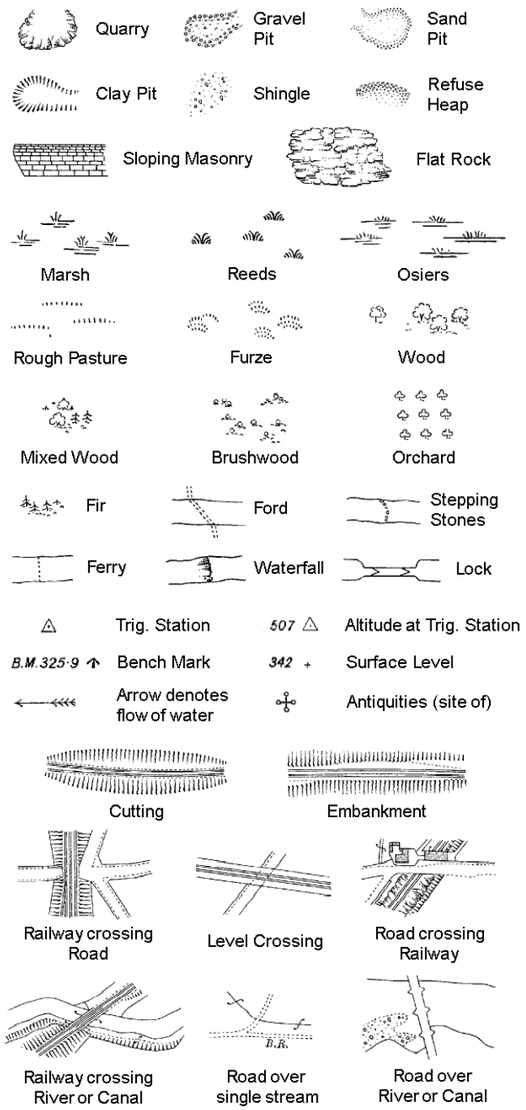
Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

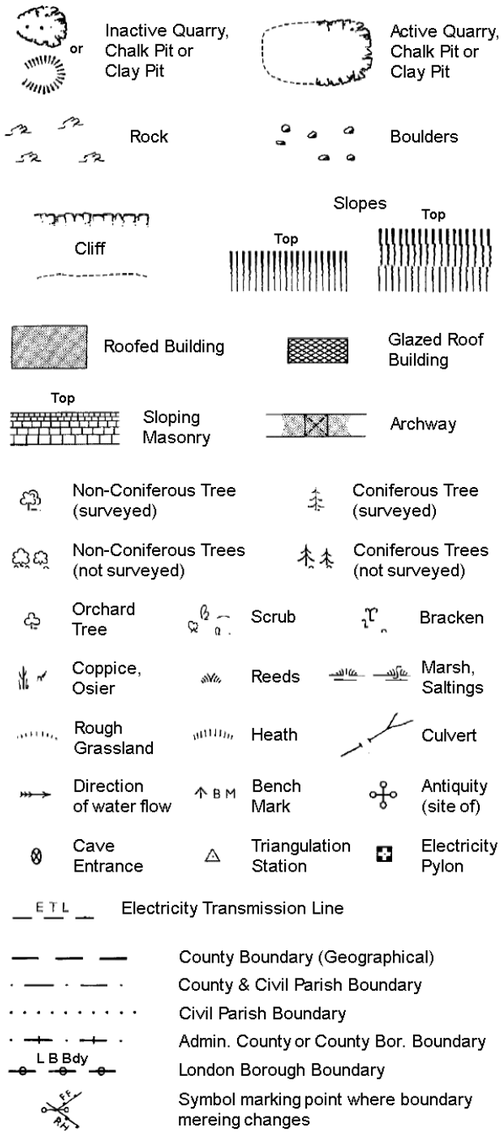
Administrative County & Civil Parish Boundary

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

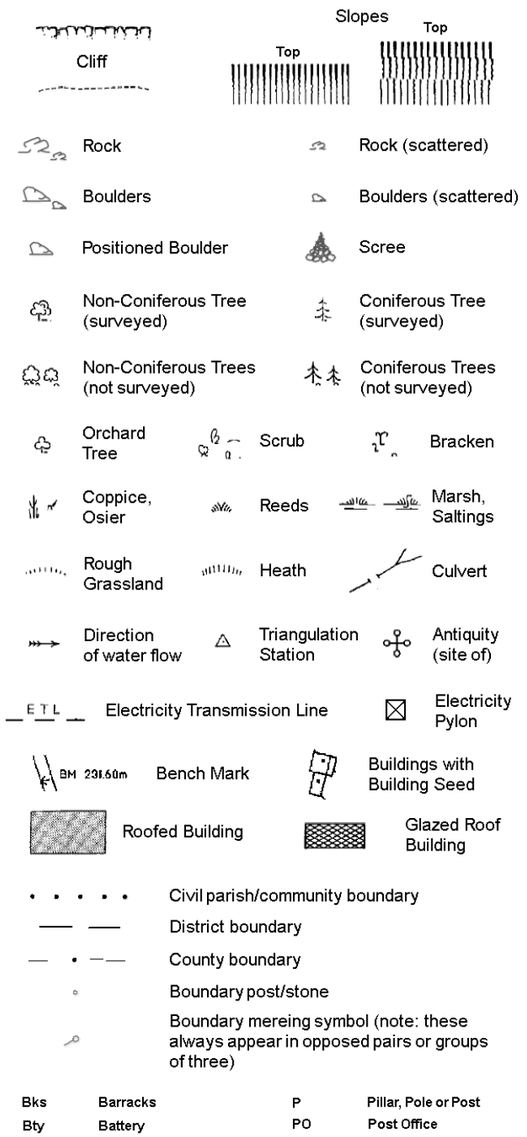
Admin. County or County Bor. Boundary

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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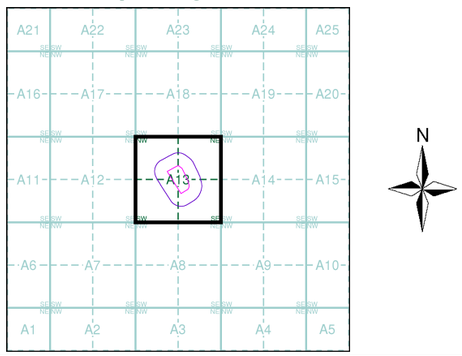
Historical Mapping & Photography included:

Historical Map - Segment A13



Order Details

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Slice: A
Site Area (Ha): 2.05
Search Buffer (m): 100

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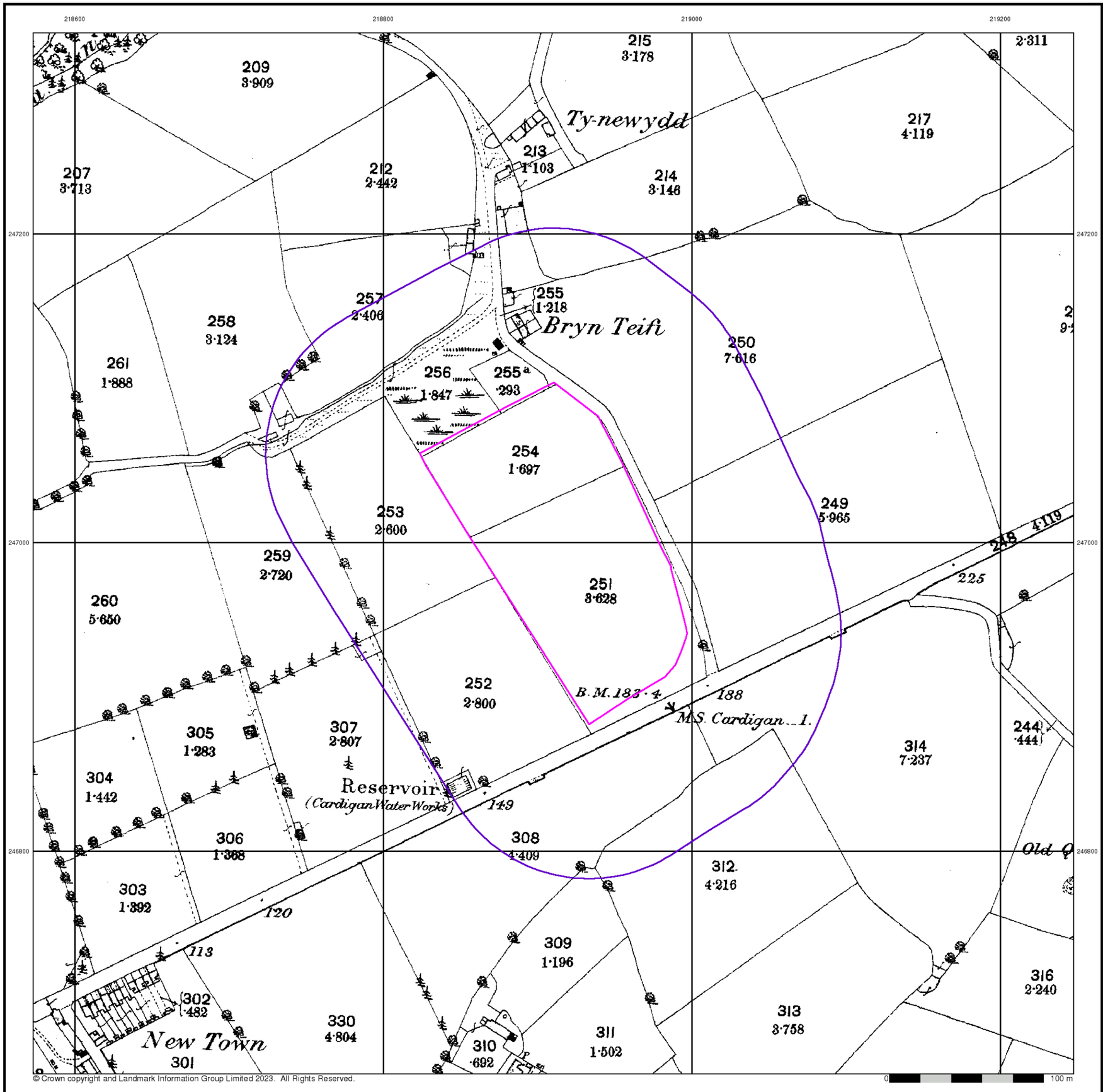

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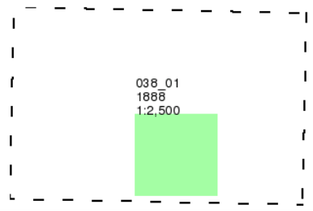
Cardiganshire

Published 1888

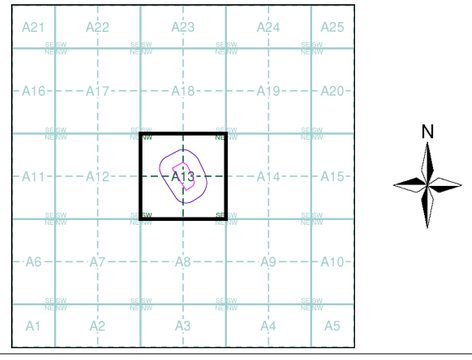
Source map scale - 1:2,500

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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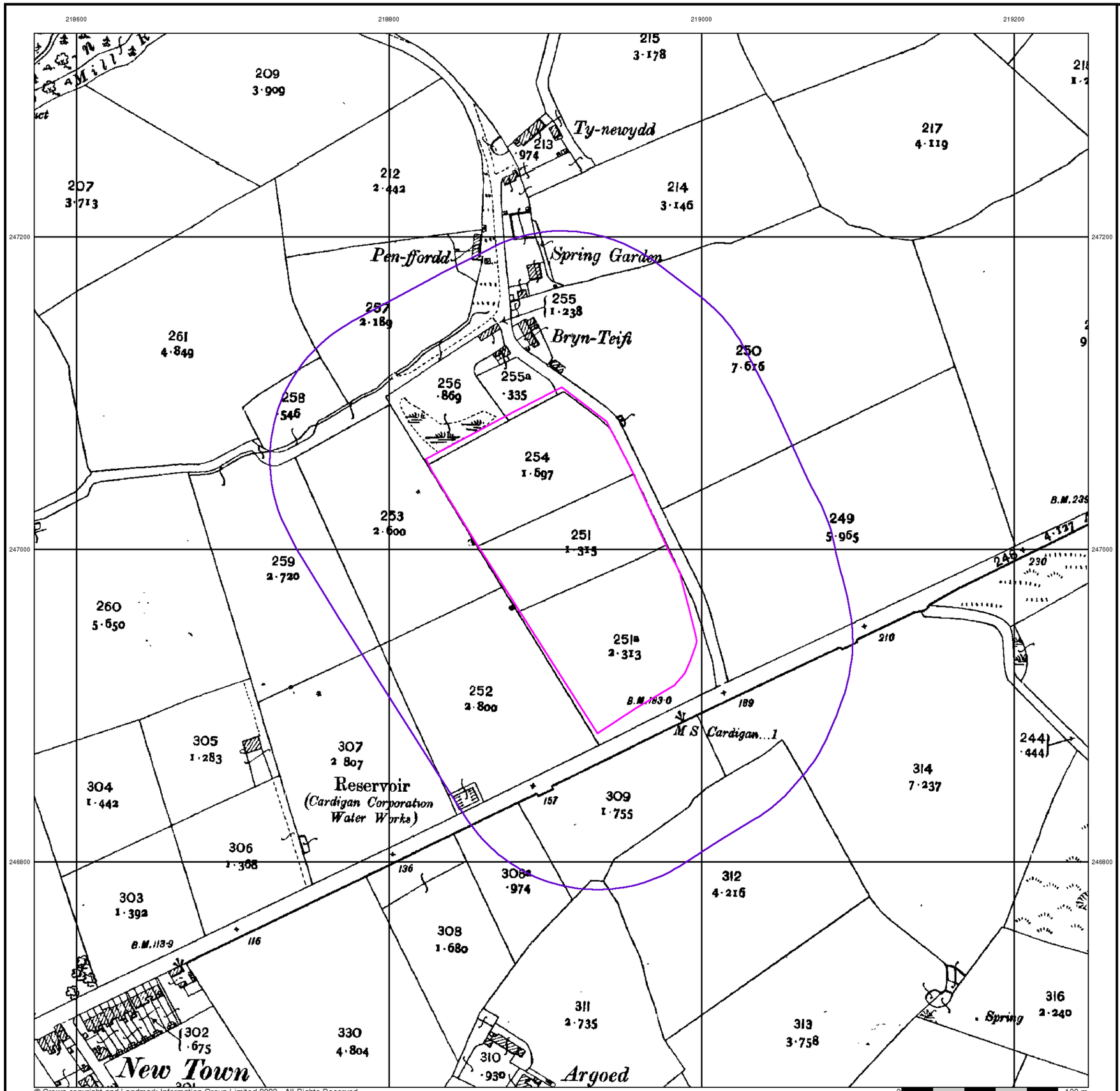

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Cardiganshire

Published 1906

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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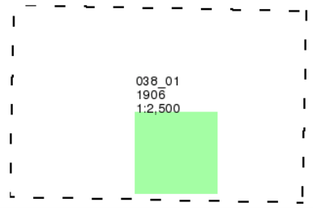
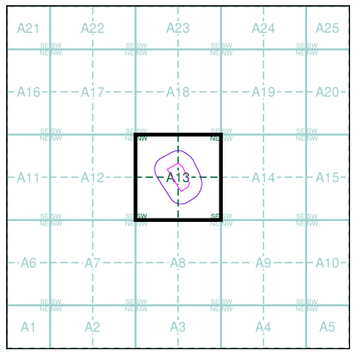


Historical Map - Segment A13



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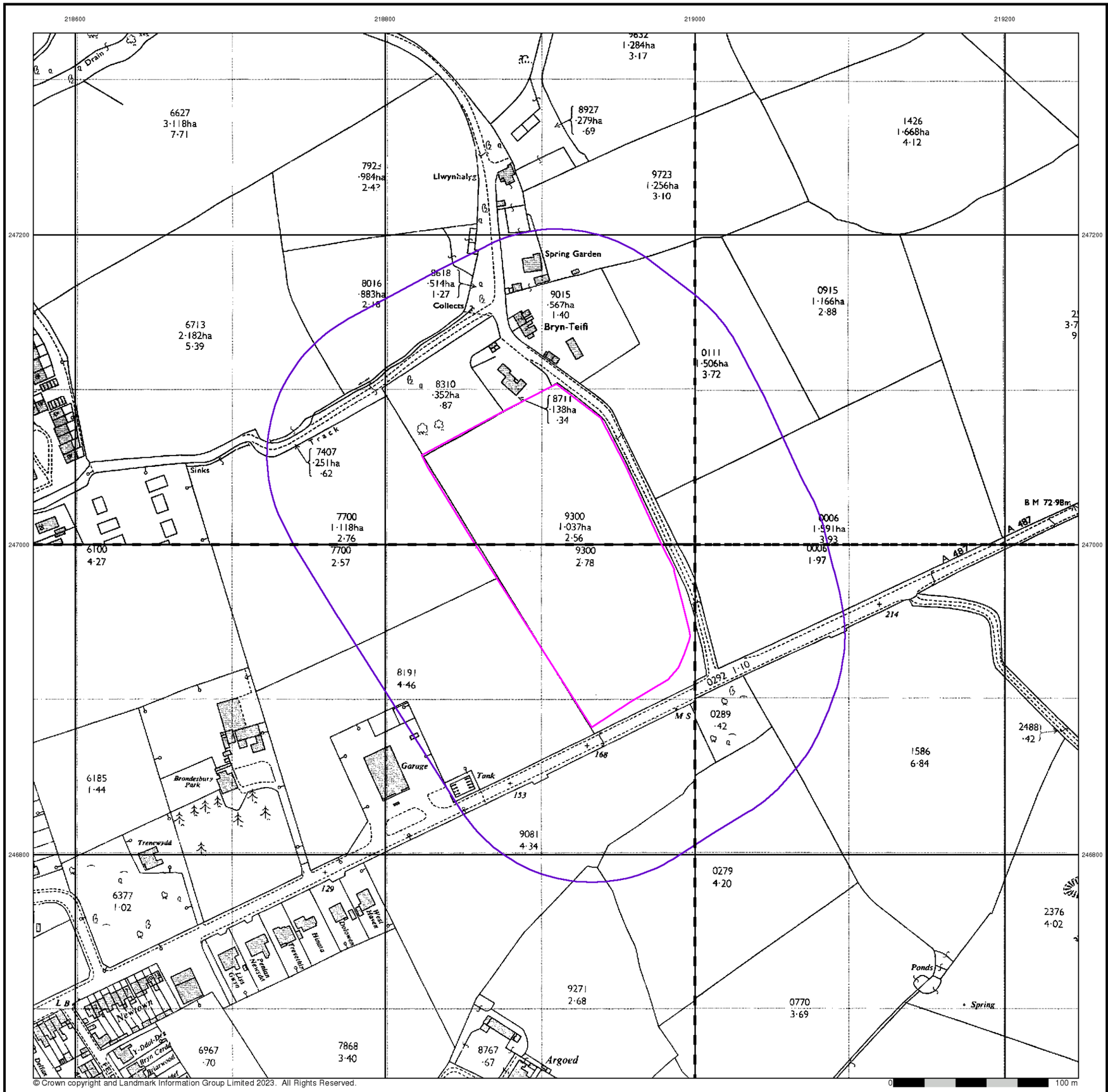

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Ordnance Survey Plan

Published 1965 - 1976

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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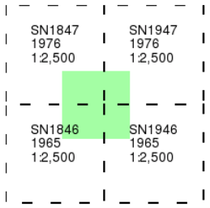
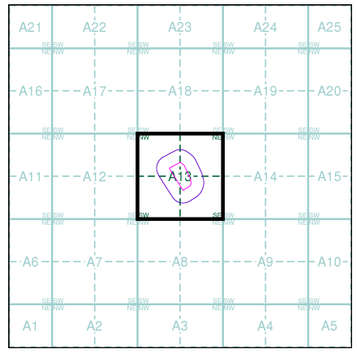


Historical Map - Segment A13



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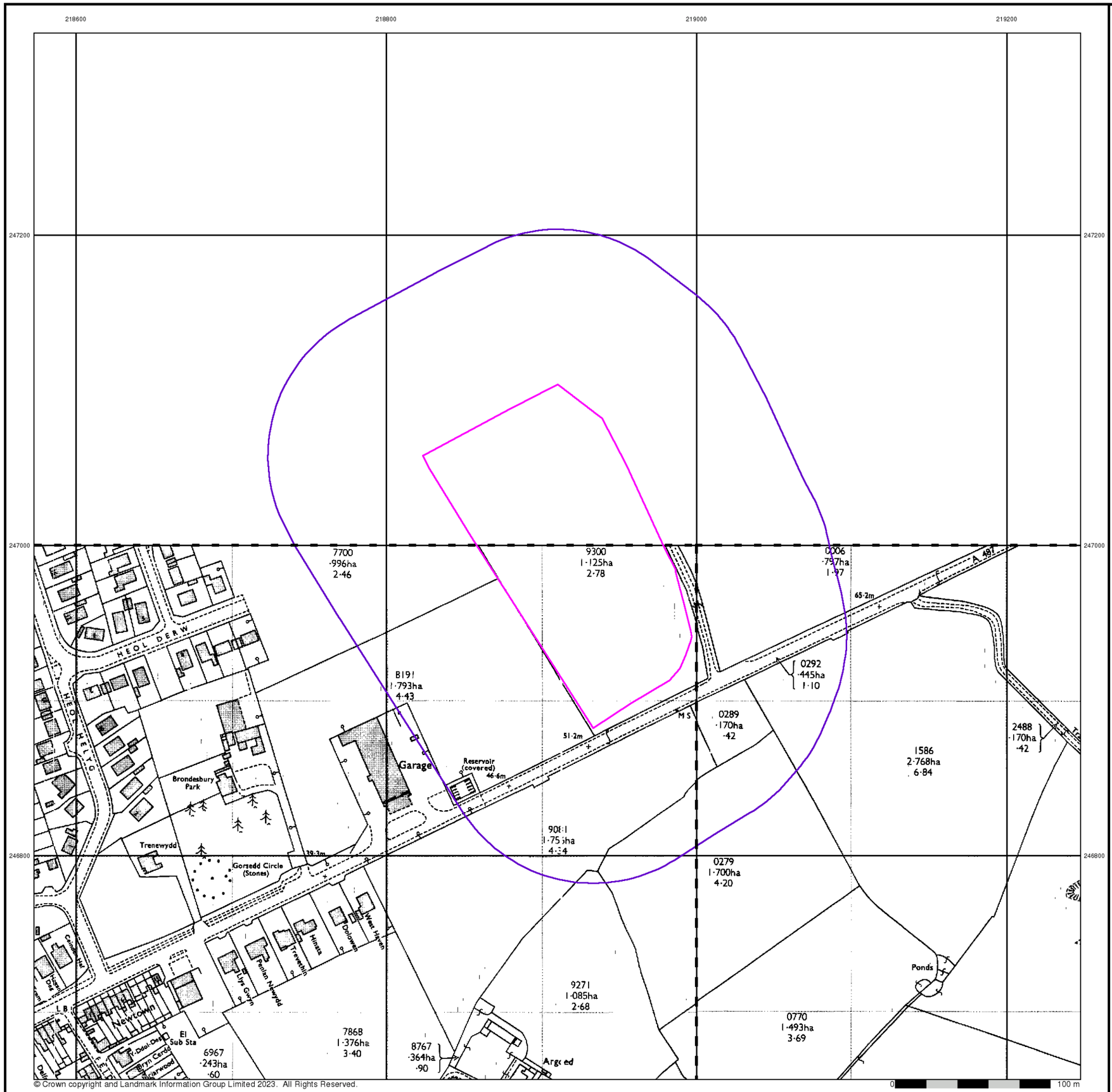

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Ordnance Survey Plan

Published 1977

Source map scale - 1:2,500

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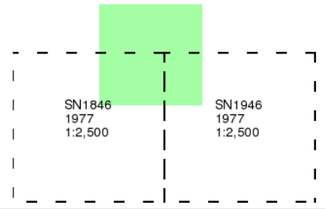
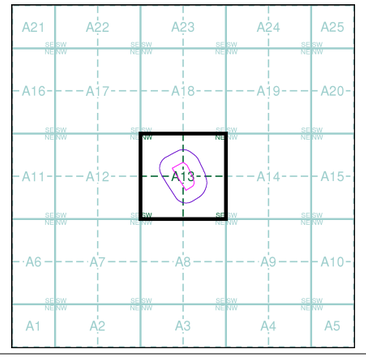


Historical Map - Segment A13



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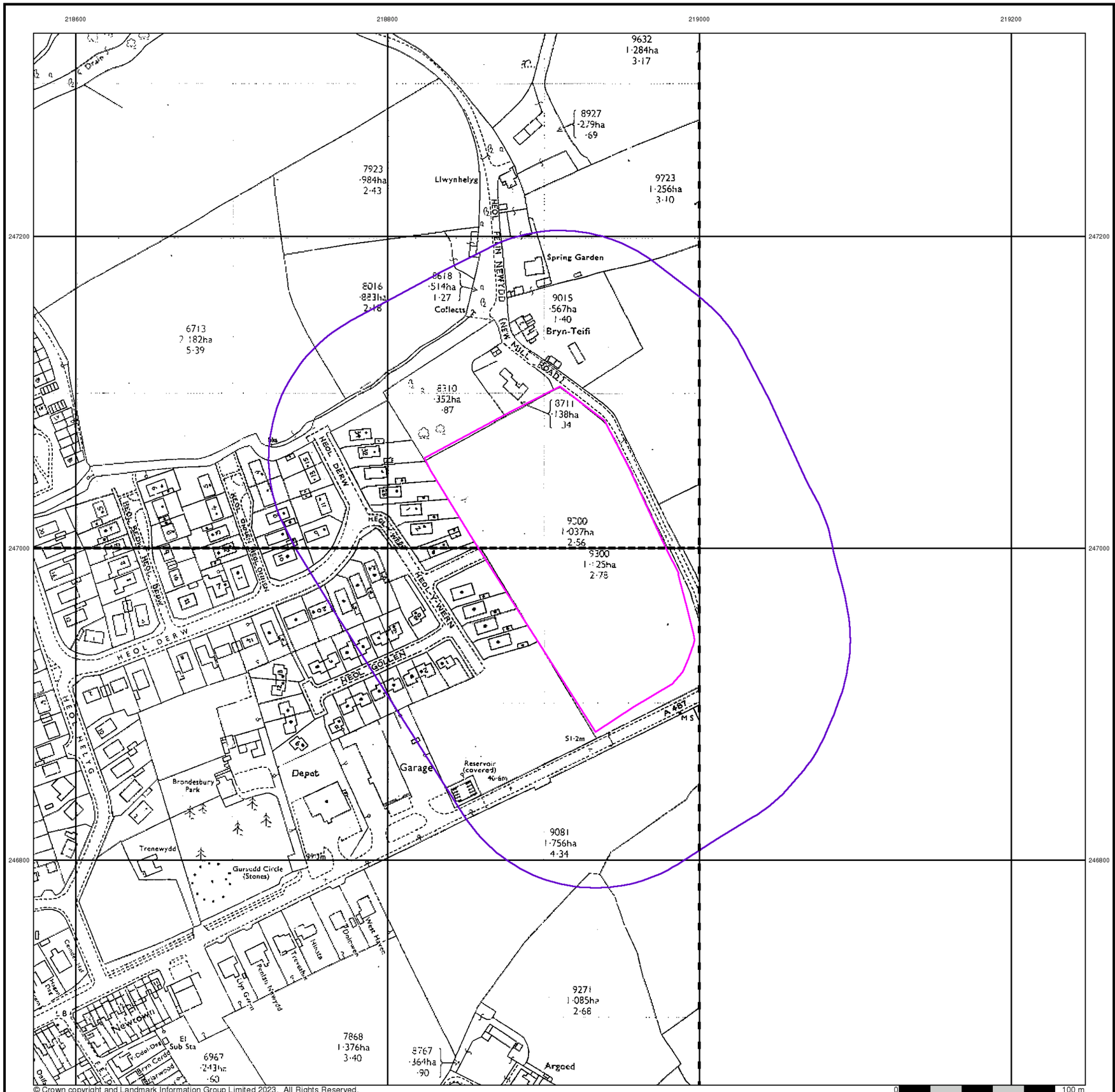

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Additional SIMs

Published 1980 - 1992

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.

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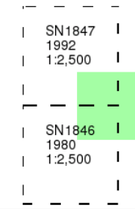
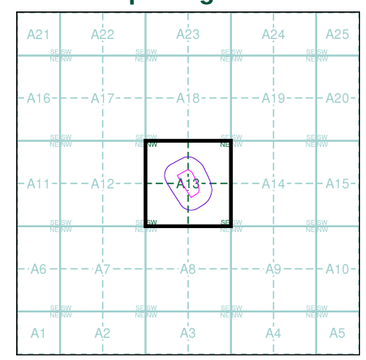


Historical Map - Segment A13



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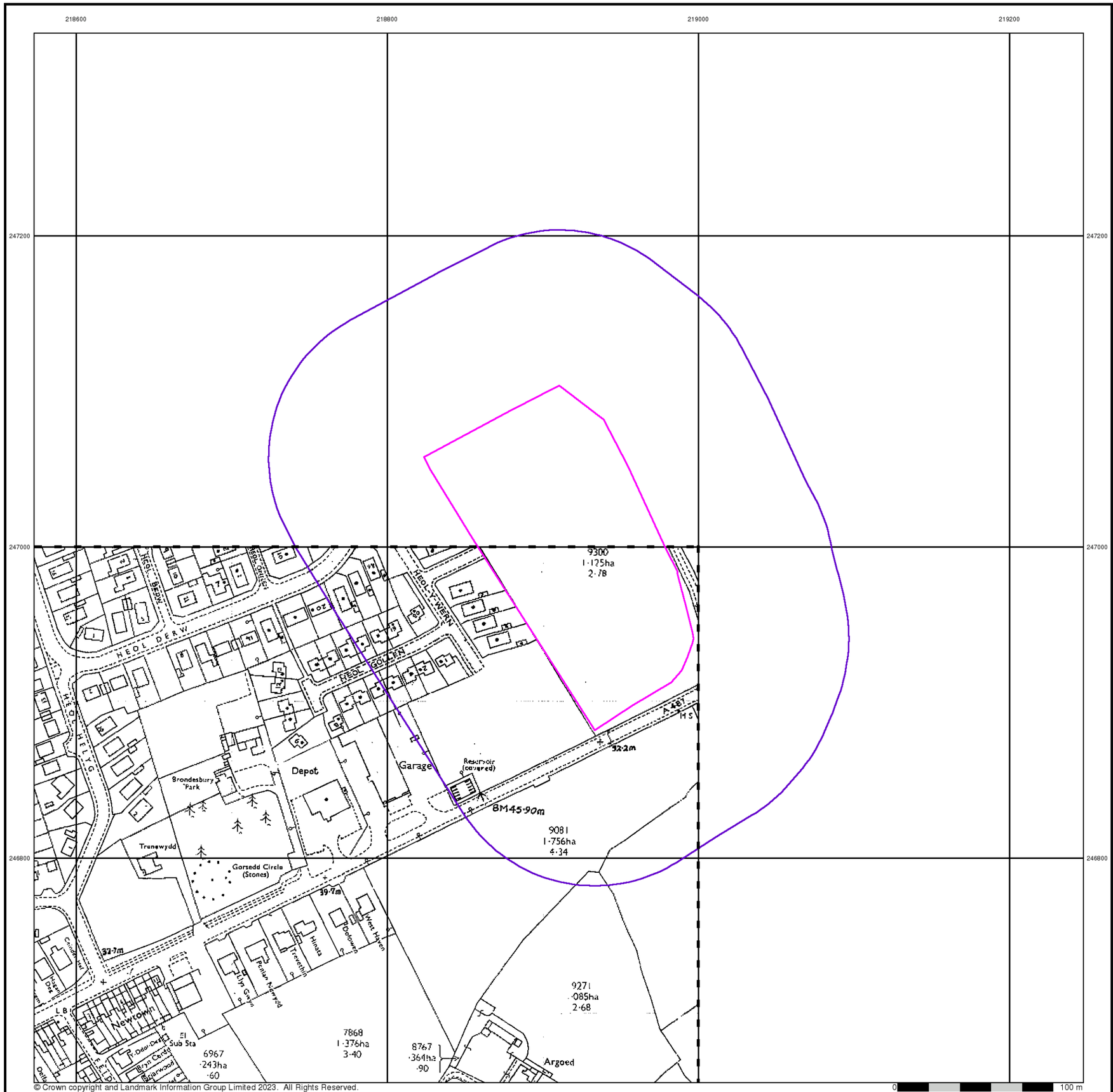

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Additional SIMs

Published 1989

Source map scale - 1:2,500

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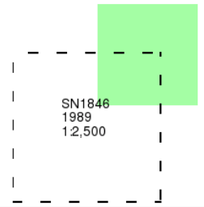
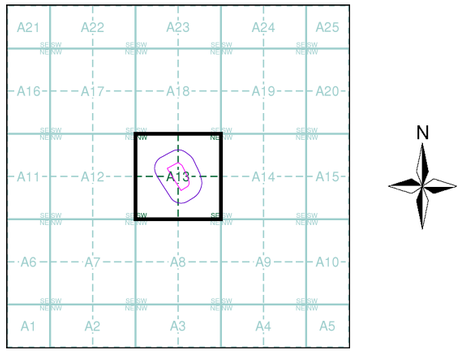


Historical Map - Segment A13



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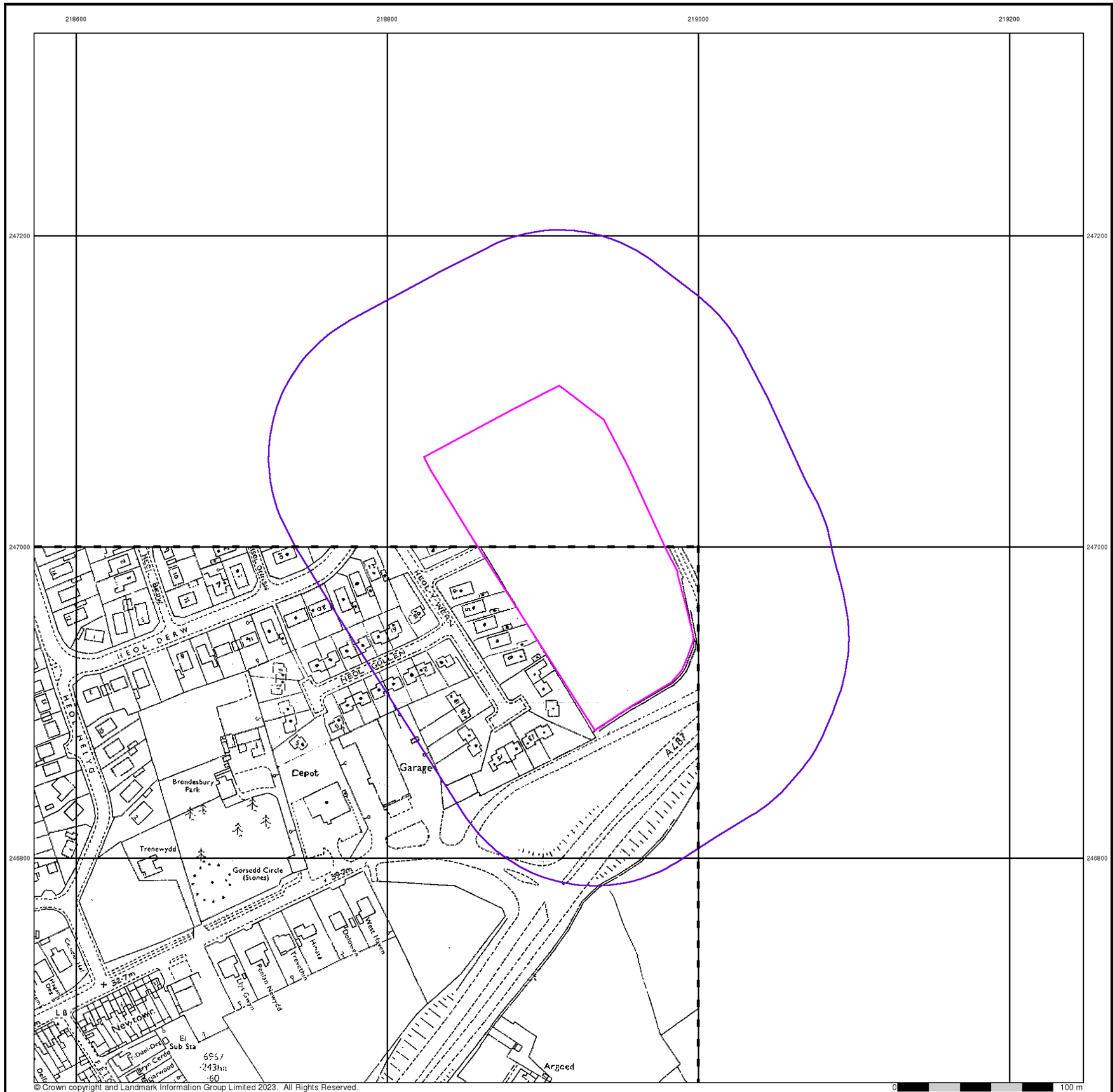

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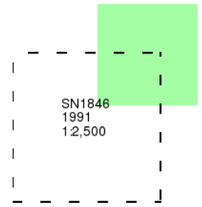
Additional SIMs

Published 1991

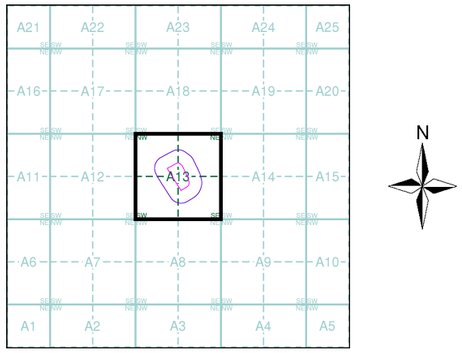
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



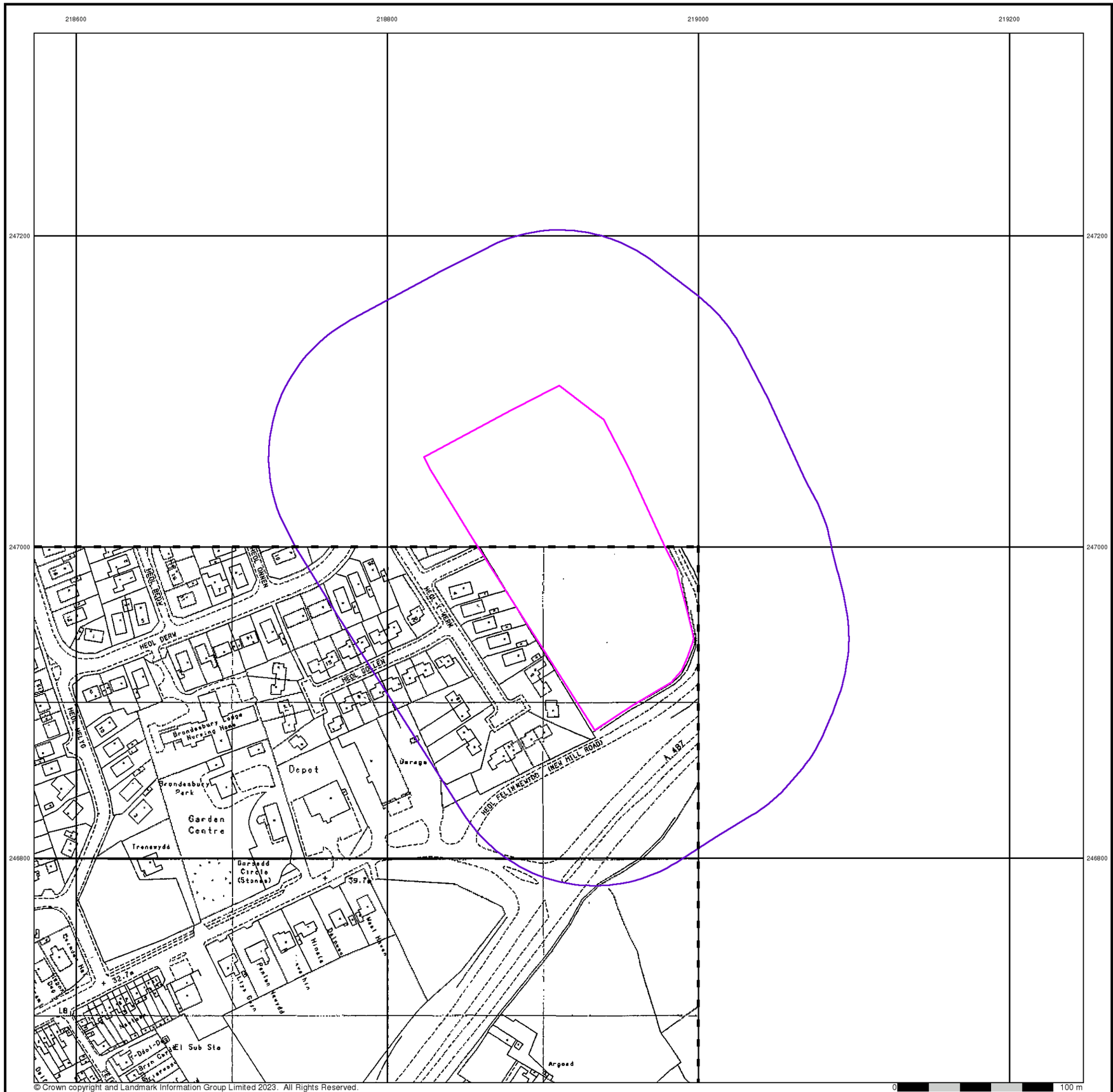
Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

new mill road, Cardigan, SA43 1NE

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



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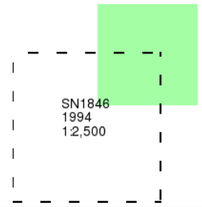
Additional SIMs

Published 1994

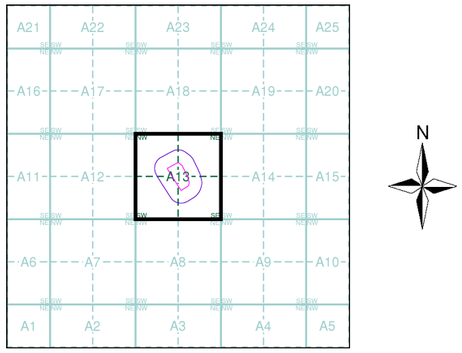
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

new mill road, Cardigan, SA43 1NE

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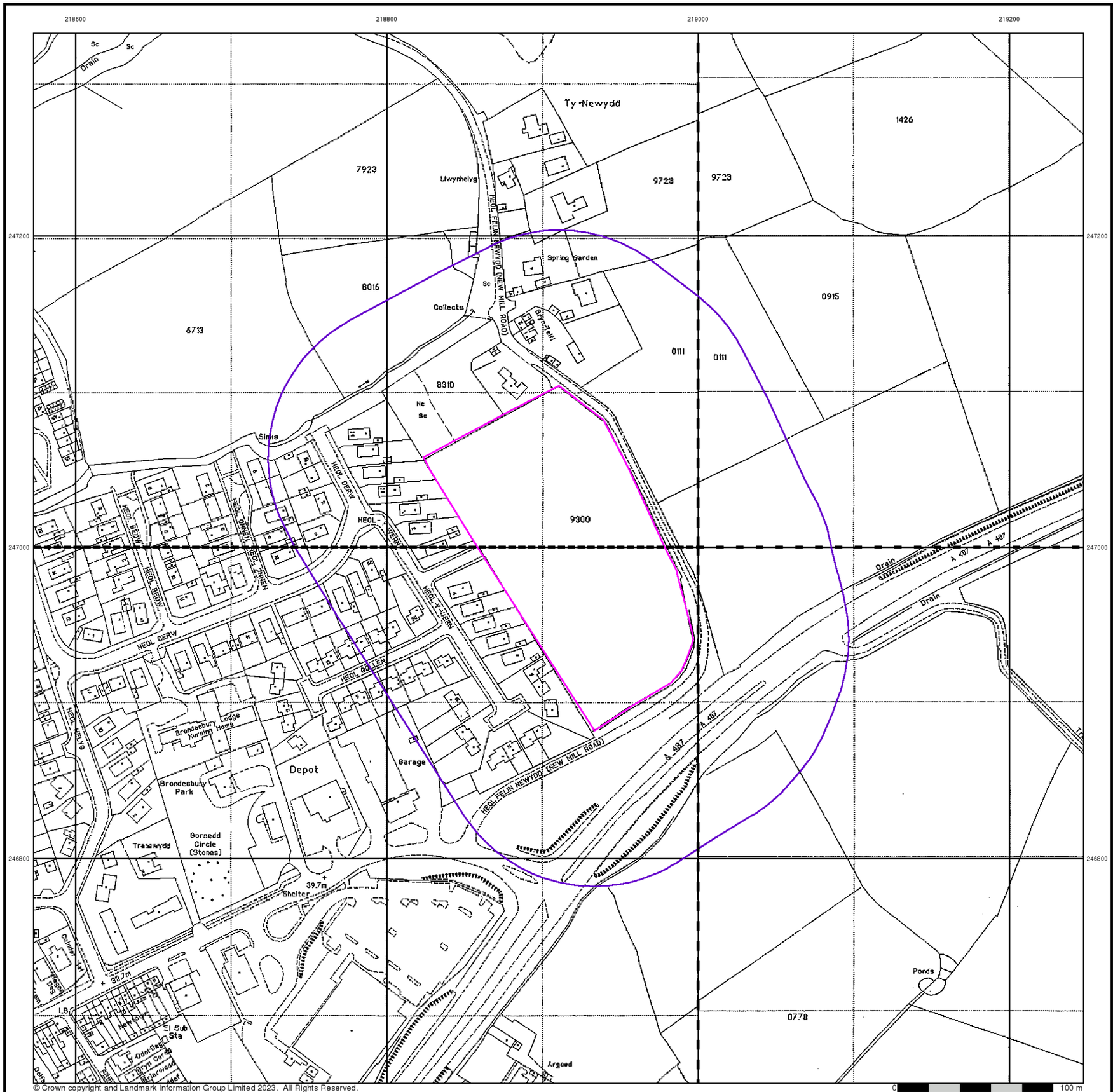

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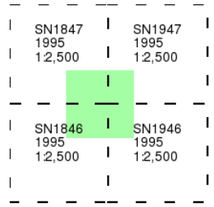
Large-Scale National Grid Data

Published 1995

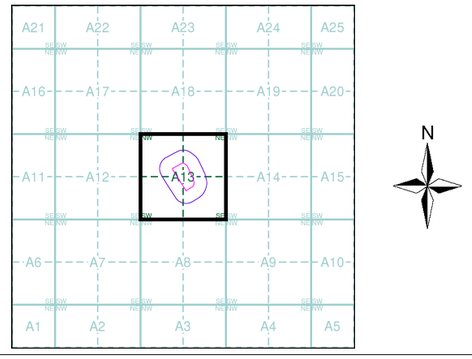
Source map scale - 1:2,500

'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:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

new mill road, Cardigan, SA43 1NE

Landmark INFORMATION GROUP

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

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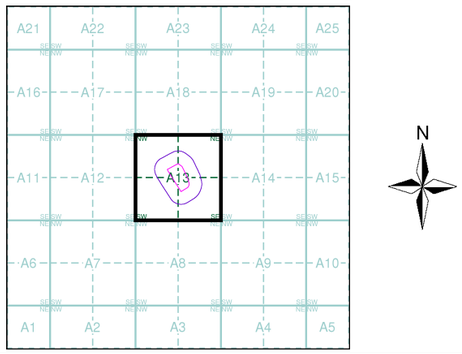
Historical Aerial Photography

Published 2003

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:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218910, 247000
Slice:	A
Site Area (Ha):	2.05
Search Buffer (m):	100

Site Details

new mill road, Cardigan, SA43 1NE

Landmark INFORMATION GROUP

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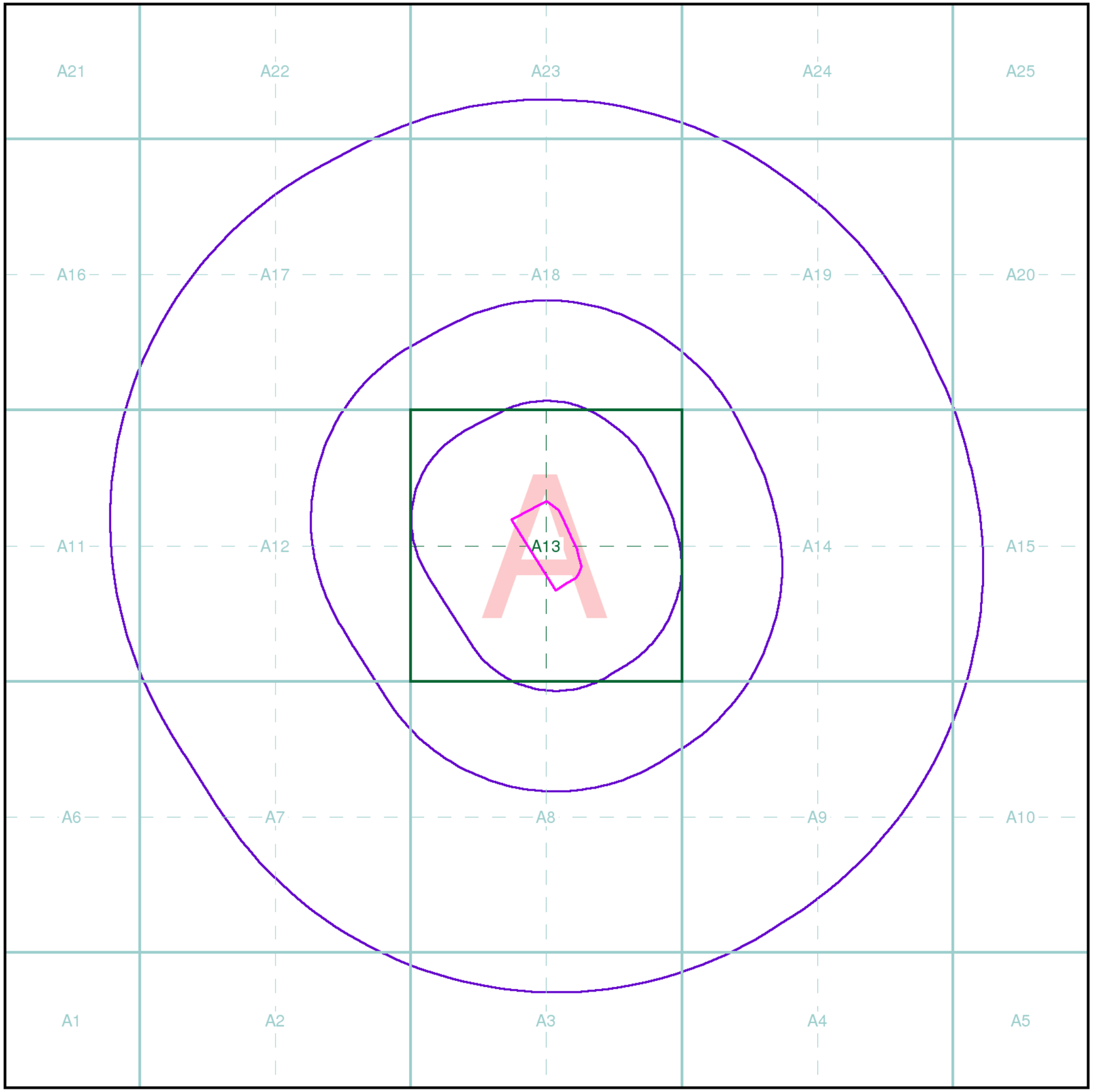
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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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.

Client Details

Ms R Liley, TFW Group Ltd, 5 Deryn Court, Wharfdale Road, Pentwyn, Cardiff, CF23 7HB

Order Details

Order Number:	306860604_1_1
Customer Ref:	17706MP dol y dinter
National Grid Reference:	218920, 247000
Site Area (Ha):	2.05
Search Buffer (m):	1000

Site Details

new mill road, Cardigan, SA43 1NE

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

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

ANNEX B
Risk Assessment Definitions

The contaminated land regime is set out in Part 2A of the Environmental Protection Act (EPA) 1990 and was introduced on the 1st April 2000 in England and 1st July 2001 in Wales. A similar regime was introduced in Scotland on 14th July 2000.

Part 2A was introduced to achieve three overreaching objectives:

(a) To identify and remove unacceptable risks to human health and the environment.
(b) To seek to ensure that contaminated land is made suitable for its current use.
(c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

Under Part 2A the statutory definition of 'contaminated land' is:

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

(a) Significant harm is being caused or there is a significant possibility of such harm being caused; or
(b) Pollution of controlled waters is being, or is likely to be, caused."

Under Part 2A, for land to be classified as 'Contaminated Land' there must be one or more contaminant, pathway, receptor linkages, known as the '**Pollutant Linkage**'. A pollutant linkage requires three essential elements:

(a) A **CONTAMINANT** (SOURCE) – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
(b) A **RECEPTOR** – something which could be adversely affected by a contaminant.
(c) A **PATHWAY** – a route by which a receptor is or might be exposed to or affected by a contaminant.

The term 'Risk' is widely used in different contexts and situations, but a prescriptive definition is given by the Guidelines for Environmental Risk Assessment and Management (DEFRA *et al*, 2000):

'Risk is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence'.

Model Procedures for the Management of Land Contamination – Contamination Land Report 11 (2004) defines a 'Hazard' as

'*a property or situation that in particular circumstances could lead to harm'.*

A framework for qualitative risk assessment is provided in CIRIA publication C552 Contaminated Land Risk Assessment – A Guide to Good Practice (2001). The method requires an assessment of the magnitude of the probability of the risk occurring and the magnitude of the potential consequence. Classifications of consequences and probability, levels and descriptions of risk have been devised from the above publication and are defined in the following sections.

Classification of Consequence

Table A Classification of Consequence	
Classification	**Definition**
Severe	• Short term (acute) risk to human health likely to result in significant harm • Short term risk to controlled waters • Catastrophic damage to buildings/structures • Short term risk to an ecosystem or organism within the particular ecosystem
Medium	• Chronic damage to human health (long term risk) • Pollution of a sensitive water resource • A significant change in an ecosystem or organism within the ecosystem
Mild	• Pollution of non-sensitive water resources • Significant damage to buildings/structures • Damage to sensitive buildings/structure/services or the environment
Negligible	• Harm (not necessarily significant) which may result in financial loss • Non-permanent health effects to humans (easily prevented by PPE for example) • Easily repairable effects of structural (building) damage

Classification of Probability

Table B Classification of Probability	
Classification	**Definition**
High Likelihood	• There is a complete pollution linkage and an event appears very likely to occur in the short term and is inevitable in the long term. • Evidence of harm to the receptor
Likely	• There is a complete pollution linkage which means that is it probable that an event will occur • The event is not inevitable but possible in short term and likely in the long term
Low Likelihood	• There is a complete pollution linkage and circumstances are possible under which an event could occur • It is not certain that an event will occur in the long term, and it is less likely to occur in the short term
Unlikely	• There is a complete pollution linkage but circumstances are such that it is improbable that an event would occur even in the long term

Risk Assessment Matrix

By comparing the consequences of a risk and the probability of the risk of a pollution linkage, the likely risk category can be determined as shown in **Table C** below.

Table C Risk Assessment Matrix

Increasing acceptability →		Consequence			
		Severe	**Medium**	**Mild**	**Negligible**
Probability	**High Likelihood**	High risk	High risk	Medium risk	Low risk
	Likely	High risk	Medium risk	Low risk	Near zero risk
	Low Likelihood	Medium risk	Low risk	Low risk	Near zero risk
	Unlikely	Low risk	Near zero risk	Near zero risk	Near zero risk

Description of Risks and Likely Actions

High Risk
There is a high probability that severe harm could arise to a receptor, or there is evidence that a receptor is currently being severely harmed. The risk if realised is likely to result in liability, and urgent investigation or remediation will be required.

Medium Risk
It is probable that harm will arise to a receptor. However, it is relatively unlikely that such harm would be severe, or if harm does occur the harm is likely to be relatively mild. Investigation will be required to determine the liability, and some remedial works may be required in the long term.

Low Risk
It is possible that harm may arise to a receptor, but it is likely that the harm would be mild.

Near Zero Risk
There is a very low risk of harm to the receptor. In the event of harm being realised the harm is not likely to be severe.

ANNEX C
Trial Pit Logs

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP01
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 1.50 × 0.60	Scale: 1:25
Client: CB3 Consult Ltd		Depth 2.20	Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.40			Grey mottled brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.20			End of Pit at 2.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated to perform infiltration test. 4] Trial pit backfilled with arisings on completion of test. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP02
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 1.50 × 0.60	Scale: 1:25
Client: CB3 Consult Ltd		Depth 2.00	Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.40			Grey mottled brown slightly sandy CLAY.
							Firm to stiff blueish grey mottked brown slightly fissured CLAY.
				2.00			End of Pit at 2.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated to perform infiltration test. 4] Trial pit backfilled with arisings on completion of test. 5] No groundwater inflow recorded.

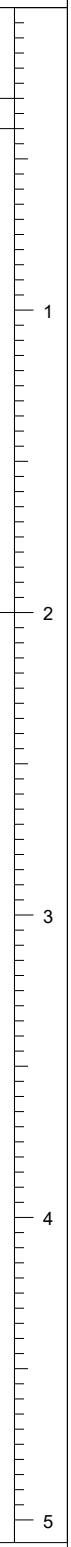
terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP03
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 1.50 × 0.60	Scale: 1:25
Client: CB3 Consult Ltd		Depth 2.00	Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.40			Grey mottled brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.00			End of Pit at 2.000m



Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated to perform infiltration test. 4] Trial pit backfilled with arisings on completion of test. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP04
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 1.50 × 0.60	Scale: 1:25
Client: CB3 Consult Ltd		Depth 2.20	Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.40			Grey mottled brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.20			End of Pit at 2.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated to perform infiltration test. 4] Trial pit backfilled with arisings on completion of test. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP05
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 1.50 × 0.60, Depth 2.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.40			Grey mottled brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.00			End of Pit at 2.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated to perform infiltration test. 4] Trial pit backfilled with arisings on completion of test. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP06
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.40	ES		0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.50			Soft yellowish brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.40			Stiff blueish grey slightly fissured CLAY.
				4.00			End of Pit at 4.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP07
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.50			Soft yellowish brown slightly sandy CLAY.
							Firm to stiff blueish grey mottled brown slightly fissured CLAY.
	2.60	ES		2.70			Stiff blueish grey slightly fissured CLAY.
	3.50	ES					
				4.00			End of Pit at 4.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP08
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
							Soft yellowish brown slightly sandy CLAY.
	0.60	ES		0.60			Firm to stiff blueish grey mottled brown slightly fissured CLAY.
	2.20	ES		2.20			Stiff blueish grey slightly fissured CLAY.
				4.00			End of Pit at 4.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP09
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.60			Soft yellowish brown slightly sandy CLAY.
	1.80	ES					Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.20			Stiff blueish grey slightly fissured CLAY.
				4.00			End of Pit at 4.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP10
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.00	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.70	ES		0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.80			Soft yellowish brown slightly sandy CLAY.
				2.40			Firm to stiff blueish grey mottled brown slightly fissured CLAY.
	4.00	ES		4.00			Stiff blueish grey slightly fissured CLAY.
							End of Pit at 4.000m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP11
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: Depth 4.20 (2.00 × 0.70)	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.70			Soft yellowish brown slightly sandy CLAY.
	1.00	ES					Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.40			Stiff blueish grey slightly fissured CLAY.
				4.20			End of Pit at 4.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP12
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.20	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.60			Soft yellowish brown slightly sandy CLAY.
	2.20	ES		2.40			Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				4.20			Stiff blueish grey slightly fissured CLAY.
							End of Pit at 4.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

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Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP13
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 20/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 × 0.70, Depth 4.20	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.80			Soft yellowish brown slightly sandy CLAY.
	1.80	ES					Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.50			Stiff blueish grey slightly fissured CLAY.
				4.20			End of Pit at 4.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Trial Pit Log

Trial Pit No: TP14
Sheet 1 of 1

Project Name: Dol-y-dinter Cardigan	Project No: 17706	Co-ords: -	Date: 21/02/2023
Location: New mill road, cardigan, SA43 1NE		Dimensions: 2.00 x 0.70, Depth 4.20	Scale: 1:25
Client: CB3 Consult Ltd			Logged: MP

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			Brown organic rich slightly gravelly clayey SAND. With roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone.
				0.90			Soft yellowish brown slightly sandy CLAY.
	2.00	ES					Firm to stiff blueish grey mottled brown slightly fissured CLAY.
				2.60			Stiff blueish grey slightly fissured CLAY.
	3.90	ES					
				4.20			End of Pit at 4.200m

Stability: Stable

Remarks: 1] Consistency, strength and density indicators are based upon field judgement. 2] Density indicator is in brackets and is for guidance only, and is not in accordance with BS 5930:2015. 3] Trial pit terminated at extent of excavator's reach. 4] Trial pit backfilled with arisings. 5] No groundwater inflow recorded.

ANNEX D
Soakaway Results

SOAKAWAY TEST

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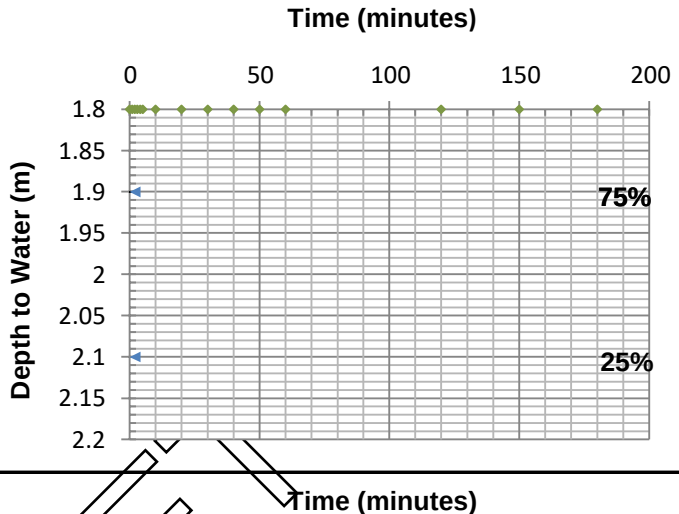
Site Name: Dol Y Dinter Cardigan
Project Number: 17706
Date: 20.03.2023
Engineer: M. Peregrine

Trial Pit: **TP01**

TEST 1

Length	1.50	m
Width	0.60	m
Depth	2.20	m
Fill Level	1.80	m
V_{p75-25}	0.18	m^3
a_{p50}	1.74	m^2
t_{p75-25}	0	minutes

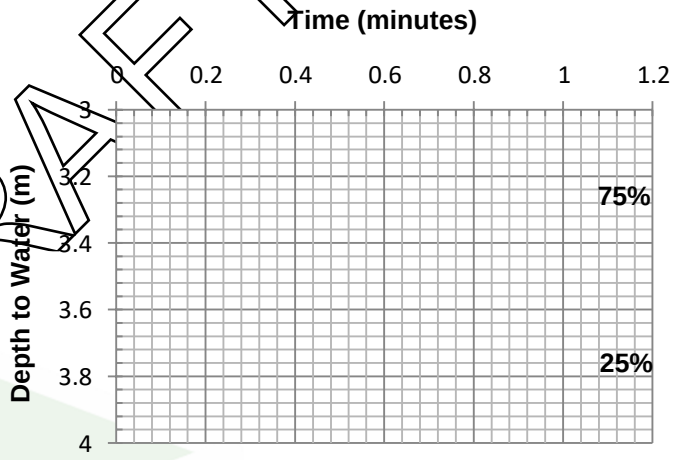
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 2

Length	1.50	m
Width	0.60	m
Depth	2.20	m
Fill Level		m
V_{p75-25}	0.99	m^3
a_{p50}	5.52	m^2
t_{p75-25}	0	minutes

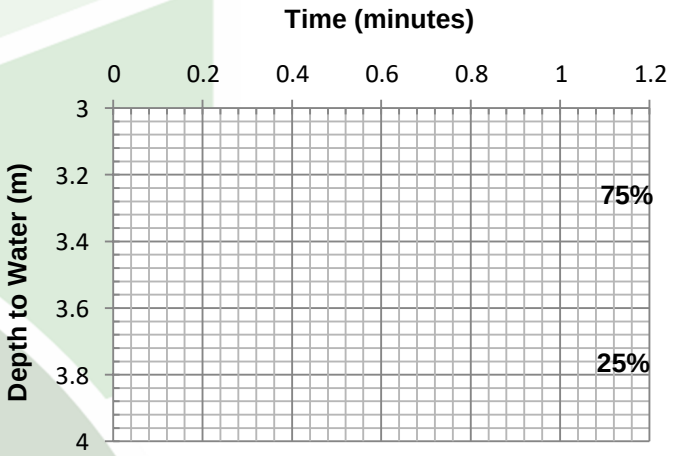
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 3

Length	1.50	m
Width	0.60	m
Depth	2.20	m
Fill Level		m
V_{p75-25}	0.99	m^3
a_{p50}	5.52	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



REMARKS:
Test carried out in accordance with BRE Digest 365 (2016)

SOAKAWAY TEST

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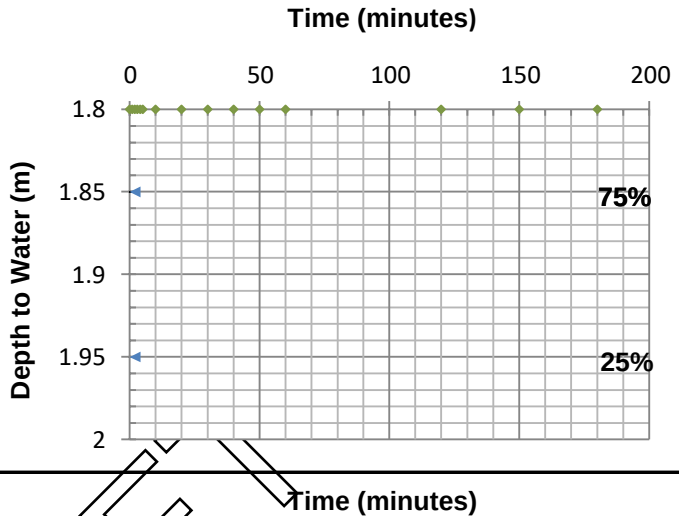
Site Name: Dol Y Dinter Cardigan
Project Number: 17706
Date: 20.03.2023
Engineer: M. Peregrine

Trial Pit: **TP02**

TEST 1

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level	1.80	m
V_{p75-25}	0.09	m^3
a_{p50}	1.32	m^2
t_{p75-25}	0	minutes

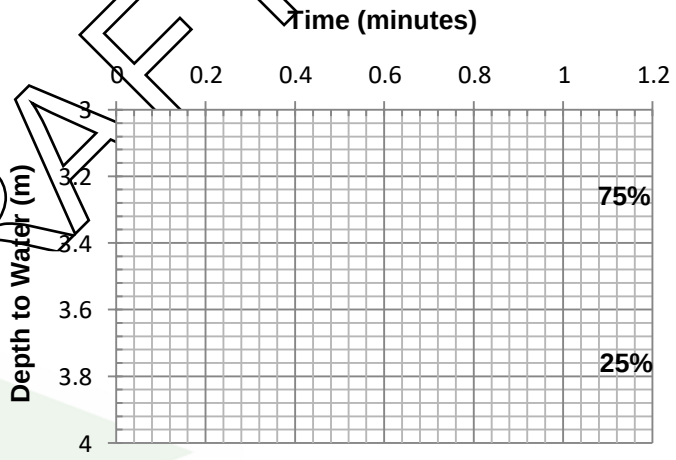
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 2

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

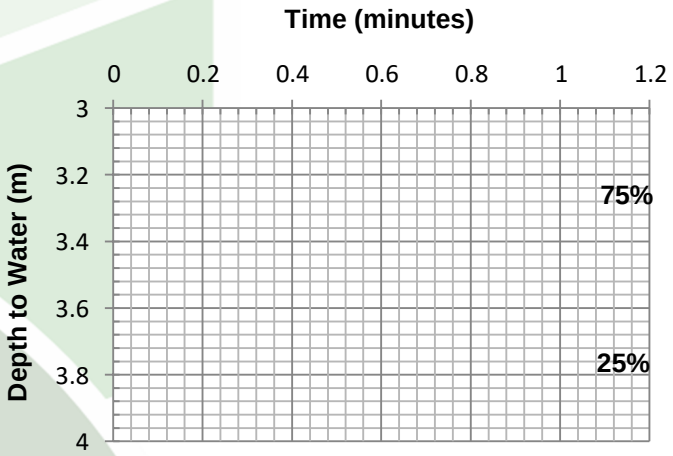
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 3

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



REMARKS:
Test carried out in accordance with BRE Digest 365 (2016)

SOAKAWAY TEST

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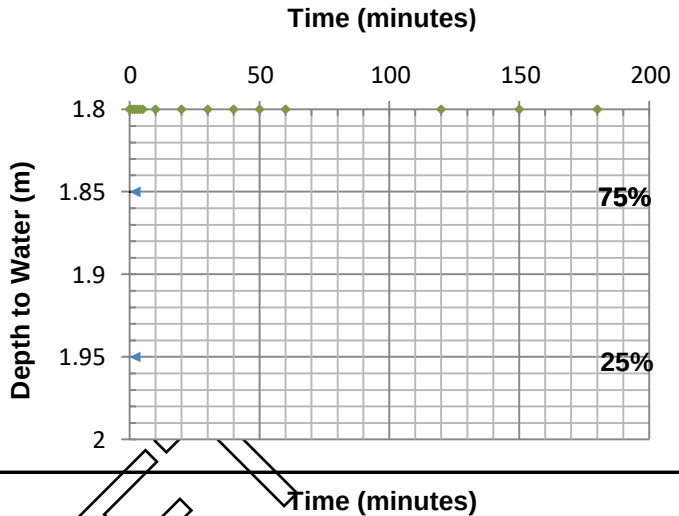
Site Name: Dol Y Dinter Cardigan
Project Number: 17706
Date: 20.03.2023
Engineer: M. Peregrine

Trial Pit: **TP03**

TEST 1

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level	1.80	m
V_{p75-25}	0.09	m^3
a_{p50}	1.32	m^2
t_{p75-25}	0	minutes

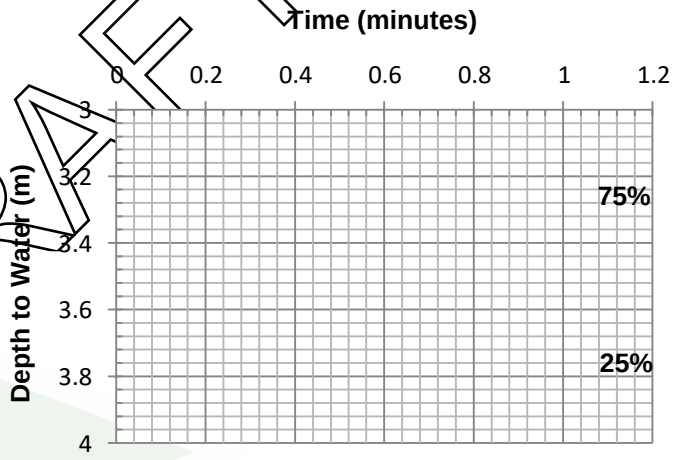
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 2

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

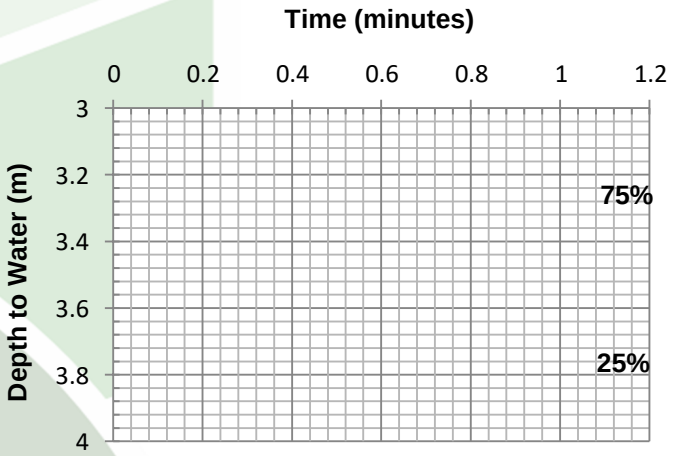
Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



TEST 3

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



REMARKS:
Test carried out in accordance with BRE Digest 365 (2016)

SOAKAWAY TEST

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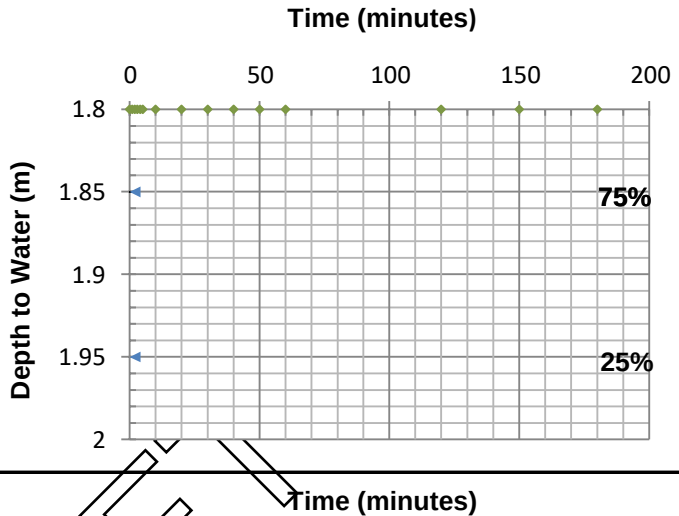
Site Name: Dol Y Dinter Cardigan
Project Number: 17706
Date: 20.03.2023
Engineer: M. Peregrine

Trial Pit: **TP04**

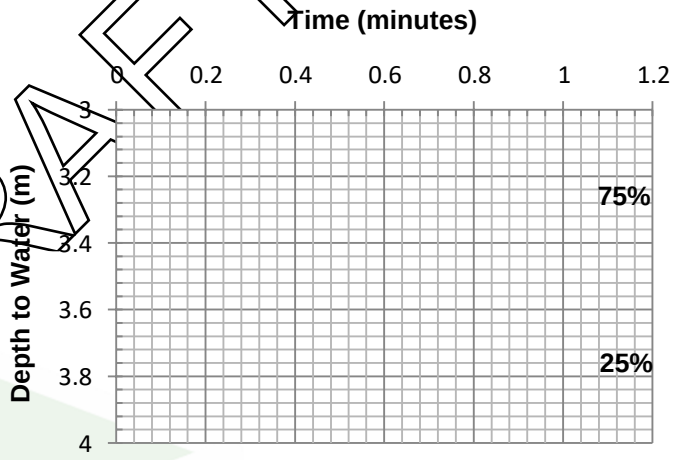
TEST 1

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level	1.80	m
V_{p75-25}	0.09	m^3
a_{p50}	1.32	m^2
t_{p75-25}	0	minutes
Soil Infiltration Rate, f	**#DIV/0!**	**ms^{-1}**



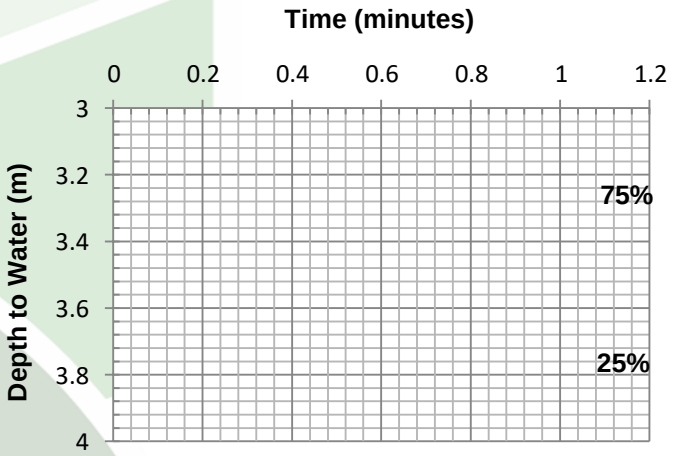
TEST 2

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes
Soil Infiltration Rate, f	**#DIV/0!**	**ms^{-1}**



TEST 3

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m
V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes
Soil Infiltration Rate, f	**#DIV/0!**	**ms^{-1}**



REMARKS:
Test carried out in accordance with BRE Digest 365 (2016)

SOAKAWAY TEST

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Site Name: Dol Y Dinter Cardigan
Project Number: 17706
Date: 20.03.2023
Engineer: M. Peregrine

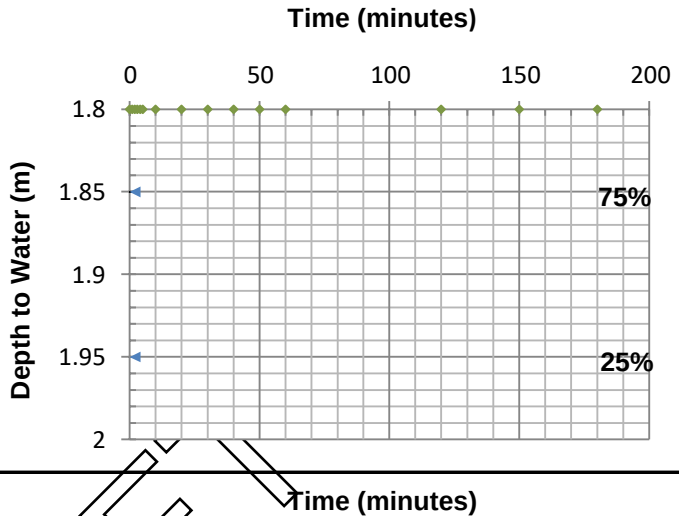
Trial Pit: **TP05**

TEST 1

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level	1.80	m

V_{p75-25}	0.09	m^3
a_{p50}	1.32	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**

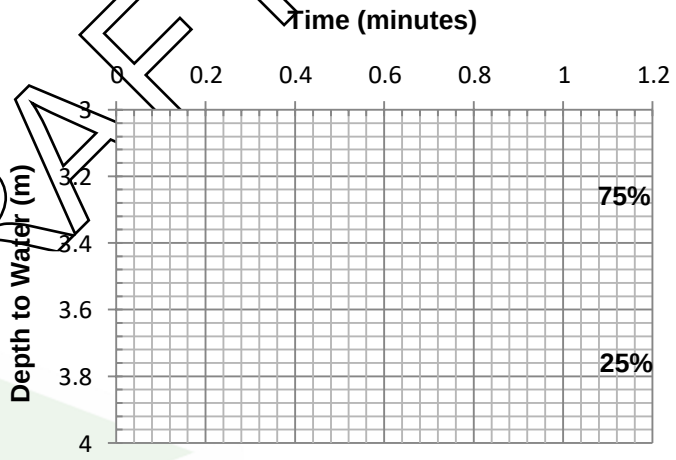


TEST 2

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m

V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**

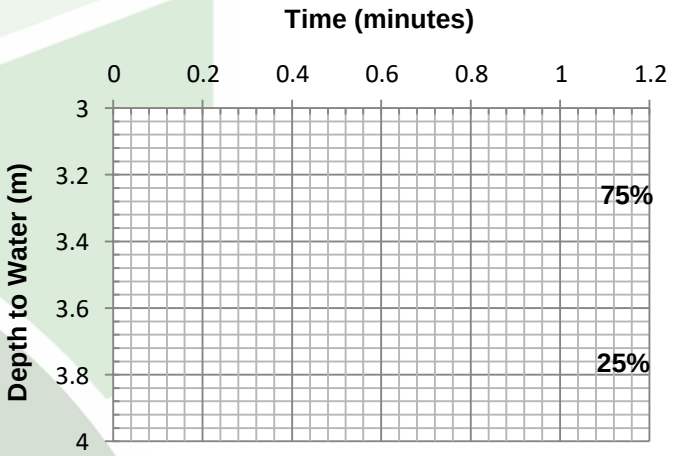


TEST 3

Length	1.50	m
Width	0.60	m
Depth	2.00	m
Fill Level		m

V_{p75-25}	0.9	m^3
a_{p50}	5.1	m^2
t_{p75-25}	0	minutes

Soil Infiltration Rate, f **#DIV/0!** **ms^{-1}**



REMARKS:
Test carried out in accordance with BRE Digest 365 (2016)

ANNEX E
Borehole Logs

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS01**
Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:	Hole Type WS
Location:	New mill road, cardigan, SA43 1NE		Level:	Scale 1:50
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023	Logged By AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.30				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.40				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=17 (0,1/1,2,6,8)					Firm to stiff blueish grey mottled brown CLAY.
								From 1.00m depth: Confirmed as stiff.
	1.80	SPT	N=50 (10,13/15,15,16,4)	1.80				End of Borehole at 1.800m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 1.8m depth. Slotted pipe with granular response zone from 1.0m-1.8m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:
Location:	New mill road, cardigan, SA43 1NE		Level:
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023

Hole Type: WS
Scale: 1:50
Logged By: AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.20				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.80				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=11 (1,1/2,2,3,4)					Firm blueish grey mottled brown CLAY.
				1.50				Stiff blueish grey mottled brown CLAY.
	2.00	SPT	N=17 (1,2/3,4,5,5)					
	3.00	SPT	N=27 (3,3/5,6,7,9)	3.00				End of Borehole at 3.000m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 3.0m depth. Slotted pipe with granular response zone from 1.0m-3.0m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS03**
Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:	Hole Type WS
Location:	New mill road, cardigan, SA43 1NE		Level:	Scale 1:50
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023	Logged By AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.35				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.75				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=8 (0,1/1,2,2,3)					Soft to firm blueish grey mottled brown CLAY.
				1.40				Stiff blueish grey mottled brown CLAY.
	2.00	SPT	N=17 (1,1/2,4,5,6)					
	3.00	SPT	N=25 (3,4/4,5,7,9)	3.00				End of Borehole at 3.000m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 3.0m depth. Slotted pipe with granular response zone from 1.0m-3.0m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:
Location:	New mill road, cardigan, SA43 1NE		Level:
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023

Hole Type: WS
Scale: 1:50
Logged By: AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.25				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.80				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=7 (0,0/1,2,2,2)					Soft blueish grey mottled brown CLAY.
				1.35				Firm to stiff blueish grey mottled brown CLAY.
	2.00	SPT	N=16 (1,2/2,3,5,6)					
	3.00	SPT	N=20 (3,3/4,5,5,6)	3.00				End of Borehole at 3.000m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 3.0m depth. Slotted pipe with granular response zone from 1.0m-3.0m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:
Location:	New mill road, cardigan, SA43 1NE		Level:
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023

Hole Type: WS
Scale: 1:50
Logged By: AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.30				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.90				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=7 (1,1/2,2,1,2)	1.10				Soft blueish grey mottled brown CLAY.
								Firm blueish grey mottled brown CLAY.
	2.00	SPT	N=12 (2,2/3,3,3,3)	2.20				Stiff blueish grey mottled brown CLAY.
	3.00	SPT	N=20 (2,3/3,4,6,7)	3.00				End of Borehole at 3.000m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 3.0m depth. Slotted pipe with granular response zone from 1.0m-3.0m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

terra firma
Geotechnical & Geoenvironmental Specialists
Tel: 02920 735354
info@terrafirmawales.co.uk
www.terrafirmawales.co.uk

Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name:	Dol-y-dinter Cardigan	Project No: 17706	Co-ords:
Location:	New mill road, cardigan, SA43 1NE		Level:
Client:	CB3 Consult Ltd		Dates: 22/02/2023 - 22/02/2023

Hole Type: WS
Scale: 1:50
Logged By: AC

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description
	Depth (m)	Type	Results					
				0.30				Brown organic rich slightly gravelly sandy CLAY with occasional roots and rootlets (<5mm). Gravel is fine to coarse sub angular to rounded of sandstone. Sand is fine to coarse.
				0.75				Firm grey mottled brown slightly sandy CLAY. Sand is fine.
	1.00	SPT	N=9 (1,2/2,3,2,2)					Stiff blueish grey mottled brown CLAY.
				1.50				Stiff blueish grey mottled brown CLAY.
	2.00	SPT	N=19 (2,3/3,4,6,6)					
	3.00	SPT	N=24 (5,5/6,5,6,7)	3.00				End of Borehole at 3.000m

Remarks: 1] On completion a 50mm standpipe (50mm) was installed to 3.0m depth. Slotted pipe with granular response zone from 1.0m-3.0m, solid standpipe with bentonite seal GL-1.0m, and a raised cover. 2] No groundwater encountered.

ANNEX F
Laboratory Soil Chemical Test Results

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	23-06750-1
Initial Date of Issue:	08-Mar-2023
Client	Terra Firma (Wales) Ltd
Client Address:	5 Deryn Court Wharfedale Road Pentwyn Cardiff CF23 7HA
Contact(s):	michael@terrafirmawales.co.uk; morgan@terrafirmawales.co.uk
Project	Cardigan Dol -y- dinter
Quotation No.:	
Order No.:	17706MP
No. of Samples:	13
Turnaround (Wkdays):	7
Date Approved:	08-Mar-2023
Approved By:	
Details:	Stuart Henderson, Technical Manager

Date Received:	28-Feb-2023
Date Instructed:	28-Feb-2023
Results Due:	08-Mar-2023

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd			**Chemtest Job No.:**		23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750
Quotation No.:			**Chemtest Sample ID.:**		1598331	1598332	1598333	1598334	1598335	1598336	1598337	1598338	1598339
Order No.: 17706MP			Client Sample Ref.:		1	2	3	4	5	6	7	8	9
			Client Sample ID.:		TP10ES1	TP08ES1	TP06ES1	TP10ES2	TP14ES2	TP12ES1	TP08ES2	TP07ES2	TP11ES1
			Sample Location:		TP10	TP08	TP06	TP10	TP14	TP12	TP08	TP07	TP11
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.7	0.6	0.4	4.0	3.9	2.2	2.2	3.5	1.0
			Date Sampled:		23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
			Time Sampled:		12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY						COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-						-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected						No Asbestos Detected
Moisture	N	2030	%	0.020	22	20	20	16	21	9.7	20	17	18
Soil Colour	N	2040		N/A	Brown	Brown	Brown						Brown
Other Material	N	2040		N/A	Stones	Stones	Stones						Stones
Soil Texture	N	2040		N/A	Clay	Loam	Loam						Loam
pH	M	2010		4.0	8.5	10.8	8.9	8.7	8.7	8.3	8.2	8.6	8.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.4	2.2	1.2						1.2
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010				< 0.010	0.012	< 0.010	< 0.010	0.076	
Total Sulphur	M	2175	%	0.010				< 0.010	< 0.010	< 0.010	< 0.010	0.024	
Cyanide (Complex)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50
Sulphate (Acid Soluble)	U	2430	%	0.010	0.022	0.034	0.010	0.022	0.025	0.021	0.021	0.074	< 0.010
Arsenic	M	2455	mg/kg	0.5	16	18	15						9.9
Beryllium	U	2455	mg/kg	0.5	1.2	1.3	1.3						0.7
Cadmium	M	2455	mg/kg	0.10	< 0.10	< 0.10	0.12						0.12
Chromium	M	2455	mg/kg	0.5	46	46	45						33
Mercury Low Level	M	2450	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Manganese	M	2455	mg/kg	1.0	570	880	960						700
Molybdenum	M	2455	mg/kg	0.5	< 0.5	0.6	1.1						0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0						< 2.0
Copper	M	2455	mg/kg	0.50	16	35	30						21
Nickel	M	2455	mg/kg	0.50	31	44	46						35
Lead	M	2455	mg/kg	0.50	25	26	24						15
Selenium	M	2455	mg/kg	0.25	1.1	1.0	1.1						0.89
Zinc	M	2455	mg/kg	0.50	70	83	81						65
Chromium (Trivalent)	N	2490	mg/kg	1.0	46	46	45						33
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25						< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	4.4	4.4	3.9						3.8

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd		**Chemtest Job No.:**			23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750
Quotation No.:		**Chemtest Sample ID.:**			1598331	1598332	1598333	1598334	1598335	1598336	1598337	1598338	1598339
Order No.: 17706MP		Client Sample Ref.:			1	2	3	4	5	6	7	8	9
		Client Sample ID.:			TP10ES1	TP08ES1	TP06ES1	TP10ES2	TP14ES2	TP12ES1	TP08ES2	TP07ES2	TP11ES1
		Sample Location:			TP10	TP08	TP06	TP10	TP14	TP12	TP08	TP07	TP11
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.7	0.6	0.4	4.0	3.9	2.2	2.2	3.5	1.0
		Date Sampled:			23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
		Time Sampled:			12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY						COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	5.7	6.3	4.0						4.5
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	4.5	5.8	4.2						3.9
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	11	14	9.1						8.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10						< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	26	30	21						21
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	26	30	21						21
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05						< 0.05
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25						< 0.25
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	14	17	17						16
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	28	28	25						29
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	26	27	26						25
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	4.6	7.3	< 2.0						< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	17	17	15						15
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	73	80	69						71
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	90	96	85						85
Total VPH >C5-C10	M	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50						< 0.50
Total EPH >C10-C35	M	2690	mg/kg	10.00	99	110	90						91
Total EPH >C10-C40	N	2690	mg/kg	10.00	120	130	110						110
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd			**Chemtest Job No.:**		23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750	23-06750
Quotation No.:			**Chemtest Sample ID.:**		1598331	1598332	1598333	1598334	1598335	1598336	1598337	1598338	1598339
Order No.: 17706MP			Client Sample Ref.:		1	2	3	4	5	6	7	8	9
			Client Sample ID.:		TP10ES1	TP08ES1	TP06ES1	TP10ES2	TP14ES2	TP12ES1	TP08ES2	TP07ES2	TP11ES1
			Sample Location:		TP10	TP08	TP06	TP10	TP14	TP12	TP08	TP07	TP11
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.7	0.6	0.4	4.0	3.9	2.2	2.2	3.5	1.0
			Date Sampled:		23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
			Time Sampled:		12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY						COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0						< 2.0
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10						< 0.10
Organic Matter BS1377	N	2930	%	0.10	1.6	1.8	1.5						0.80

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd			**Chemtest Job No.:**		23-06750	23-06750	23-06750	23-06750
Quotation No.:			**Chemtest Sample ID.:**		1598340	1598341	1598342	1598343
Order No.: 17706MP			Client Sample Ref.:		10	11	12	13
			Client Sample ID.:		TP09ES1	TP13ES1	TP14ES1	TP07ES1
			Sample Location:		TP09	TP13	TP14	TP07
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.8	1.8	2.0	2.6
			Date Sampled:		23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
			Time Sampled:		12:00	12:00	12:00	12:00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	17	18	12	22
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Clay	Loam	Clay	Loam
pH	M	2010		4.0	8.8	8.7	8.7	10.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.95	1.4	2.0	2.0
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010				
Total Sulphur	M	2175	%	0.010				
Cyanide (Complex)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Acid Soluble)	U	2430	%	0.010	0.018	0.023	0.043	0.010
Arsenic	M	2455	mg/kg	0.5	15	21	9.1	9.6
Beryllium	U	2455	mg/kg	0.5	1.1	1.2	0.7	0.6
Cadmium	M	2455	mg/kg	0.10	< 0.10	0.11	< 0.10	< 0.10
Chromium	M	2455	mg/kg	0.5	38	47	28	20
Mercury Low Level	M	2450	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Manganese	M	2455	mg/kg	1.0	930	1600	590	440
Molybdenum	M	2455	mg/kg	0.5	0.6	0.7	< 0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50	28	34	18	15
Nickel	M	2455	mg/kg	0.50	46	48	28	32
Lead	M	2455	mg/kg	0.50	20	25	13	13
Selenium	M	2455	mg/kg	0.25	1.1	1.1	0.71	0.48
Zinc	M	2455	mg/kg	0.50	73	83	51	40
Chromium (Trivalent)	N	2490	mg/kg	1.0	38	47	28	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	3.7	3.2	3.0	3.4

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd			**Chemtest Job No.:**		23-06750	23-06750	23-06750	23-06750
Quotation No.:			**Chemtest Sample ID.:**		1598340	1598341	1598342	1598343
Order No.: 17706MP			Client Sample Ref.:		10	11	12	13
			Client Sample ID.:		TP09ES1	TP13ES1	TP14ES1	TP07ES1
			Sample Location:		TP09	TP13	TP14	TP07
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.8	1.8	2.0	2.6
			Date Sampled:		23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
			Time Sampled:		12:00	12:00	12:00	12:00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	4.3	4.0	4.3	4.6
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	3.2	4.2	4.6	4.3
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	8.9	14	11	9.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	20	25	23	22
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	20	25	23	22
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	15	17	15	16
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	25	28	22	29
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	25	28	24	27
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	3.6	3.4	4.9	2.7
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	16	15	13	15
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	69	76	66	75
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	85	91	79	90
Total VPH >C5-C10	M	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35	M	2690	mg/kg	10.00	89	100	89	97
Total EPH >C10-C40	N	2690	mg/kg	10.00	100	120	100	110
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Cardigan Dol -y- dinter

Client: Terra Firma (Wales) Ltd			**Chemtest Job No.:**		23-06750	23-06750	23-06750	23-06750
Quotation No.:			**Chemtest Sample ID.:**		1598340	1598341	1598342	1598343
Order No.: 17706MP			Client Sample Ref.:		10	11	12	13
			Client Sample ID.:		TP09ES1	TP13ES1	TP14ES1	TP07ES1
			Sample Location:		TP09	TP13	TP14	TP07
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.8	1.8	2.0	2.6
			Date Sampled:		23-Feb-2023	23-Feb-2023	23-Feb-2023	23-Feb-2023
			Time Sampled:		12:00	12:00	12:00	12:00
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.13
Organic Matter BS1377	N	2930	%	0.10	0.90	1.0	2.0	0.70

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35–C40	Acetone/Heptane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
2930	Organic Matter	Organic Matter	Acid Dichromate digestion/Titration

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

ANNEX G
Ground Gas Monitoring Results

ANNEX H
Geotechnical Test Results

Results Summary

Apex Testing Solutions Limited
Sturmi Way
Village Farm Industrial Estate
Pyle
Bridgend
CF33 6BZ

Telephone: 01656 746762
E-mail: andrew.grogan@apex-drilling.com
laura.davis@apex-drilling.com

Reporting Details		**Key Information**	
Company Name:	TFW Group Ltd	**Site Name:**	Dol - y-dinter Cardigan
Address:	5 Deryn Court		
	Wharfdale Road	**Job Number:**	D23104
	Cardiff	**Date Received:**	27/02/2023
	CF23 7HA	**Job Coordinator:**	K. Lester
Contact Name:	**M.Peregrine**		
Contact Number:	**7516142405**		

Item No.	Tests Undertaken	Number of Tests
1	Atterburg Limits (4 point) - BS1377-2: 1990	5
2	Moisture Content - BS1377 -2: 1990	5

Results Issued: 06/03/2023

Comments

Results herein relate only to samples received in the laboratory and where not sampled by Apex Testing Solutions personnel relate to the samples as received.
Where tests are UKAS accredited any Opinion and/or Interpretation expressed herein are outside the scope of the UKAS Accreditation. The reports shall not be reproduced in full without the written approval of the laboratory.

Please contact the job coordinator should any further information be required.

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31874		CF23 7HA

Site Ref / Hole ID:	TP05	**Depth (m):**	2.00 - 2.20
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Grey CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	06 March 2023

Test Results

Moisture Content (%)	29.4

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	A Grogan	06/03/2023	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

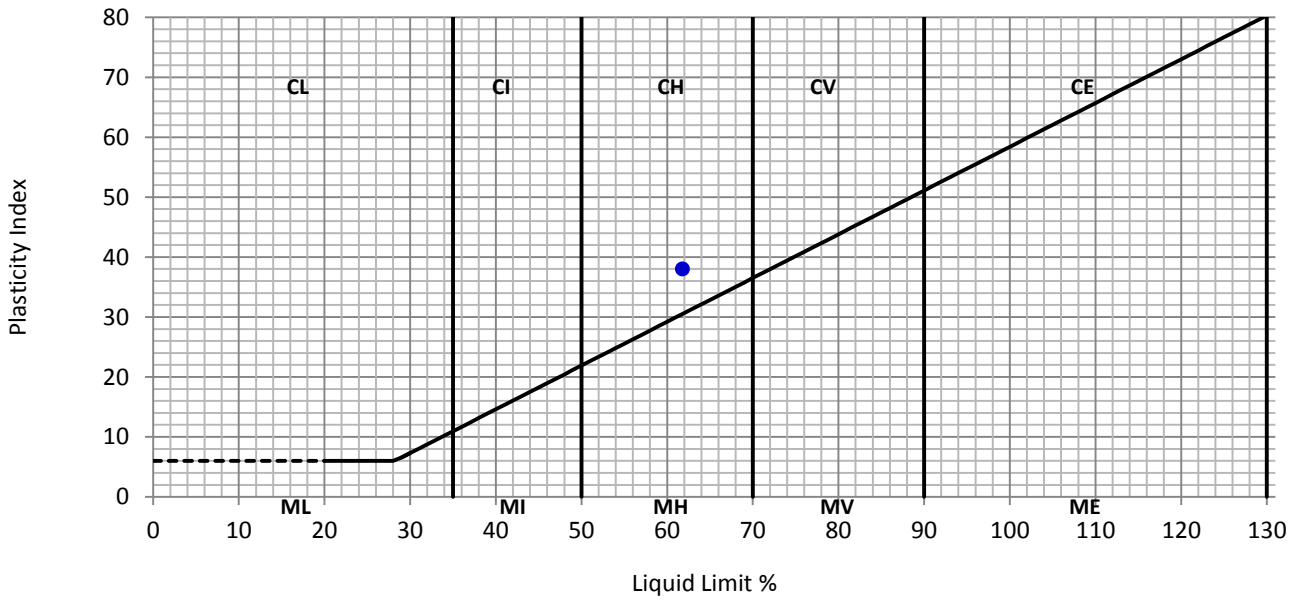
Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	31874		

Site Ref / Hole ID:	TP05	**Depth (m):**	2.00 - 2.20
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Grey CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	03 March 2023

Test Results

Liquid Limit	62	%
Plastic Limit	24	%
Plasticity Index	38	%

Preparation:	4.2.3 Natural Specimen	
Proportion retained on 425µm sieve:	0	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 3.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	A Grogan	06/03/2023	**ATT**
			A Grogan, Laboratory Manager		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	31875		

Site Ref / Hole ID:	TP07	**Depth (m):**	3.50 - 3.70
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	02 March 2023

Test Results

Moisture Content (%)	16.9

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	A Grogan	06/03/2023	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

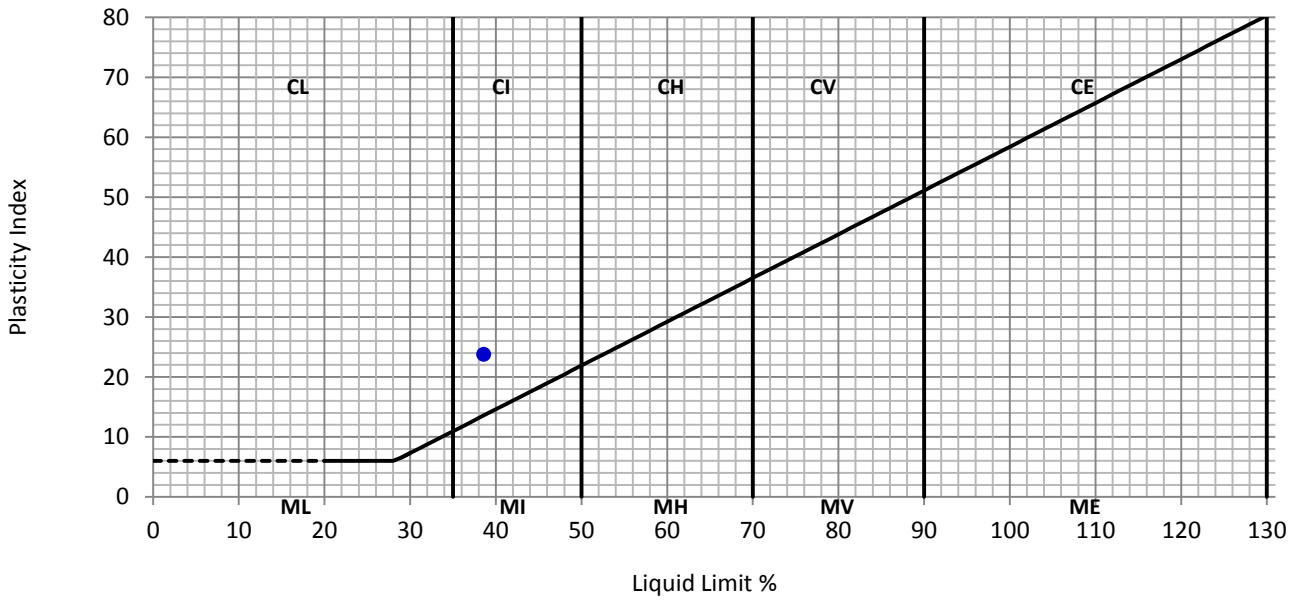
Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31875		CF23 7HA

Site Ref / Hole ID:	TP07	**Depth (m):**	3.50 - 3.70
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	03 March 2023

Test Results

Liquid Limit	39	%
Plastic Limit	15	%
Plasticity Index	24	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	10	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 3.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	G Llewellyn	06/03/2023	**ATT**
			G Llewellyn, Senior Technician		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff CF23 7HA
ATS Sample No:	31878		

Site Ref / Hole ID:	TP09	**Depth (m):**	1.80 - 2.00
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brownish grey CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	06 March 2023

Test Results

Moisture Content (%)	30.2

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	06/03/2023	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

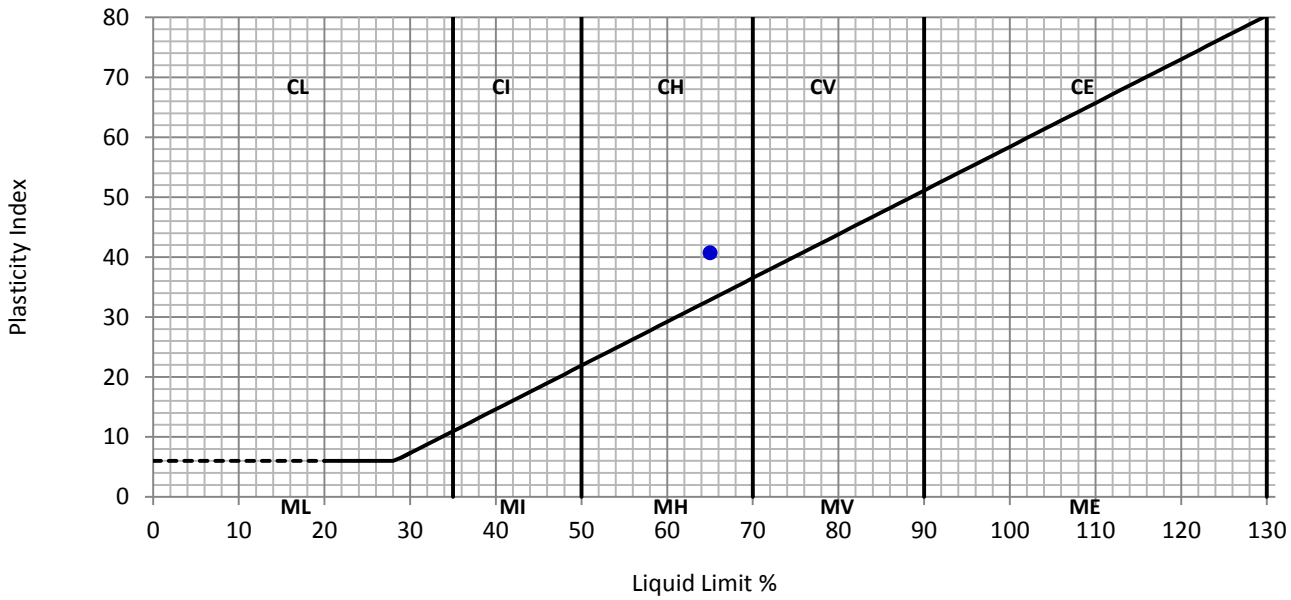
Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31878		CF23 7HA

Site Ref / Hole ID:	TP09	**Depth (m):**	1.80 - 2.00
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Brownish grey CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	06 March 2023

Test Results

Liquid Limit	65	%
Plastic Limit	24	%
Plasticity Index	41	%

Preparation:	4.2.3 Natural Specimen	
Proportion retained on 425µm sieve:	0	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 3.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	A Grogan	06/03/2023	**ATT**
			A Grogan, Laboratory Manager		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31876		CF23 7HA

Site Ref / Hole ID:	TP10	**Depth (m):**	1.20 - 1.40
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	06 March 2023

Test Results

Moisture Content (%)	29.1

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	06/03/2023	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

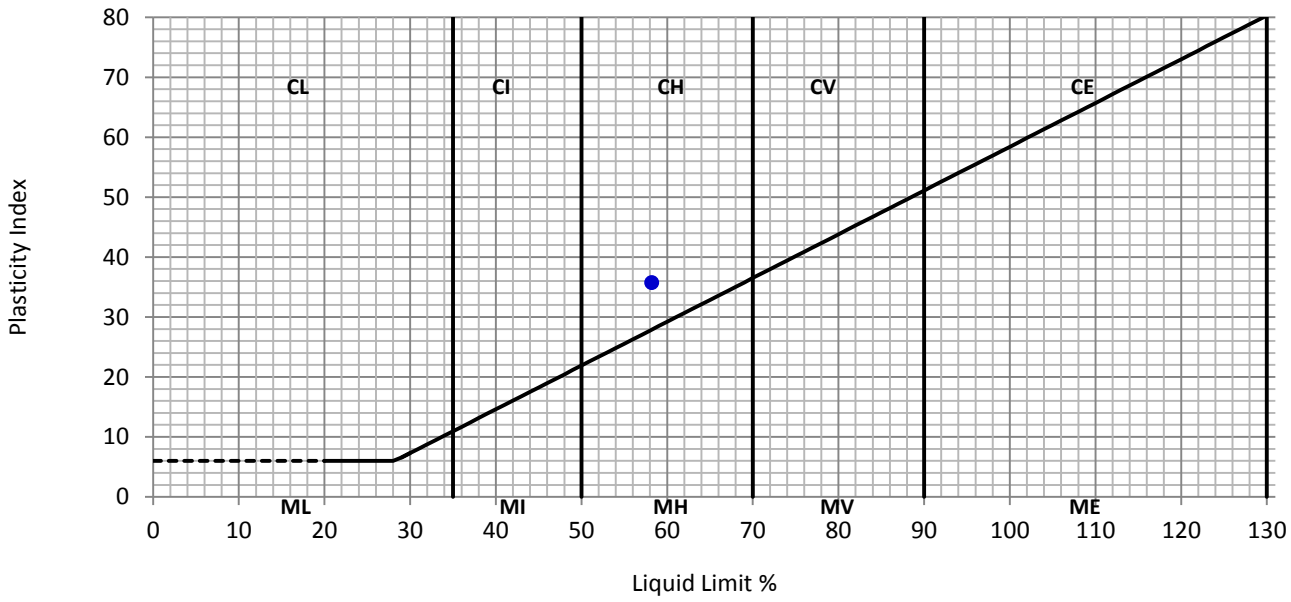
Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31876		CF23 7HA

Site Ref / Hole ID:	TP10	**Depth (m):**	1.20 - 1.40
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	02 March 2023

Test Results

Liquid Limit	58	%
Plastic Limit	22	%
Plasticity Index	36	%

Preparation:	4.2.3 Natural Specimen	
Proportion retained on 425µm sieve:	0	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 3.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	G Llewellyn	06/03/2023	**ATT**
			G Llewellyn, Senior Technician		

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31877		CF23 7HA

Site Ref / Hole ID:	TP14	**Depth (m):**	4.00 - 4.20
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	02 March 2023

Test Results

Moisture Content (%)	29.8

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	*A Grogan*	06/03/2023	**MC**
			A Grogan, Laboratory Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS 1377:Part 2:1990. Clause 4.3/5.3/5.4

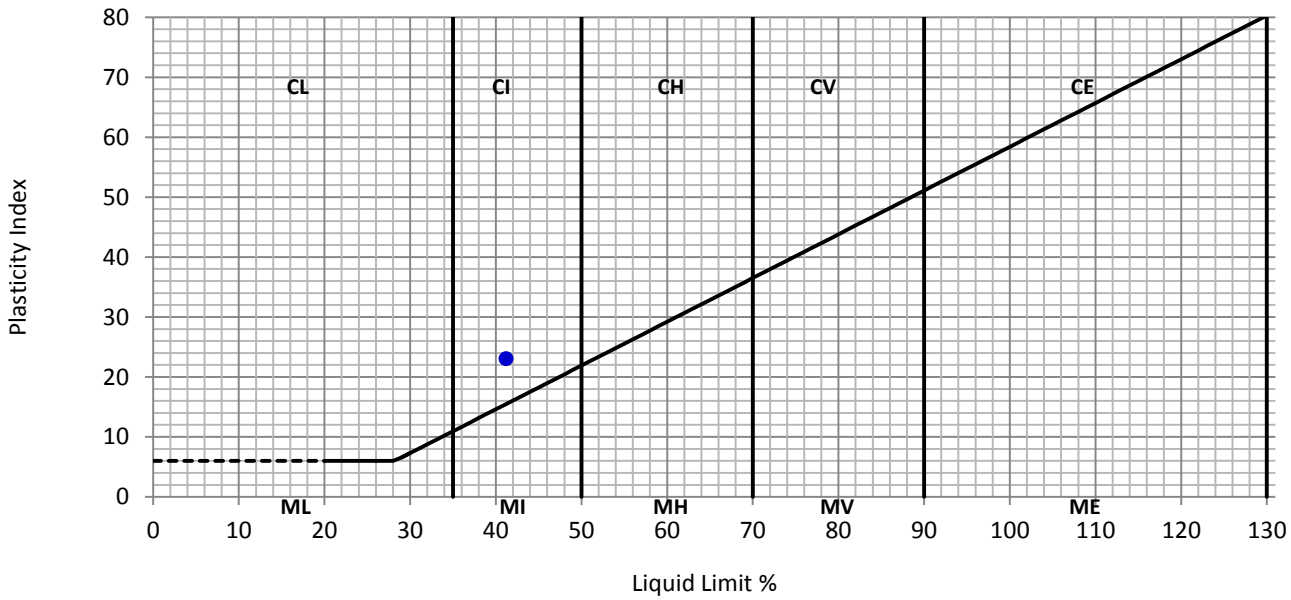
Project No:	D23104	**Client:**	TFW Group Ltd
Project Name:	Dol - Y- dinter Cardigan	**Address:**	5 Deryn Court Wharfdale Road Cardiff
ATS Sample No:	31877		CF23 7HA

Site Ref / Hole ID:	TP14	**Depth (m):**	4.00 - 4.20
Sample No:		**Sample Type:**	Disturbed
Sampling Certificate Received:	No	**Material Description:**	Light brown CLAY
Location in Works:	Ex Site	**Material Source:**	Site Generated
Date Sampled:	Unknown	**Material Supplier:**	Site Generated
Sampled By:	Client	**Specification:**	BS1377
Date Received:	27 February 2023	**Date Tested:**	03 March 2023

Test Results

Liquid Limit	41	%
Plastic Limit	18	%
Plasticity Index	23	%

Preparation:	4.2.3 Natural Specimen	
Proportion retained on 425µm sieve:	0	%



Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig.
BS1377 - 2 Rev. 3.0	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	G Llewellyn	06/03/2023	**ATT**
			G Llewellyn, Senior Technician		

ANNEX I
Dynamic Cone Penetrometer Test Results

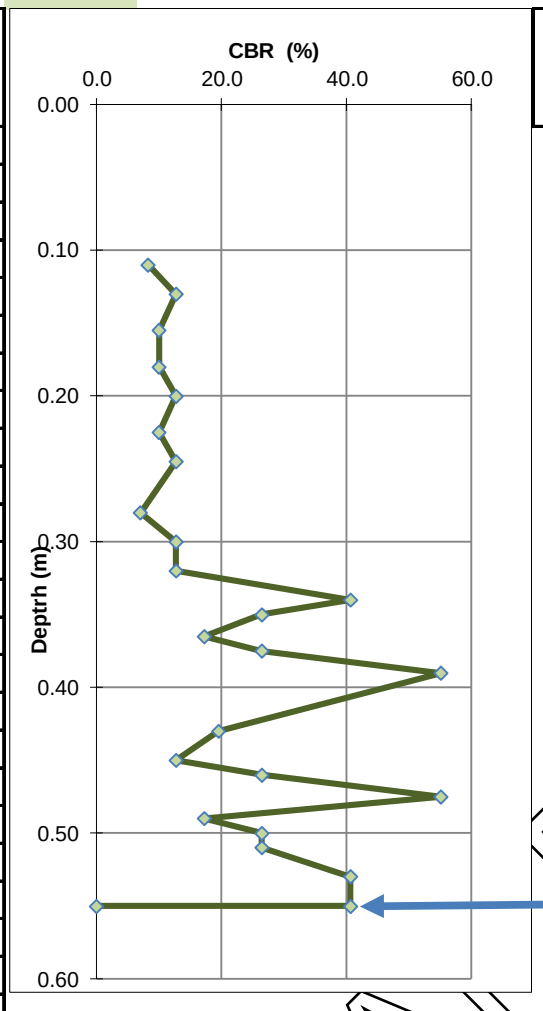
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 80 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	110	30	0.11	30	8.3
1	130	20	0.13	20	12.7
1	155	25	0.16	25	10.1
1	180	25	0.18	25	10.1
1	200	20	0.20	20	12.7
1	225	25	0.23	25	10.1
1	245	20	0.25	20	12.7
1	280	35	0.28	35	7.0
1	300	20	0.30	20	12.7
1	320	20	0.32	20	12.7
3	340	20	0.34	7	40.7
1	350	10	0.35	10	26.5
1	365	15	0.37	15	17.3
1	375	10	0.38	10	26.5
3	390	15	0.39	5	55.1
3	430	40	0.43	13	19.5
1	450	20	0.45	20	12.7
1	460	10	0.46	10	26.5
3	475	15	0.48	5	55.1
1	490	15	0.49	15	17.3
1	500	10	0.50	10	26.5
1	510	10	0.51	10	26.5
3	530	20	0.53	7	40.7
3	550	20	0.55	7	40.7
5	550	0	0.55	0	#NUM!



DCP01

Bouncing at 0.55m depth.

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

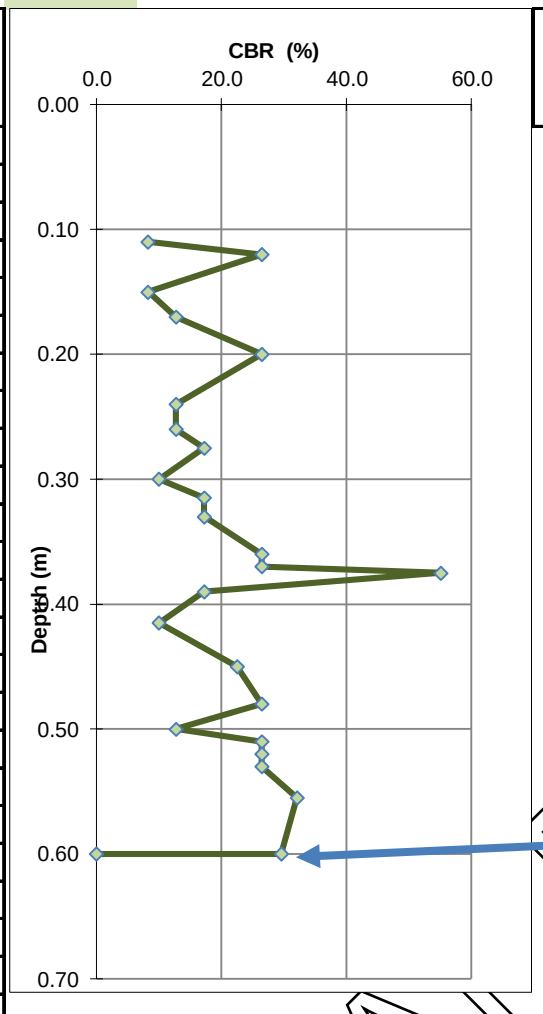
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 80 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	110	30	0.11	30	8.3
1	120	10	0.12	10	26.5
1	150	30	0.15	30	8.3
1	170	20	0.17	20	12.7
3	200	30	0.20	10	26.5
2	240	40	0.24	20	12.7
1	260	20	0.26	20	12.7
1	275	15	0.28	15	17.3
1	300	25	0.30	25	10.1
1	315	15	0.32	15	17.3
1	330	15	0.33	15	17.3
3	360	30	0.36	10	26.5
1	370	10	0.37	10	26.5
1	375	5	0.38	5	55.1
1	390	15	0.39	15	17.3
1	415	25	0.42	25	10.1
3	450	35	0.45	12	22.5
3	480	30	0.48	10	26.5
1	500	20	0.50	20	12.7
1	510	10	0.51	10	26.5
1	520	10	0.52	10	26.5
1	530	10	0.53	10	26.5
3	555	25	0.56	8	32.1
5	600	45	0.60	9	29.6
5	600	0	0.60	0	#NUM!



DCP02

Bouncing at 0.60m depth.

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

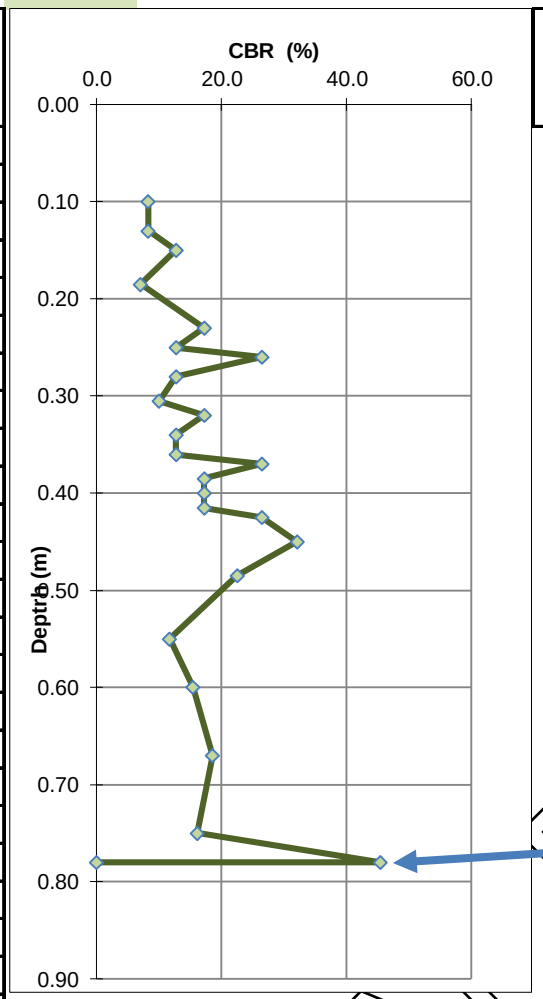
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 70 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	100	30	0.10	30	8.3
1	130	30	0.13	30	8.3
1	150	20	0.15	20	12.7
1	185	35	0.19	35	7.0
3	230	45	0.23	15	17.3
1	250	20	0.25	20	12.7
1	260	10	0.26	10	26.5
1	280	20	0.28	20	12.7
1	305	25	0.31	25	10.1
1	320	15	0.32	15	17.3
1	340	20	0.34	20	12.7
1	360	20	0.36	20	12.7
1	370	10	0.37	10	26.5
1	385	15	0.39	15	17.3
1	400	15	0.40	15	17.3
1	415	15	0.42	15	17.3
1	425	10	0.43	10	26.5
3	450	25	0.45	8	32.1
3	485	35	0.49	12	22.5
3	550	65	0.55	22	11.7
3	600	50	0.60	17	15.4
5	670	70	0.67	14	18.6
5	750	80	0.75	16	16.1
5	780	30	0.78	6	45.4
5	780	0	0.78	0	#NUM!



DCP03

Bouncing at 0.78m depth.

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

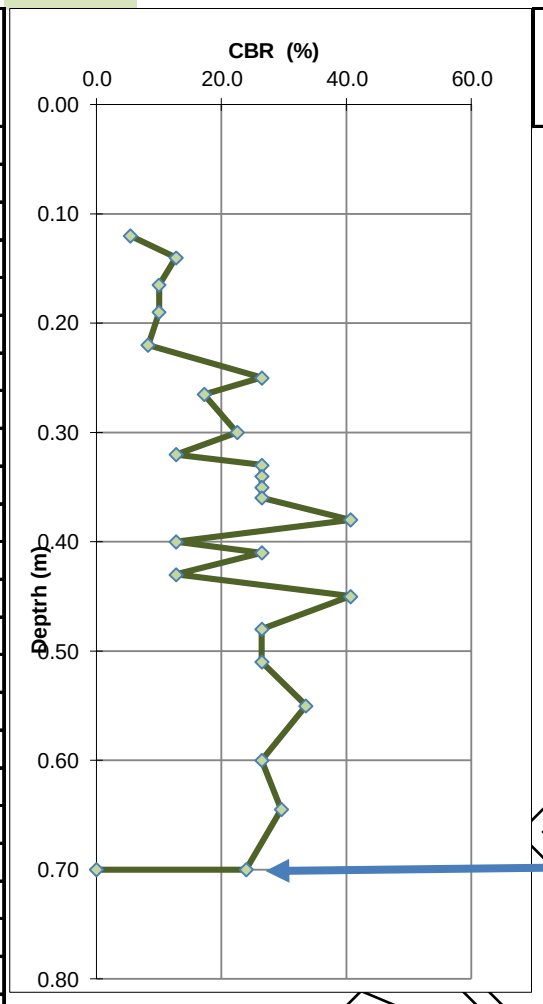
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 75 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	120	45	0.12	45	5.4
1	140	20	0.14	20	12.7
1	165	25	0.17	25	10.1
1	190	25	0.19	25	10.1
1	220	30	0.22	30	8.3
3	250	30	0.25	10	26.5
1	265	15	0.27	15	17.3
3	300	35	0.30	12	22.5
1	320	20	0.32	20	12.7
1	330	10	0.33	10	26.5
1	340	10	0.34	10	26.5
1	350	10	0.35	10	26.5
1	360	10	0.36	10	26.5
3	380	20	0.38	7	40.7
1	400	20	0.40	20	12.7
1	410	10	0.41	10	26.5
1	430	20	0.43	20	12.7
3	450	20	0.45	7	40.7
3	480	30	0.48	10	26.5
3	510	30	0.51	10	26.5
5	550	40	0.55	8	33.5
5	600	50	0.60	10	26.5
5	645	45	0.65	9	29.6
5	700	55	0.70	11	23.9
5	700	0	0.70	0	#NUM!



DCP04

Bouncing at 0.70m depth.

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

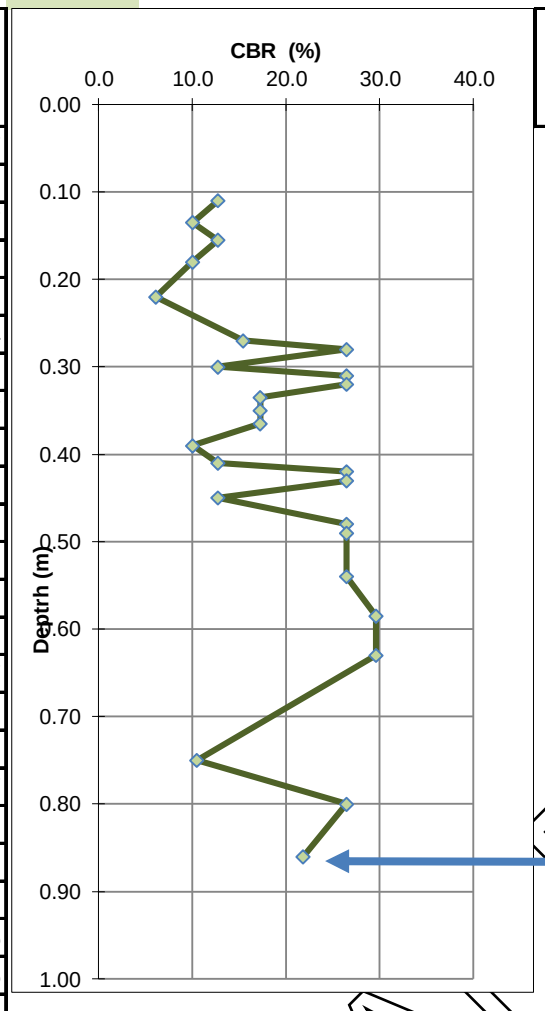
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 90 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	110	20	0.11	20	12.7
1	135	25	0.14	25	10.1
1	155	20	0.16	20	12.7
1	180	25	0.18	25	10.1
1	220	40	0.22	40	6.1
3	270	50	0.27	17	15.4
1	280	10	0.28	10	26.5
1	300	20	0.30	20	12.7
1	310	10	0.31	10	26.5
1	320	10	0.32	10	26.5
1	335	15	0.34	15	17.3
1	350	15	0.35	15	17.3
1	365	15	0.37	15	17.3
1	390	25	0.39	25	10.1
1	410	20	0.41	20	12.7
1	420	10	0.42	10	26.5
1	430	10	0.43	10	26.5
1	450	20	0.45	20	12.7
3	480	30	0.48	10	26.5
1	490	10	0.49	10	26.5
5	540	50	0.54	10	26.5
5	585	45	0.59	9	29.6
5	630	45	0.63	9	29.6
5	750	120	0.75	24	10.5
5	800	50	0.80	10	26.5
5	860	60	0.86	12	21.8
5	910	50	0.91	10	26.5
5	910	0	0.91	0	#NUM!



DCP05

Bouncing at 0.91m depth.

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

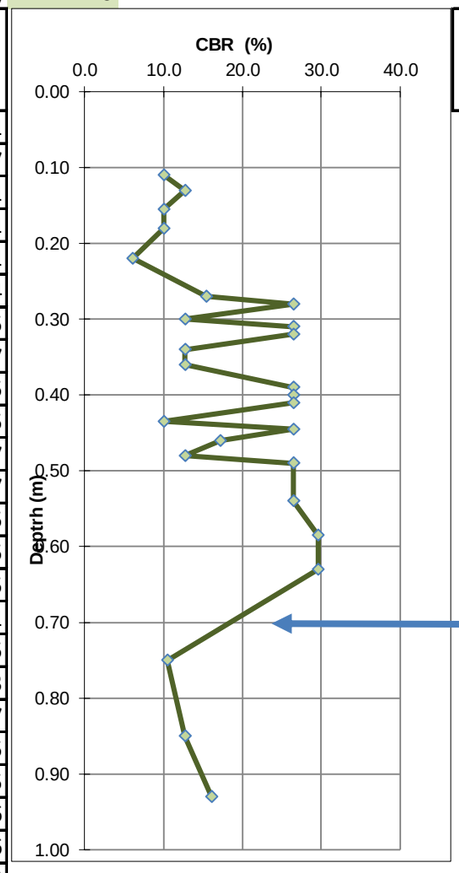
Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

terrafirma

Initial Scale Reading (mm) 85 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	110	25	0.11	25	10.1
1	130	20	0.13	20	12.7
1	155	25	0.16	25	10.1
1	180	25	0.18	25	10.1
1	220	40	0.22	40	6.1
3	270	50	0.27	17	15.4
1	280	10	0.28	10	26.5
1	300	20	0.30	20	12.7
1	310	10	0.31	10	26.5
1	320	10	0.32	10	26.5
1	340	20	0.34	20	12.7
1	360	20	0.36	20	12.7
3	390	30	0.39	10	26.5
1	400	10	0.40	10	26.5
1	410	10	0.41	10	26.5
1	435	25	0.44	25	10.1
1	445	10	0.45	10	26.5
1	460	15	0.46	15	17.3
1	480	20	0.48	20	12.7
1	490	10	0.49	10	26.5
5	540	50	0.54	10	26.5
5	585	45	0.59	9	29.6
5	630	45	0.63	9	29.6
5	750	120	0.75	24	10.5
5	850	100	0.85	20	12.7
5	930	80	0.93	16	16.1



DCP06

Probable soft spot

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)

Dynamic Cone Penetrometer Testing

Client: CB3 Consult Ltd
Site Name: Cardigan
Project Number: 17706
Date: 23/02/2023

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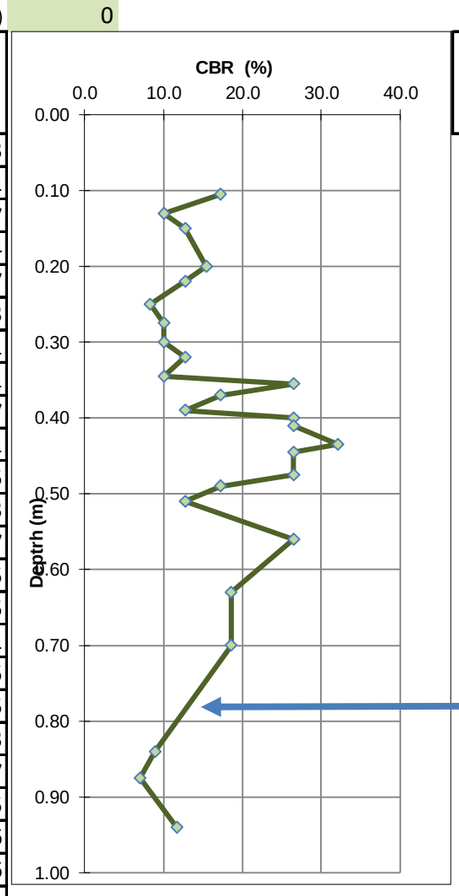
Initial Scale Reading (mm) 90 Datum bgl (mm) 0

no. of blows	scale reading (mm)	penetration increment (mm)	depth bgl (m)	DCP (mm/blow)	CBR (%)
1	105	15	0.11	15	17.3
1	130	25	0.13	25	10.1
1	150	20	0.15	20	12.7
3	200	50	0.20	17	15.4
1	220	20	0.22	20	12.7
1	250	30	0.25	30	8.3
1	275	25	0.28	25	10.1
1	300	25	0.30	25	10.1
1	320	20	0.32	20	12.7
1	345	25	0.35	25	10.1
1	355	10	0.36	10	26.5
1	370	15	0.37	15	17.3
1	390	20	0.39	20	12.7
1	400	10	0.40	10	26.5
1	410	10	0.41	10	26.5
3	435	25	0.44	8	32.1
1	445	10	0.45	10	26.5
3	475	30	0.48	10	26.5
1	490	15	0.49	15	17.3
1	510	20	0.51	20	12.7
5	560	50	0.56	10	26.5
5	630	70	0.63	14	18.6
5	700	70	0.70	14	18.6
5	840	140	0.84	28	8.9
1	875	35	0.88	35	7.0
3	940	65	0.94	22	11.7



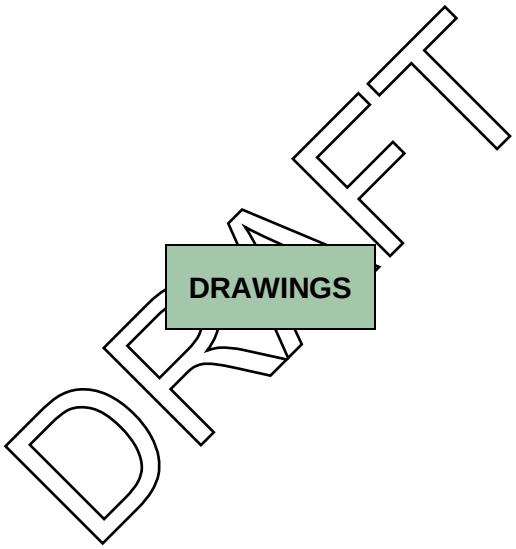
DCP07

Probable soft spot

REMARKS:

Test carried out in accordance with operating instructions for the dynamic cone penetrometer Model A2465 by CNS Farnell Ltd.

CBR correlation based on the relationship Log10 (CBR) = 2.48 - 1.057 * Log10 (mm/blow) developed by TRL taken from The Highways Agency Interim Advice Note 73/06 - Design Guidance for Road Pavement Foundations (2009)



DRAWINGS

Site Name: Cardigan
Project Number: 17706
Drawing Title: Proposed Exploratory Locations
Drawing Number: 01
Scale: Not to scale

KEY
Trial Pit Locations
Borehole Locations

terra firma

Geotechnical & Geoenvironmental Specialists

Terra Firma (Wales) Ltd. 5 Deryn Court, Wharfedale Road, Pentwyn, Cardiff CF23 7HA
Tel: 029 2073 5354 **Fax:** 029 2073 5433 **Email:** info@terrafirmawales.co.uk **www.terrafirmawales.co.uk**