Monmouthshire County Council

ROCKFIELD FARM, UNDY

Site Investigation Report

11631/SI/15/SI

Intégral
Géotechnique

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1.0 INTRODUCTION

1.1 GENERAL

Monmouthshire County Council are proposing the sale of a site at Rockfield Farm, Undy.

Intégral Géotechnique (Wales) Limited have been appointed as the Geotechnical Engineers to undertake a site investigation to enable a geotechnical and geoenvironmental appraisal of the site and provide a basis for design.

This report presents the findings of the site investigation and gives recommendations for the design of foundations, floor slabs and other geotechnical and geoenvironmental aspects of the project.

1.2 PROPOSED DEVELOPMENT

At this stage, the site is to be marketed for sale. The site is located within the defined settlement boundary of the Monmouthshire County Council Local Development Plan. In principal, the site is allocated for mixed use, mostly residential with some employment.

To the north of the land, a corridor is to be retained for possible M4 motorway relief road works.

For the purpose of our conceptual site model, a residential end use has been considered as the most conservative.

1.3 SCOPE OF WORKS

The work instructed included a desk study of available information, site reconnaissance and intrusive investigation. This was followed by laboratory testing and geotechnical and geoenvironmental reporting.

The desk study comprised a review of:

- An Envirocheck Report obtained for the site;
- Old Ordnance Survey maps covering the site, included within the Envirocheck Report;
- Geological maps of the area provided by the British Geological Survey; and
- The Environment Agency groundwater vulnerability map and aquifer database for the area.

1.3 SCOPE OF WORKS (CONTINUED)

The desk study information was used to make an initial assessment of the site and to design an investigation to be carried out by Intégral Géotechnique. The site investigation was designed in accordance with BS5930+A2:2010, the Code of Practice for Site Investigations, BS10175:2011, the code of practice for investigation of potentially contaminated sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, 2012.

The site investigation included:

- An intrusive investigation carried out during August 2015 comprising thirteen windowless sample boreholes;
- Sampling of soil for laboratory chemical testing.

1.4 LIMITATIONS

This document is intended to be a working document for further development in discussion with all concerned including the Local Planning Authority, Natural Resources Wales (NRW) and the NHBC, as appropriate.

"Contamination" is taken throughout the report to mean the "presence of one or more potentially harmful substances as a result of human activity". The use of the term in this way does not imply that harm is being or might be caused by the contamination. It should be noted that "contamination" can have different meanings under different regulatory regimes, for example, planning, building control and Part IIA of the Environmental Protection Act 1990. Naturally elevated concentrations of potentially harmful substances may also be of concern and the significance of any that have been found is also evaluated in this report.

It is important to recognise that there may be areas of contamination that have not been found, or that contaminants are present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences other than by chance.

It should also be noted that vertical and lateral changes in ground conditions may be present between exploratory hole locations.

1.4 LIMITATIONS (CONTINUED)

This report has been prepared for the use of Monmouthshire County Council and their advisors and should not be passed to others without the express consent of Intégral Géotechnique (Wales) Limited.

This report is not intended for use for the development of the possible M4 relief road and limits comments to the proposed commercial and residential development.

The area of site around the existing farm buildings in the central part of the site was not investigated as part of these site investigation works, as access was limited to this area.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located to the northeast of Undy, to the south of the M4 motorway, at a National Grid Reference of 343720, 187710, see Figure 1.

The site is irregular in shape and occupies an area of approximately 11 hectares. The boundaries of the site are defined by the M4 motorway to the north, residential housing to the south, and field boundaries to the west and east. A road, The Elms, runs from north to south through the centre of the site area. A site plan is presented in Figure 2.

The site is situated on gently sloping ground, which falls from an approximate elevation of 30m AOD in the northwestern corner, dropping some 15m in elevation to 10m AOD to the southeast.

The site is currently a collection of undeveloped agricultural fields, boundaries of which are defined by hedgerows. A collection of farm buildings are located near the centre of the site area, off The Elms.

2.2 SITE OPERATIONS

The site is currently a collection of undeveloped agricultural fields.

2.3 SURROUNDING LAND USE

The land surrounding the site is predominantly residential to the south and agricultural to the north, west, and east, with the M4 motorway passing immediately north of the site area.

2.4 AVAILABLE SITE INVESTIGATION DATA

No site investigation data has been made available to Intégral Géotechnique (Wales) Limited.

3.0 SITE HISTORY

The recent history of the site has been traced with the aid of an Envirocheck Report, a copy of which is included in Appendix A. The Envirocheck Report includes the following scaled historical maps:

Map Scale	Dates
1:2,500	1882, 1901, 1921, 1968, 1981, 1983, 1988, 1990, 1992, 1994, 1995, 1996
1:10,560	1887, 1902, 1922, 1954
1:10,000	1964,1970-71, 1983, 1985-89, 2006, 2015

The earliest map in our possession dated 1882 shows the site to be a collection of undeveloped fields with an old quarry and old limekiln located near the centre of the site area. A road runs from north to south through the central area of the site. A number of trees are indicated within the southwestern quadrant of the site. Several paths are also shown to cross the site area. An old quarry is also present some 100m to the north of the site area.

By 1921 and 1922, three buildings are indicated around and within the area of the old quarry near the centre of the site. Allotment gardens are shown immediately beyond the southeastern site boundary.

The 1970-71 map no longer shows the old quarry or limekiln, with a collection of buildings labelled “Rockfield Farm” now occupying this area. The M4 motorway has been constructed immediately north of the site area, with some residential development also shown to the south and southeast of the site area around the village of Undy.

Few significant changes to the site or the immediate surrounding area are shown on the maps dated 1985 to 2015, other than a rise in residential development immediately to the southwest of the site. The site remains as undeveloped fields with the exception of the farm buildings at Rockfield Farm.

4.0 SITE ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

The site is situated within an area gently sloping towards the Severn Estuary, some 3km to the south east of the site.

The site is situated on gently sloping ground, which falls from an approximate elevation of 30m AOD in the northwestern corner, dropping some 15m in elevation to 10m AOD to the southeast.

4.2 GEOLOGY

The 1:50,000 scale geological map of the area indicates that the bedrock underlying the central and southwestern areas of the site comprises the Black Rock Limestone Subgroup – Dolostone, of Carboniferous age. These rocks comprise dark grey to black limestones, with subordinate mudstones.

The bedrock underlying the north eastern strip of the site is indicated to be the Mercia Mudstone Group (marginal Facies) – Conglomerate, of Triassic age. These rocks typically comprise conglomerates and breccias, rarely with a siltstone, sandstone and limestone matrix.

No superficial deposits are indicated to underlie the site area.

A thin layer of made ground is anticipated above the bedrock within the immediate surrounding area of the farm buildings and former quarry area, in the centre of the site.

A summary of the anticipated geological succession is given below in Table 1.

4.2 GEOLOGY (CONTINUED)

Table 1 : Summary of Anticipated Site Geology		
Geological unit	**Horizon**	**Description**
Recent	Topsoil & Made ground	Various materials
Triassic	Mercia Mudstone Group (marginal Facies) – Conglomerate	Conglomerates and breccias, rarely with a siltstone, sandstone and limestone matrix.
Carboniferous	Black Rock Limestone Subgroup – Dolostone	Dark grey to black limestones, with subordinate mudstones.

4.3 RADON

A BGS radon report was obtained for the site area, and is presented in Appendix B. The report indicates that the site lies in an intermediate probability radon area, and that basic radon-protective measures are required for the site.

4.4 MINING

The site lies outside the South Wales Coalfield, and therefore is not in an area affected by coal mining activities.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK

The nearest water feature to the site is a drain, recorded 3m to the north of the site boundary. Several other drains, reens, and ditches are located to some 200m to the south of the site.

The Environment Agency groundwater vulnerability map and aquifer database classifies the bedrock beneath the site as a Principal Aquifer.

Principal Aquifers are layers that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

There is a single discharge consent recorded within 500m of the site boundary. This is located 219m to the southeast of the site area at a tributary of the Prat Reen, for water company sewage discharges from a pumping station.

The Envirocheck Report states that here are no groundwater abstractions within 900m of the site.

Tables 2 and 3 present a summary of the hydrological features and key hydrogeological nature of the site.

Table 2: Summary of Site Hydrology

Feature	Distance from site	Flow	Classification	Abstraction	Discharge
Surface run-off	On site	Not known	N/A	No	Not known
Site Drainage	On site	Not known	N/A	No	Not known

Table 3: Summary of Site Hydrogeology

Geological Unit	Aquifer Classification	Aquifer Characteristics	Source Protection Zone	Groundwater Abstractions
Topsoil & Made ground	Not classified	Highly variable permeability and porosity. Perched water may be present with variable flow directions.	No	None
Blackrock Limestone Subgroup	Principal Aquifer	High intergranular and/or fracture permeability within the limestone bedrock.	No	None
Mercia Mudstone Group	Principal Aquifer	High intergranular and/or fracture permeability within the conglomerate bedrock.	No	None

The soils have been classified as having an high leaching potential. Soils of high leaching potential can potentially transmit a wide range of pollutants.

The Environment Agency Flood Risk Map as presented within the Envirocheck Report in Appendix A indicates that the site lies above areas considered by the Environment Agency to be at risk of extreme flooding.

4.5 HYDROLOGY, HYDROGEOLOGY AND FLOOD RISK (CONTINUED)

However, a narrow strip of land running from the centre of the northern site boundary to the centre of the western site boundary is indicated to be at low risk of flooding from surface water.

The southeasternmost corner of the site area is indicated to be at high risk of flooding from surface water.

It is recommended that further advice on flooding is sought to assess the flooding risk within the identified areas.

4.6 LANDFILL SITES

There are no local authority recorded landfill sites or historical landfill sites recorded within 500m of the site boundary.

4.7 POTENTIAL CONTAMINATION

Previous & Existing Uses

The various activities in the vicinity of the site which may have resulted in ground or water resource contamination on this site are listed below in Tables 4 and 5. Reference to Department of the Environment Industry Profiles has been made and a summary of the potential contaminants can be found in the tables.

Table 4: Potential Contaminants		
Land Use: Majority of the site - Green Field until present		
Material/Process	**Contamination/Hazard**	**Evidence**
Agricultural land	No potential contaminants	Historical Maps/Current site use.
Land Use: Centre of site – infill of old quarry, limekiln, construction of farm buildings 1880s to present		
Material/Process	**Contamination/Hazard**	**Evidence**
Imported made ground/earthworks	Metals, semi metals, non-metals, PAH, asbestos	Historical Maps
Demolition of buildings	Metals, semi metals, non-metals, PAH, asbestos	Historical maps

4.7 POTENTIAL CONTAMINATION (CONTINUED)

Adjacent Site Uses

Table 5 : Potential Contaminants : Adjacent Site Uses		
Potential Contamination Source	**Boundary**	**Associated Contaminants and Hazards**
Agricultural	West, East, North (beyond motorway)	No Potential Contaminants
Residential	South east	No Potential Contaminants
Motorway	North	Possible fuel spills

4.8 OTHER ENVIRONMENTAL ISSUES

The Envirocheck Report indicates that there have been no pollution incidents to controlled waters and there have been no enforcement or prohibition notices within 700m of the site boundary.

The Envirocheck Report indicates that the site lies within a nitrate-vulnerable zone. A Site of Special Scientific Interest (SSSI), the Gwent Levels – Magor and Undy, is located 458m to the southeast of the site area.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

5.1 RISK ASSESSMENT FRAMEWORK

In order to be consistent with current UK government policies and legislation, it is necessary to identify, make decisions on, and take appropriate action to deal with land contamination, in accordance with the procedures specified in the Environment Agency document 'Model Procedures for the Management of Land Contamination CLR-11' (Environment Agency 2004).

The risk assessment process is designed to provide a reasoned, structured and pragmatic mechanism for the identification of any potential human health and controlled waters risks associated with land contamination and where necessary to develop a robust remediation strategy to ensure protection of the sensitive receptors (human health of future residents, controlled waters, etc).

In accordance with the CLR-11 framework, risk is defined as:

'a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequence of the occurrence'.

The three essential elements to any risk are defined by CLR-11 as follows:

- A contaminant, or hazard, which is in, on, or under the land and has the potential to cause harm (Source)
- A means by which a receptor can be exposed to, or affected by a contaminant or hazard (Pathway)
- A receptor, i.e. something which could be adversely affected by a contaminant or hazard, such as human health or groundwater (Receptor).

In order for there to be a potential risk, all three of the above elements must be present. If there is a source of contamination and a receptor (for example a resident or site user), then there is only a potential risk if there is a pathway linking the two. Such an active pathway is known as a relevant pollutant linkage. It is possible for the same contaminant to be linked to a receptor via a number of pathways, and hence it is important that all relevant pollutant linkages, to both human health and controlled waters, are separately identified on a site in order that a comprehensive conceptual model can be formed and ultimately a robust remediation strategy designed.

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

Current practice during Generic Quantitative Risk Assessment of land affected by contamination is to use generic soil screening values based on the appropriate proposed end use. These usually comprise risk based Soil Guideline values (SGVs) or Generic Assessment Criteria (GACs) derived by the Environment Agency's Contaminated Land Exposure Assessment Model (CLEA). The SGVs and the supporting technical guidance were developed to in order to assist in the assessment of long term risk to human health from the exposure to contaminated soils.

Revised Statutory Guidance, published in 2012, to support Part 2A of the Environmental Protection Act 1990, introduced a new four category system for classifying land under Part 2A. Category 1 includes land where the level of risk is clearly unacceptable and Category 4 includes land where the level of risk posed is considered to be acceptably low. Under Part 2A, land would be determined as contaminated if it falls within Categories 1 or 2.

The revised Part 2A Statutory Guidance was accompanied by an Impact Assessment that identified a role for new 'Category 4 Screening Levels' (C4SLs) that would provide a simple test for determining when land is suitable for use and definitely not contaminated land. A Policy Companion Document including the C4SLs was published in March 2014 (England) and May 2014 (Wales).

The C4SLs have been based on the CLEA methodology and derived using the CLEA model, with modified toxicological and exposure parameters. To date, C4SLs have been released for six substances (arsenic, cadmium, chromium (VI), lead, benzo(a)pyrene and benzene).

The C4SLs have been derived on the assumption that where they exist, they will be used as generic screening criteria within generic quantitative risk assessment.

Following publication of the C4SLs, Land Quality Management (LQM), in conjunction with the Chartered Institute for Environmental Health (CIEH) released Suitable 4 Use Levels (S4ULs) in January 2015.

The S4ULs have been derived in accordance with UK legislation, and using a modified version of the Environment Agency's CLEA software. As such, the S4ULs are based on the concept of minimal or tolerable risk as described in Human Health Toxicological Assessment of Contaminants in Soil (Science Report SR2, Environment Agency 2009a).

S4ULs have been derived for a wider number of substances.

5.1 RISK ASSESSMENT FRAMEWORK (CONTINUED)

In addition to the existing SGVs, C4SLs and S4ULs, Atkins ATRISK^{soil} also provide a set of Soil screening Values. These are currently intended to be used in conjunction with SGVs, although they intend to update these values in line with the C4SLs in due course.

We have reviewed all sets of values and intend to use the most appropriate assessment criteria as Tier 1 screening values in the first instance. Where a published C4SL is available, and considered appropriate, this will be used in the first instance.

5.2 CONCEPTUAL MODEL FRAMEWORK

The preliminary stage of the risk assessment process is to develop and define a conceptual site model, based on the desk study and any existing site investigation data. This is used to establish any potential contaminant sources, identify existing and future receptors and assess if there are any potentially active pathways by which a potential risk may be present.

The preliminary conceptual site model will be developed and refined as site specific data is gathered, such as actual ground conditions and chemical data, resulting in a more robust conceptual understanding of the site.

5.3 CRITICAL SENSITIVE RECEPTOR – HUMAN HEALTH

The proposed redevelopment of the site is for a residential end use. Therefore, the critical sensitive receptor from a human health perspective is an on-site residential receptor.

In accordance with C4SL and CLEA guidance for a standard residential scenario, the critical sensitive receptor for a residential end use risk assessment is a female child, with exposure from 0 to 6 years.

The standard residential end use conceptual model defined by C4SL and CLEA is assumed to be suitable for the purposes of this assessment.

5.4 CRITICAL SENSITIVE RECEPTOR – CONTROLLED WATERS

Based on the proposed redevelopment of the site for a residential end use, and the findings of the desk study, the critical sensitive receptor from a controlled water perspective is groundwater within the Principal Aquifer of the underlying bedrock.

5.5 POTENTIAL CONTAMINANT SOURCES

The majority of the site has remained undeveloped and in agricultural use since the 1880s. However an old quarry and limekiln were located near the centre of the site, with the quarry likely to have been infilled. Farm buildings have since been constructed around the area of the former quarry and limekiln, with further potential for localised made ground beneath these areas. Some of the buildings constructed in the area of the former quarry were subsequently demolished.

The potential types of contaminants of concern are listed below:

- Metals, semi-metals, and inorganics within any shallow made ground, or infill materials in the old quarry;
- Polyaromatic Hydrocarbons (PAH) within any shallow made ground, or infill materials in the old quarry;
- Asbestos within the within any shallow made ground, or infill materials in and around the old quarry.

5.6 POTENTIAL EXPOSURE PATHWAYS

Potential exposure pathways for the critical receptors (both human health and controlled waters) are listed below:

- Dermal contact with soil and/or soil derived dust
- Ingestion of soil and/or soil attached to home-grown produce
- Ingestion of home-grown produce
- Inhalation of soil derived dust
- Inhalation of vapours – indoor and outdoor air
- Leaching of contaminants from made ground to groundwater
- Transportation of contaminants within groundwater.

In addition, the following exposure pathways have also been considered:

- Ground gas generation and migration
- Building materials durability.

5.7 SUMMARY OF CONCEPTUAL EXPOSURE MODEL

A preliminary conceptual exposure model has been developed for the site. This is based on the findings of the desk study and historical review and includes all potential sources, pathways and receptors that may be present on site. Those that have been identified as being potentially active require further investigation in the form of sampling and testing of soils and groundwater, followed by appropriate risk assessment.

The preliminary conceptual exposure model will be reviewed and refined following the completion of the site works and laboratory testing.

The preliminary conceptual exposure model is presented below in Table 6.

Table 6: Preliminary Conceptual Exposure Model

Source		Receptor	Pathway	Potentially Active Pathway?
Origin	Contaminant			
Made/Reworked Ground of unknown origin and old quarry infill materials, and made ground around farm buildings	Metals, semi-metals, non-metals, PAH. Asbestos in quarry infill materials or surrounding made ground.	Resident – human health	Dermal Contact with made ground/dust	✓
			Ingestion of soil and/or soil attached to home-grown produce	✓
			Ingestion of home-grown produce	✓
			Inhalation of dust	✓
			Inhalation of vapours – indoor/outdoor	✓
		Groundwater quality	Leaching from made ground	✓
		Surface water quality	Transportation within groundwater	✓
Made Ground of unknown origin and natural ground	pH and Sulphates	Building Materials Durability	Direct contact	✓
Ground Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	✓

6.0 THE SITE INVESTIGATION

6.1 FIELDWORKS

A site investigation was designed in accordance with BS5930+A2:2010, the Code of Practice for Site Investigations, BS10175:2011, the Code of Practice for Investigation of Potentially Contaminated Sites, and 'Development of Land Affected by Contamination: A Guide for Developers' prepared by Welsh Local Government Association (WLGA)/Environment Agency Wales (EAW) Land Contamination Working Group, 2012.

The site investigation was also designed to provide information to support and refine the preliminary conceptual site model/conceptual exposure model.

An investigation comprising thirteen windowless sample boreholes was carried out during August 2015. The boreholes were located across the site and drilled to a maximum depth of 3.4m below existing ground level. The purpose of the boreholes was to investigate the shallow ground conditions and allow an assessment of the most appropriate foundation type for the proposed development. Continuous CPT in-situ testing was carried out in conjunction with the windowless sample boreholes, and at an additional three locations.

Falling head soakaway tests were carried out in four of the windowless sample boreholes in order to assess/monitor the likely permeability of the natural ground.

Representative soil samples were taken from the windowless sample boreholes for laboratory chemical testing and placed in the appropriate sample containers deemed suitable for the analysis required. Strict protocols were adopted during this process to limit the cross contamination of samples.

In-situ California Bearing Ratio (CBR) testing was also carried out adjacent to the windowless sample borehole positions, using a hand-held MEXE cone tool.

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also logged the windowless sample boreholes and soakaway tests, and prepared their detailed engineering logs in accordance with the requirements of BS5930+A2: 2010. The engineering logs provide descriptions of the materials encountered in accordance with BSEN ISO 14688-1 (2002) and 14689-1 (2003) for soils and rocks respectively.

6.1 FIELDWORKS (CONTINUED)

The approximate locations of the windowless sample boreholes are shown on Figure 2, while their logs and the CPT test results are presented in Appendix C. Note that location CPT16 was omitted during the fieldworks. The results of the falling head tests are presented in Appendix D.

6.2 FIELD OBSERVATIONS

No visual or olfactory evidence of any contamination was observed during the drilling of the windowless sample boreholes.

The area around the existing farm buildings and former quarry area was not investigated as the area remained in use at the time of the fieldworks.

6.3 LABORATORY CHEMICAL TESTING

Representative soil samples of the topsoil and subsoil were taken from the windowless sample boreholes across the site, stored at the appropriate temperature and dispatched to the UKAS-accredited laboratories of i2 Analytical for laboratory chemical testing within 24 hours.

The samples were tested for a range of contaminants that reflects the historical use of the site, the findings of the desk study and the preliminary conceptual site model/conceptual exposure model. A list of the soil testing carried out is given below:

Beryllium	Cadmium
Total Chromium	Hexavalent Chromium (VI)
Copper	Lead
Mercury	Nickel
Vanadium	Zinc
Arsenic	Boron
Selenium	Elemental Sulphur
Total Cyanide	Total Sulphate
Sulphide	Water Soluble Sulphate
pH	Monohydric Phenol
Polyaromatic Hydrocarbons (PAH)	

The results of all the soil testing are presented in Appendix E.

6.4 LABORATORY PHYSICAL TESTING

At the time of reporting, laboratory physical testing including Atterberg limits and moisture content results on representative soil samples are pending. These will be advised in later revisions of this report.

7.0 GROUND CONDITIONS

A summary of the ground conditions encountered across the site is presented below in Table 7.

TABLE 7 : SUMMARY OF GROUND CONDITIONS

Depth (m) From	Depth (m) To	Stratum
G.L.	0.1/0.2	TOPSOIL
0.1/0.2	>0.4/>3.4	Firm occasionally soft to firm brown sandy silty variably gravelly CLAY.
0.3/2.7	>0.8/>3.4	Light brown clayey silty gravelly SAND or SAND and GRAVEL, with occasional to frequent cobbles.

7.1 TOPSOIL

A thin veneer of organic-rich topsoil was encountered within all of the exploratory locations, to a maximum depth of 0.2m below existing ground level.

7.2 WEATHERED BEDROCK

Firm and occasionally soft to firm brown sandy gravelly clays were encountered beneath the topsoil in the majority of the windowless sample boreholes, with medium dense or dense sand, or sand and gravel occasionally encountered. These materials are considered to represent in-situ weathered bedrock materials.

All of the windowless sample boreholes terminated within these strata, typically due to refusal of the windowless sampling equipment. Refusal depths ranged from 0.4mbgl to 3.4mbgl.

7.3 GROUNDWATER

No groundwater strikes were recorded within any of the windowless sample boreholes, although some of the sand materials encountered were described as damp or wet.

The groundwater conditions are based on observations made at the time of the fieldwork. It should be noted that groundwater levels may vary due to seasonal and other effects.

7.4 FALLING HEAD TESTS

Falling head infiltration tests were carried out within four of the windowless sample boreholes across the site, in boreholes WS2, WS4, WS5 and WS9.

At each location, the borehole was filled with clean water, and the falling water levels monitored over a period of time. The results and calculations are presented in Appendix D.

Within boreholes WS2 and WS4, infiltration rates of 1.42×10^{-4} m/s and 5.25×10^{-4} m/s were determined respectively. The predominant soil types within these boreholes were silty sandy clays. However, it should be noted that the result for WS4 only applies to the soils between ground level and 0.47m depth, as no further infiltration was recorded beyond this depth after 15 minutes of testing.

No infiltration was observed after 25 minutes of testing within borehole WS5, and therefore no infiltration rate could be calculated at this location. The predominant soil type within this borehole was clay.

Rapid infiltration was observed within borehole WS9, and no measurements could be taken before the water drained away. Therefore, no infiltration rate could be calculated. The predominant soil type within this borehole was sand.

It should be noted that this initial testing should only be regarded as indicative. If it should be proposed to use soakaways for this site, then more extensive soakaway location and depth specific follow-up tests will be required and should fully comply with BRE 365, in order to confirm the suitability of the site and to satisfy the local authority.

8.0 CONTAMINATION

8.1 AVERAGING AREAS

In order to assess the laboratory test results reliably and in context, the data have been grouped into an averaging area. An averaging area (or area of interest) is that area of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions. This may be an area of historical industrial usage, a soil type, or a specific proposed end use.

In the case of this analysis, the averaging area has been determined according to the proposed residential end use.

Note that the area of the former quarry, lime kiln, and current farm buildings is considered a separate averaging area to be investigated once site activities have ceased.

8.2 SOIL CONTAMINATION

The Category 4 Screening Levels (C4SLs) published by DEFRA for arsenic, cadmium, chromium (VI), lead, benzo(a)pyrene and benzene have been adopted as critical concentrations against which soil contaminant concentrations can be compared. In the absence of additional published C4SLs, the Suitable 4 Use Levels (S4ULs) derived by LQM, Soil Guideline Values (SGVs) and Soil Screening Values (SSVs) derived by Atkins ATRISK^{soil} for a residential with the consumption of home grown produce end use have been adopted, where considered appropriate.

The results of the testing indicate total organic carbon content (TOC) in the range of <0.1% to 4.3%, which correspond to equivalent soil organic matter (SOM) contents of <0.1% to 7.4%. The results have therefore been compared to the respective guidelines, where applicable, for 1% soil organic matter content.

The soil test results for topsoil and subsoil have been summarised and are shown in Appendix F.

8.2.1 Topsoil and Subsoil

The results of the laboratory testing undertaken on the greenfield areas of the site indicate that all of the analysed chemical elements or compounds are present at concentrations below the appropriate thresholds. As such, the natural ground is not considered to pose any significant threat to human health or the environment.

8.2 SOIL CONTAMINATION (CONTINUED)

Note that further investigation of the area of the former and current buildings, yard, and former quarry/lime kiln will be required in order to establish the ground contaminative risk in this area.

9.0 REVISED CONCEPTUAL EXPOSURE MODEL

The preliminary conceptual exposure model has been reviewed and revised to reflect the findings of the site investigation and the results of the laboratory testing of soils, soil leachate, groundwater and gas monitoring. Pathways identified as a relevant pollutant linkage require appropriate risk assessment or mitigation measures (see Section 10).

Table 10: Revised Conceptual Exposure Model

Source		Receptor	Pathway	Preliminary Active Pathway? (see Sect. 5.8)	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Made/Reworked Ground of unknown origin and old quarry infill materials or surrounding made ground	Metals, semi-metals, non-metals, PAH, asbestos.	Resident – human health	Dermal Contact with made ground/dust	✓	?	No elevated concentrations identified to date in greenfield areas of site. Further investigation and sampling should be carried out around the existing buildings and area of infilled quarry as a further phase of investigation.
			Ingestion of soil and/or soil attached to home-grown produce	✓	?	
			Ingestion of home-grown produce	✓	?	
			Inhalation of dust	✓	?	
			Inhalation of vapours – indoor/outdoor	✓	?	
	Metals, semi-metals, inorganics, PAH, petroleum hydrocarbons	Groundwater quality	Leaching from made ground	✓	?	
	Metals, semi-metals, inorganics, PAH, petroleum hydrocarbons	Surface water quality	Transportation within groundwater	✓	?	

9.0 REVISED CONCEPTUAL EXPOSURE MODEL (CONTINUED)

Source		Receptor	Pathway	Preliminary Active Pathway?	Relevant Pollutant Linkage	Justification/ Mitigation
Origin	Contaminant					
Made Ground of unknown origin and natural ground	Metals, semi-metals, non-metals, PAH, petroleum hydrocarbons	Building Materials Durability	Direct contact	✓	✓	Building materials will be in contact with ground – risk assess
Ground Gas – organic, gas producing materials	Methane, carbon dioxide	Human health	Accumulation of gases in confined spaces, and/or migration off site, leading to asphyxiation, or risk of explosion	✓	X	No potential gas producing materials identified to date.

10.0 RISK ASSESSMENT

10.1 METHODOLOGY

The risk of pollution, health effects or environmental harm occurring as a result of ground contamination is dependent upon three principal factors:

- The scale of the contamination sources;
- The presence of sensitive "receptors", eg Humans: health of the general public, site occupiers, redevelopment workers. Environment: flora, fauna, etc;
- The existence of migration pathways by which contaminants can reach the sensitive receptors.

This section assesses each of these factors in order to evaluate the overall level of risk and potential harm to receptors. The receptor may be human, a water resource, an eco-system or construction materials. Pathways connecting a perceived hazard to a receptor are referred to as exposure pathways.

The sources of contamination and the links connecting the hazards to the sensitive receptors will represent the basis for the risk assessment.

10.2 SOURCE-PATHWAY-RECEPTOR MODEL

The preliminary conceptual site model was based on the findings of the desk study. This was later reviewed and refined according to the findings of the site investigation, allowing for the ground conditions encountered and the results of laboratory testing of soil and groundwater. Any pathways considered to be inactive were removed from the model and all remaining potentially active pathways require risk assessment.

The pathways shown as potentially active in the Revised Conceptual Site Model in Section 9.0 above have been assessed below.

10.3 HUMAN HEALTH RISK ASSESSMENT

10.3.1 Site in its Present Condition

The site does not pose any risks to casual visitors or trespassers. The site is largely occupied by grassed agricultural fields.

10.3 HUMAN HEALTH RISK ASSESSMENT (CONTINUED)

10.3.2 Future Site Users

The results of the chemical testing to the greenfield areas of the site indicate that the site does not pose any significant risks to the future site users.

Normal good hygiene practices should be adequate to protect the health and safety of redevelopment workers, and should include:

- Minimum handling of materials;
- Washing of hands prior to all meal breaks, which should be taken in a designated clean area;
- The use of standard protective clothing such as boots and overalls and gloves, where considered relevant.

In dry weather, inhalation of dust and gases should be avoided preferably by the use of dust suppression techniques to minimise fugitive emissions and minimisation of exposed materials at any particular time.

All excavations should be regularly checked for safe atmospheres.

Additionally, a system should be established by which any 'unusual' materials that may be encountered are reported rapidly to the site management, so that the appropriate action may be taken, following specialist advice if necessary. An unusual material may be identified on site by colour, odour or physical nature.

The area of the former quarry, limekiln, farm buildings and farm yard will require further investigation in order to establish the contamination risk and any requirements for remediation in these areas.

Reference should be made to the Health and Safety Executive document "Protection of Workers and the General Public during the development of contaminated land" for detailed guidance on these matters.

10.4 RISKS TO VEGETATION

No concentrations of any contaminants known to be harmful to vegetation have been encountered. Given the site's generally greenfield history, no significant risks to vegetation are considered likely.

10.5 GROUNDWATER RISK ASSESSMENT

No concentrations of any contaminants likely to cause adverse effects to groundwater have been encountered. The risks posed to controlled waters by the site are therefore considered to be low.

These conclusions should be reviewed upon completion of the recommended further investigations advised in Section 10.3.

10.6 GROUND GAS RISK ASSESSMENT

No significant quantities of made ground, or other gas-producing materials were identified during the site investigation works.

Therefore, the risks posed to the proposed development from ground gases are considered to be low.

Basic radon protective measures are required for new buildings within the site area.

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY

10.7.1 Concrete Classification

A summary of the laboratory chemical test results for the chemicals total sulphate, water soluble sulphate, and pH, which may adversely affect the durability of building materials is presented in Appendix F.

Evidence to date does not indicate any specifically aggressive conditions, but it would be reasonable to expect a degree of sulphate and acidic aggressiveness from the ground.

In accordance with BRE Digest SD1:2005 and adopting the assessment procedure specified therein for greenfield sites, the laboratory chemical test results indicate a characteristic value (taking the highest of the test results) for water soluble sulphate within the natural ground of 27mg/l.

Using Table C2 of BRE Digest SD1:2005, this characteristic value corresponds to Design Sulphate Class DS-1.

The groundwater regime of the site has been assessed as ‘mobile’ and a characteristic pH value within the natural ground of 6.5 has been determined (adopting the lowest of the test results).

10.7 RISKS TO BUILDINGS AND MATERIALS DURABILITY (CONTINUED)

The Design Sulphate Class has been modified to give a site ACEC class of AC-1 for concrete structures constructed within the natural ground.

10.8 SPOIL DISPOSAL

Under the Landfill Regulations (2002) all spoil materials should be classified if they require disposal to a landfill facility. To determine the appropriate type of landfill site, there will need to be a characterisation of the materials in relation to the Waste Regulations.

The made ground materials are tentatively classified as hazardous non-reactive waste but specialised testing will be required once earthworks design and volumes are known.

It is recommended that a sustainable development strategy is adopted which reduces to a practicable minimum the need for export of waste to a licensed tip.

In order to minimise disposal, the materials generated should be segregated and examined, with appropriate testing as necessary, to enable the materials to be sorted or treated into lower classifications, with the resultant benefit of potentially generating re-use rather than disposal.

Any asbestos containing materials are likely to be classified as hazardous waste.

10.9 UNCERTAINTIES

It is important to recognise that there may be areas of contamination within the site that have not been found or that contaminants may be present at concentrations above those that have been found. It is also important to recognise that contamination may be localised and that no investigation, however comprehensive, is capable of finding such occurrences, other than by chance.

The area around the existing farm buildings and former quarry area was not investigated as the area remained in use at the time of the fieldworks. Further investigation within these areas is recommended.

11.0 ENGINEERING CONSIDERATIONS AND RECOMMENDATIONS

11.1 DETAILS OF PROPOSED DEVELOPMENT

At this stage, the site is to be marketed for sale. The site is located within the defined settlement boundary of the Monmouthshire County Council Local Development Plan. In principal, the site is allocated for mixed use, mostly residential with some employment.

Therefore a predominantly residential development comprising traditional 2/3 storey properties is anticipated, together with some low-rise commercial units.

11.2 SITE PREPARATION

Prior to site works commencing on site, all existing underground services, including any drainage runs and manholes, should be located and either removed or protected and/or diverted from beneath the development area. Any diversionary works should be carried out under the supervision of, and to the specification of, the appropriate statutory authorities.

Prior to demolition of the existing farm buildings in the centre of the site, building inventory and demolition strategies should be undertaken to ensure safe working methods and disposal of materials. Demolition asbestos surveys should be carried out, and the subsequent soft strip should be carried out in accordance with the recommendations within these reports.

The existing topsoil should be stripped off and stockpiled on site for potential re-use, subject to validation testing, including screening for asbestos.

Any redundant ground slabs, foundations, walls, drainage, basements, and underground services associated with the vacant building will need to be broken out with the resulting debris crushed and screened to a structural specification, typically 150mm maximum particle size. All excavated materials should be screened for unsuitable materials such as timber, metal etc. The resulting voids should be backfilled with a suitable selected structural fill to achieve a stable development platform. Department of Transport (DTp) Type 1 sub-base, or similar approved, could be used and should be compacted in layers, in accordance with the DTp Specification for Highway Works.

Depending on the proposed levels, any reduced formation should be brought back up to the required level with acceptable imported or excavated materials.

11.2 SITE PREPARATION (CONTINUED)

The fill materials should be placed in layers and well compacted, in accordance with Department of Transport (DTp) Specification for Highway works.

Any soft spots/areas should be removed and the reduced levels should be proof rolled and brought up to the required levels with either well compacted imported granular materials, or acceptable materials excavated from site, as described above.

There are some mature trees/hedges along the edges of the site, and within the site area. Allowances should therefore be made for the removal of any associated roots that may become exposed in any nearby earthworks and foundation excavations.

Allowances should be made for encountering and dealing with/diverting any existing land drains, ditches, and/or possible springs.

11.3 FOUNDATIONS AND FLOOR SLABS

Based on the findings of the site investigation it is considered that traditional concrete strip/trench fill foundations, founded within the in-situ firm clay and medium dense to dense sand deposits could be used across the site. Where the windowless sample boreholes were refused at shallow depths on suspected less-weathered bedrock strata, the foundations may be founded within these strata.

All foundations for individual buildings should be constructed within uniform strata in order to minimise the potential for differential settlement. An allowable bearing pressure of 75kN/m^2 should be achievable and used for design purposes. At this intensity of loading total settlements should be less than 25mm, and any angular distortions caused by differential settlements should be less than 1:750.

Top and bottom steel reinforcement is recommended to accommodate the significant variation in depth to rockhead, to mitigate against any hard/soft spots, and to reduce the potential for differential settlements.

Allowances should be made for dealing with trench collapses during construction in areas where sand strata were encountered. This may require measures such as temporarily reducing the ground levels and/or battering/supporting the excavation sides. Allowances should also be made for using extra concrete.

11.3 FOUNDATIONS AND FLOOR SLABS (CONTINUED)

The foundation formations should be kept a minimum depth of 0.9m below the finished ground levels where significant clay is present, in order to protect them from the effects of frost heave/ thermal shrinkage. Where buildings are founded within shallow rock materials, no minimum depth requirement for frost will apply.

Footings should be deepened in accordance with NHBC guidance for foundations constructed adjacent to mature trees and hedgerows, many of which have been identified on site. The foundation formations should be inspected and the shrinkage potential determined, with protection measures should be incorporated in accordance with NHBC standards for shrinkable soils. Shrinkage laboratory results are pending at the time of issue of this report.

Ground bearing floor slabs may be used where less than 600mm of structural make-up or made ground is present beneath the slab, otherwise suspended floor slabs will be required.

Buildings constructed with 10m of cleared trees or hedgerows should incorporate suspended ground slab construction.

Basic radon gas protective measures are required.

If significant earthworks are required for the development consideration may be given to the use of raft foundations in areas to be raised in level using structural fill.

11.4 EXCAVATIONS AND FORMATIONS

Excavations to the reported depths of the windowless sample boreholes should be possible with normal soil excavating machinery.

However, allowances should be made for the use of pneumatic breaker attachments, or similar tools, should any large obstructions, e.g., boulders, be encountered. Below the depths of the windowless sample boreholes ground conditions may vary. There is potential for hard dig conditions, as the windowless sample boreholes terminated on dense strata, possibly reflecting highly weathered bedrock surfaces. The deeper ground conditions and groundwater levels should be established by further investigation should excavation deeper than the depth of the windowless sample boreholes become required.

Significant groundwater infiltrations are not anticipated at shallow depths across the site.

11.4 EXCAVATIONS AND FORMATIONS (CONTINUED)

During excavation/re-engineering works, it is considered that any groundwater inflows together with rainfall infiltration could be controlled by using conventional pumping techniques to sumps.

The sides of excavations deeper than 1.2m should be supported by planking and strutting, or temporarily battered at gradients of typically 30º.

11.5 ACCESS ROADS AND CAR PARKING AREAS

In-situ California Bearing Ratio (CBR) testing was carried out adjacent to the exploratory borehole locations across the site area, using a hand-held MEXE cone tool.

The results obtained ranged from 4% - 8%. Most of the results were in the 4-5% range, and these values should therefore be used for design purposes for access roads and car parking formations within the natural ground.

Such formations should be regarded as frost susceptible.

It will be necessary to ensure this performance, and hence contingencies should be allowed for the removal of any soft spots/areas and their replacement with well compacted granular fill materials.

These should be placed in well compacted layers, in accordance with Department of Transport (DTp) Specification for Highway Works.

Confirmatory CBR testing should be carried out on the exposed formations in order to confirm the above assumptions.

11.6 RECOMMENDED FURTHER WORKS

The area of the existing farm buildings within the central area of the site and the underlying ground surrounding this area, and within the footprint of the former quarry area should be subject to further site investigation to confirm that the conditions are similar to those identified, in order to confirm foundations recommendations in this area. Any underlying made ground should be sampled and contamination testing undertaken (including asbestos screening) and further risk assessment carried out.

Once development layouts and levels are confirmed, it is recommended that further trial pits are excavated to supplement the windowless sample boreholes.

APPENDIX A

ENVIROCHECK REPORT

Intégral
Géotechnique

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
72679722_1_1

Customer Reference:
11631/SI

National Grid Reference:
343720, 187710

Slice:
A

Site Area (Ha):
16.73

Search Buffer (m):
1000

Site Details:

Rockfield Farm, Undy
Caldicot
NP26 3EL

Client Details:

MR H Pritchard
Integral Geotechnique
Integral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX

Landmark
Information Group

Intégral Géotechnique

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 the attached 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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Natural England Copyright Notice

Ove Arup Copyright Notice

Peter Brett Associates Copyright Notice

Radon Potential dataset Copyright Notice

Report Version v50.0

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		2		6
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 2				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 3		Yes		
Pollution Incidents to Controlled Waters	pg 3				8
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 4				1 (*1)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 4	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 5	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			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
Detailed River Network Lines	pg 5		Yes	Yes	n/a
Detailed River Network Offline Drainage					n/a

Intégral Géotechnique

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 9				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites	pg 9				2
Registered Landfill Sites	pg 9				1
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					
Geological					
BGS 1:625,000 Solid Geology	pg 10	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 10	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 24	1	3	2	9
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			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	pg 27				1
Non Coal Mining Areas of Great Britain	pg 27	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 27	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 27		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 27	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 27	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 28		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 28		Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 28	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 28	Yes	n/a	n/a	n/a

Intégral Géotechnique

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 29		2	5	8
Fuel Station Entries	pg 30				1
Sensitive Land Use					
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	pg 31	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 31			1	
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Undy Ps Nr Church Road Undy, Nr Church Road, Monmouthshire Authority: Natural Resources Wales Catchment Area: Not Given Reference: AN0231401 Permit Version: 2 Effective Date: 3rd February 1995 Issued Date: 3rd February 1995 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Of Prat Reen **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A7NE (SE)	219	2	344060 187270
1	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Undy Ps Nr Church Road Undy, Nr Church Road, Monmouthshire Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: An0231401 Permit Version: 1 Effective Date: 11th March 1992 Issued Date: 11th March 1992 Revocation Date: 2nd February 1995 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Tributary Of Prat Reen **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 10m	A7NE (SE)	219	2	344060 187270
2	**Discharge Consents** Operator: Dwr Cymru Cyfyngedig Property Type: Sewerage Network - Pumping Station - Water Company Location: Church Fm Resiential Devmt Ps Und, Undy, Monmouthshire, Wales Authority: Natural Resources Wales Catchment Area: Collister Pill Reference: AN0055101 Permit Version: 1 Effective Date: 2nd March 1988 Issued Date: 2nd March 1988 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Pratt Reen **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A7SE (SE)	509	2	344080 186980
2	**Discharge Consents** Operator: Twyn Developments Ltd Property Type: Domestic Property (Multiple) Location: Church Farm Res. Dev. Undy Authority: Natural Resources Wales Catchment Area: Collister Pill Reference: An0051601 Permit Version: 1 Effective Date: 16th November 1987 Issued Date: 16th November 1987 Revocation Date: 31st March 1995 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Pratt Reen **Status: Consent expired** Positional Accuracy: Located by supplier to within 10m	A7SE (SE)	519	2	344080 186970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Havelock Properties Ltd Property Type: Undefined Or Other Location: Not Supplied Authority: Natural Resources Wales Catchment Area: Mill Reen/Saint Bride's Brook Reference: An0217401 Permit Version: 2 Effective Date: 31st August 1990 Issued Date: 31st August 1990 Revocation Date: 19th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Mill Reen **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A9NW (W)	871	2	342500 187700
3	**Discharge Consents** Operator: Havelock Properties Ltd Property Type: Undefined Or Other Location: Not Supplied Authority: Natural Resources Wales Catchment Area: Mill Reen/Saint Bride's Brook Reference: An0217401 Permit Version: 1 Effective Date: 1st January 1901 Issued Date: 1st January 1901 Revocation Date: 30th August 1990 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Mill Reen **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A9NW (W)	871	2	342500 187700
4	**Discharge Consents** Operator: Kirton A Property Type: Domestic Property (Single) Location: Magor - 1 Willow Brook Sycamore Ter, Sycamore Terrace Lane Authority: Natural Resources Wales Catchment Area: Coldharbour Reen Reference: An0145301 Permit Version: 1 Effective Date: 7th July 1989 Issued Date: 7th July 1989 Revocation Date: 6th October 1994 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Soakaway **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A9SW (W)	908	2	342500 187500
5	**Discharge Consents** Operator: The Representative Body Of The Church Of Wales Property Type: Education Location: Church Of Wales School-Magor Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Ac0108401 Permit Version: 1 Effective Date: 16th June 1977 Issued Date: 16th June 1977 Revocation Date: 19th April 1993 Discharge Type: Unspecified Discharge Environment: Not Supplied Receiving Water: Unamed Reen **Status: Consent expired** Positional Accuracy: Located by supplier to within 100m	A5NE (SW)	944	2	342700 187100
6	**Local Authority Pollution Prevention and Controls** Name: Reliance Garage Location: Undy, Caldicot, Gwent, NP26 3EQ Authority: Monmouthshire Council, Environmental Health Department Permit Reference: MCC/EPR/B/10/98 Dated: 7th October 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation revokedRevoked** Positional Accuracy: Automatically positioned to the address	A5NE (SW)	866	3	342709 187204

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Nearest Surface Water Feature	A10NE (N)	3	-	343662 187886
7	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Collister Pill Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Not Supplied Incident Date: 4th April 1995 Incident Reference: 23626 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	A8SW (SE)	753	4	344510 186910
8	**Pollution Incidents to Controlled Waters** Property Type: Road (Lost Load) Location: Up Stream Of, Motorway Crossing Authority: Environment Agency, Welsh Region Pollutant: Oils - Diesel (Including Agricultural) Note: Deliberate Act Incident Date: 30th May 1995 Incident Reference: 24178 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	A9NW (W)	869	4	342500 187900
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Sullage Note: Not Supplied Incident Date: 26th May 1995 Incident Reference: 24447 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (W)	871	4	342510 187620
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Algae Note: Natural Occurrence Incident Date: 4th April 1997 Incident Reference: 32543 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Natural Causes Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (W)	874	4	342510 187600
10	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Magor School, MAGOR Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Weather Incident Date: 1st July 1992 Incident Reference: 4426 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Runoff Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A5NE (SW)	876	4	342700 187200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: Location Description Not Available Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Weather Incident Date: 1st July 1992 Incident Reference: 4426 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	A5NE (SW)	879	4	342700 187195
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Magnor Industrial Estate, Near Magnor Junior School Authority: Environment Agency, Welsh Region Pollutant: Unknown Note: Neglect Incident Date: 12th February 1991 Incident Reference: 74 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A5NW (W)	899	4	342600 187300
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Footbridge Authority: Environment Agency, Welsh Region Pollutant: Light Oil Note: Neglect Incident Date: 12th February 1991 Incident Reference: 74 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Spillage Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A5NW (W)	901	4	342600 187295
12	**Water Abstractions** Operator: Mr H Phillips Licence Number: 20/56/72/0029 Permit Version: 100 Location: Borehole At Green Farm Authority: Natural Resources Wales Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 12 July Permit Start Date: 1st April 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A16NW (NE)	903	2	344680 188390
	Water Abstractions Operator: Richard Costain Uk Limited Licence Number: 20/56/72/0034 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, Welsh Region Abstraction: General Industrial Abstraction Type: Not Supplied Source: River Daily Rate (m3): 20 Yearly Rate (m3): 3273 Details: Moor Ditch 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	(E)	1477	4	345500 187400
	Groundwater Vulnerability Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 36 Mid Glamorgan Scale: 1:100,000	A11NW (E)	0	4	343724 187706

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A11NW (E)	0	5	343724 187706
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
13	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A10NE (N)	3	4	343662 187886
14	**Detailed River Network Lines** River Type: Secondary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (N)	8	4	343721 187887
15	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (NE)	8	4	343813 187890
16	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (N)	56	4	343701 187960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (N)	82	4	343714 187961
18	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (NE)	88	4	344032 187891
19	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NW (N)	89	4	343792 187968
20	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A7NW (SE)	196	4	344014 187287
21	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (NE)	197	4	344115 187965
22	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A7NE (SE)	224	4	344063 187265

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A7NE (SE)	242	4	344079 187250
24	**Detailed River Network Lines** River Type: Secondary River River Name: Sea Wall Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A7NE (SE)	313	4	344155 187202
25	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (NE)	355	4	344279 187994
26	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A11NE (E)	376	4	344326 187938
27	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	446	4	344414 187836
28	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk Other Rivers Management Status: Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	446	4	344414 187836

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**Detailed River Network Lines** River Type: Secondary River River Name: Prat Reen Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A7NE (SE)	459	4	344098 187033
30	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D008 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NW (E)	471	4	344432 187902
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	**Historical Landfill Sites** Licence Holder: Monmouthshire Borough Council Location: Magor, Monmouthshire Name: Land off Dancing Hill Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14618 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6840/0024 BGS Ref: Not Supplied Other Ref: MBC 23, MBC24	A9NE (W)	534	2	342836 187720
	Local Authority Landfill Coverage Name: Monmouthshire Council - Has supplied landfill data		0	6	343724 187706
32	**Local Authority Recorded Landfill Sites** Location: Dancing Hill, Undy Reference: 23 Authority: Monmouthshire Council, Environment **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A9NE (W)	542	6	342828 187706
33	**Local Authority Recorded Landfill Sites** Location: Dinch Hill, Magor Reference: 24 Authority: Monmouthshire Council, Environment **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Applicable	A9SE (W)	668	6	342792 187429
34	**Registered Landfill Sites** Licence Holder: Wimpey Construction Uk Ltd Licence Reference: 1/83 Site Location: Disused Quarry At Dinch Hill, Magor, Newport, Gwent Licence Easting: 342830 Licence Northing: 187440 Operator Location: 382-384 Newport Road, CARDIFF, South Glamorgan, CF3 7YU Authority: Environment Agency Wales, South East Area Site Category: Landfill Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st February 1983 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Excavated Natural Materials $ Hardcore And Rubble Prohibited Waste: Animal Or Fish Waste Carcasses And Flesh Obnoxious Wastes	A9SE (W)	629	4	342830 187440

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Triassic Rocks (Undifferentiated)	A11NW (E)	0	5	343724 187706
	BGS 1:625,000 Solid Geology Description: Dinantian Rocks (Undifferentiated)	A10SE (SW)	0	5	343677 187620
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (E)	0	5	343724 187706
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (NW)	0	5	343682 187794
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (E)	0	5	344000 187706
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (SE)	25	5	344047 187473
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (N)	59	5	343637 187937

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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NW (W)	94	5	343272 187782
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (N)	115	5	343724 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (N)	122	5	343672 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (NW)	123	5	343547 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (NE)	137	5	344000 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SE)	250	5	344104 187248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15SE (NE)	311	5	344178 188074
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15SE (NE)	327	5	344230 188025
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (SE)	328	5	344357 187433
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NE (NE)	345	5	344264 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NE (W)	367	5	343000 187706
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NE (SE)	381	5	344251 187173

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NE (W)	400	5	343000 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	474	5	343724 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	476	5	343962 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	482	5	344000 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SE (SE)	488	5	344066 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SE (SE)	496	5	344124 187000

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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SE (SE)	506	5	344165 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	526	5	344000 186955
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (NW)	585	5	342998 188301
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6NE (SW)	590	5	343430 187025
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (NW)	590	5	343000 188304
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A16SW (NE)	593	5	344511 188062

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	610	5	343891 186847
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NW (N)	611	5	344000 188492
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SE (SW)	615	5	343429 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (NW)	619	5	343000 188340
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	634	5	343347 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	655	5	343322 186987

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (SW)	656	5	342980 187182
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NW (N)	664	5	344000 188545
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (SW)	693	5	343000 187153
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (SE)	709	5	344562 187023
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (SE)	711	5	344544 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (SW)	752	5	342899 187098

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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	765	5	342619 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (W)	768	5	342733 187328
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	780	5	343254 186879
	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: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	791	5	343250 186868
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5SE (SW)	809	5	343000 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	812	5	342556 187769

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5SE (SW)	823	5	342977 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	826	5	342542 187759
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (SW)	828	5	342909 187044
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (E)	830	5	344843 187629
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	831	5	343045 186930
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	840	5	342527 187871

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5SE (SW)	844	5	342943 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SW (SW)	850	5	343116 186868
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NW)	872	5	342894 188575
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	874	5	342507 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (N)	883	5	343976 188767
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (N)	895	5	344000 188777

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	899	5	342482 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NW (W)	902	5	342604 187282
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9SW (W)	907	5	342484 187564
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SE (SE)	911	5	344796 187000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	916	5	342465 188000
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18SE (N)	918	5	343553 188805

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9SW (W)	922	5	342546 187345
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A19SW (N)	923	5	344000 188805
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NW (SW)	924	5	342637 187170
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	925	5	342492 188143
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NW (S)	927	5	343787 186538
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NW (S)	928	5	344000 186550

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (E)	929	5	344907 187799
	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: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9SW (W)	932	5	342451 187599
	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: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (SW)	943	5	342758 187014
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A16SE (NE)	947	5	344781 188310
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18SE (N)	951	5	343595 188829
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	956	5	342414 187705

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	958	5	342447 188109
	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: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5SE (SW)	966	5	342821 186935
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	972	5	342426 188086
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (E)	974	5	345000 187548
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (E)	976	5	345000 187755
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (E)	983	5	345000 187706

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A16NW (NE)	985	5	344512 188676
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NE (E)	987	5	344968 187783
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	992	5	342375 187821
	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: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5SE (SW)	1000	5	342724 187000
35	**BGS Recorded Mineral Sites** Site Name: Knollbury Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176450 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A11NW (NE)	0	5	343765 187745
36	**BGS Recorded Mineral Sites** Site Name: Knollbury Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176449 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A10NE (N)	116	5	343651 187994

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	**BGS Recorded Mineral Sites** Site Name: The Elms Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176582 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A10SE (S)	142	5	343675 187435
38	**BGS Recorded Mineral Sites** Site Name: Vinegar Hill Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176583 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A10SE (SW)	179	5	343513 187428
39	**BGS Recorded Mineral Sites** Site Name: Vinegar Hill Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176584 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A6NE (SW)	317	5	343458 187298
40	**BGS Recorded Mineral Sites** Site Name: Holly House Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176585 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A6NE (SW)	420	5	343478 187189
41	**BGS Recorded Mineral Sites** Site Name: The Cedars Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176460 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A9SE (W)	534	5	342842 187675
42	**BGS Recorded Mineral Sites** Site Name: Red Barn Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176451 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Llanelly Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A12NW (E)	584	5	344535 187964

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**BGS Recorded Mineral Sites** Site Name: The Dancing Place Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176447 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A9SE (W)	596	5	342797 187595
44	**BGS Recorded Mineral Sites** Site Name: Dinch Hill Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176579 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A9SE (W)	619	5	342794 187536
45	**BGS Recorded Mineral Sites** Site Name: Dinch Hill Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176580 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A9SE (W)	622	5	342836 187445
46	**BGS Recorded Mineral Sites** Site Name: Holly House Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176581 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A6NW (SW)	627	5	343229 187060
47	**BGS Recorded Mineral Sites** Site Name: Whitehall Location: , Undy, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176586 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A6SE (S)	786	5	343489 186811
48	**BGS Recorded Mineral Sites** Site Name: Hill Barn Location: , Rogiet, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176443 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Llanelly Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	915	5	344528 188574

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	**BGS Recorded Mineral Sites** Site Name: Upper Grange Location: , Magor, Newport, Monmouthshire Source: British Geological Survey, National Geoscience Information Service Reference: 176446 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Carboniferous Geology: Black Rock Limestone Subgroup Commodity: Dolomite Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	996	5	342626 188507
	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				
	Natural Cavities Easting: 343100 Northing: 187200 Distance: 590 Quadrant Reference: A6 Quadrant Reference: NW Bearing Ref: SW Cavity Type: Solution Widened Joint or Fissure x 1 Solid Geology Detail: Lower Carboniferous Limestone Superficial Geology Detail: No Details	A6NW (SW)	590	7	343100 187200
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NE (SE)	250	5	344104 187248
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A7NE (SE)	250	5	344104 187248
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	21	5	343862 187423
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	25	5	344047 187473
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	94	5	343272 187782
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (SE)	191	5	344096 187308
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	216	5	344214 187381
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	5	343682 187794

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	112	5	343255 187830
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A7NE (SE)	250	5	344104 187248
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	25	5	344047 187473
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	94	5	343272 187782
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (SE)	250	5	344104 187248
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	0	5	343874 187600
	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	A11NW (E)	0	5	343724 187706
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	0	5	343724 187875
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	5	343624 187850
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	0	5	343874 187600
	Radon Potential - Radon Affected Areas Affected Area: The property is in an intermediate probability radon area, as between 3 and 5% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	5	343724 187706
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	0	5	343724 187875
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	5	343624 187850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	**Contemporary Trade Directory Entries** Name: Eco Print Solutions Direct Location: Undy, Caldicot, Gwent, NP26 3BX Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A10NW (NW)	132	-	343265 187925
50	**Contemporary Trade Directory Entries** Name: Canute Group Location: Europark, Llandavenny/Magor, Newport, Gwent, NP26 3WN Classification: Road Haulage Services **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A10NW (NW)	164	-	343256 187962
51	**Contemporary Trade Directory Entries** Name: M S Upholstery & Carpet Cleaning Location: Beechenhurst, Undy, Caldicot, Gwent, NP26 3HF Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SE)	378	-	343986 187103
51	**Contemporary Trade Directory Entries** Name: Ms Cleaning Services Location: Beechenhurst, Undy, Caldicot, Gwent, NP26 3HF Classification: Commercial Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SE)	378	-	343986 187103
52	**Contemporary Trade Directory Entries** Name: Equine Farewells Location: Palm's Rest,Arlington Cl, Undy, Caldicot, Gwent, NP26 3EF Classification: Abattoirs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A7NW (S)	397	-	343741 187116
53	**Contemporary Trade Directory Entries** Name: Francis Catering Solutions Location: The Knollbury, Undy, CALDICOT, Gwent, NP26 3BX Classification: Catering Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (NW)	420	-	343203 188228
54	**Contemporary Trade Directory Entries** Name: Well Garage Location: Church Lane, Undy, Caldicot, Gwent, NP26 3EN Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	478	-	343987 187001
55	**Contemporary Trade Directory Entries** Name: Fast Fuel Ltd Location: 12, Bridewell Gardens, Undy, Caldicot, Gwent, NP26 3JZ Classification: Oil Fuel Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	582	-	343876 186893
56	**Contemporary Trade Directory Entries** Name: Basics Creative Design Location: 3, Crossways Close, Undy, CALDICOT, Gwent, NP26 3FE Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SE (S)	723	-	343673 186792
57	**Contemporary Trade Directory Entries** Name: Project Engineering Support Ltd Location: 12, The Willows, Undy, Caldicot, Gwent, NP26 3HQ Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5NE (SW)	764	-	342927 187127
58	**Contemporary Trade Directory Entries** Name: Undy Builders' Supplies Location: West End Farm, Undy, Caldicot, Gwent, NP26 3EN Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SE (S)	792	-	343421 186821
59	**Contemporary Trade Directory Entries** Name: Quarry Tyres Location: The Quarry, Undy, Caldicot, Gwent, NP26 3EN Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SE (S)	801	-	343493 186792

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**Contemporary Trade Directory Entries** Name: Dublcheck Location: 12, Mill Reen, Undy, Caldicot, Gwent, NP26 3JP Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5NW (W)	838	-	342666 187308
61	**Contemporary Trade Directory Entries** Name: Undy Services & Diy Ltd Location: Reliance Garage, Undy, CALDICOT, Gwent, NP26 3EQ Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5NE (SW)	866	-	342709 187204
62	**Contemporary Trade Directory Entries** Name: Magor Motors Location: The Mill, Magor, Caldicot, Gwent, NP26 3HN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5NW (SW)	904	-	342626 187250
63	**Fuel Station Entries** Name: Reliance Garage Location: Undy, Caldicot, Gwent, NP26 3EQ Brand: Unbranded Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A5NE (SW)	866	-	342709 187204

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
64	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Not Supplied Source: The National Assembly for Wales, GI Services (Department of Planning & Countryside)	A11NW (E)	0	8	343724 187706
65	**Sites of Special Scientific Interest** Name: Gwent Levels - Magor And Undy Multiple Areas: N Total Area (m2): 5906994.83 Source: Natural Resources Wales Reference: 30733wec Designation Details: Biological Designation Date: 5th October 1989 Date Type: Notified	A7NE (SE)	458	2	344095 187034

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Monmouthshire Council - Environment Department	January 2015	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	January 2015	Annual Rolling Update
North Somerset Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Welsh Region	August 2014	Quarterly
Natural Resources Wales	July 2015	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Welsh Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Welsh Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Welsh Region	July 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Monmouthshire Council - Environmental Health Department	June 2014	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	June 2014	Annual Rolling Update
North Somerset Council - Environmental Health Department	September 2013	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Monmouthshire Council - Environmental Health Department	June 2014	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	June 2014	Annual Rolling Update
North Somerset Council - Environmental Health Department	March 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Monmouthshire Council - Environmental Health Department	June 2014	Annual Rolling Update
Newport City Council - Public Protection and Environmental Services	June 2014	Annual Rolling Update
North Somerset Council - Environmental Health Department	September 2013	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Welsh Region	March 2013	As notified
Natural Resources Wales	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Welsh Region	March 2013	As notified
Natural Resources Wales	March 2013	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South West Region - North Wessex Area	July 2015	Quarterly
Environment Agency Wales - South East Area	July 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly
Water Abstractions		
Environment Agency - Welsh Region	April 2015	Quarterly
Natural Resources Wales	April 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Industry Act Referrals		
Environment Agency - Welsh Region	July 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	October 2012	As notified
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	January 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	July 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	May 2015	Quarterly
Natural Resources Wales	May 2015	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	May 2015	Quarterly
Natural Resources Wales	May 2015	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	May 2015	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	May 2015	Quarterly
Flood Defences		
Environment Agency - Head Office	May 2015	Quarterly
Detailed River Network Lines		
Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage		
Environment Agency - Head Office	March 2012	Annually
Surface Water 1 in 30 year Flood Extent		
Natural Resources Wales	October 2013	As notified
Surface Water 1 in 100 year Flood Extent		
Natural Resources Wales	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent		
Natural Resources Wales	October 2013	As notified
Surface Water Suitability		
Natural Resources Wales	October 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - South West Region - North Wessex Area	May 2015	Quarterly
Environment Agency Wales - South East Area	May 2015	Quarterly
Natural Resources Wales	May 2015	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South West Region - North Wessex Area	August 2014	Quarterly
Environment Agency Wales - South East Area	August 2014	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South West Region - North Wessex Area	July 2015	Quarterly
Environment Agency Wales - South East Area	July 2015	Quarterly
Natural Resources Wales	July 2015	Quarterly
Local Authority Landfill Coverage		
Monmouthshire Council - Environment	May 2000	Not Applicable
Newport City Council	May 2000	Not Applicable
North Somerset Council	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Monmouthshire Council - Environment	May 2000	Not Applicable
Newport City Council	May 2000	Not Applicable
North Somerset Council	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency Wales - South East Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency Wales - South East Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency Wales - South East Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	June 2015	Bi-Annually
Explosive Sites		
Health and Safety Executive	June 2015	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
North Somerset Council	March 2015	Annual Rolling Update
Monmouthshire Council - Environment	September 2014	Annual Rolling Update
Newport City Council - Planning Department	September 2014	Annual Rolling Update
Planning Hazardous Substance Consents		
North Somerset Council	March 2015	Annual Rolling Update
Monmouthshire Council - Environment	September 2014	Annual Rolling Update
Newport City Council - Planning Department	September 2014	Annual Rolling Update

Data Currency

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	January 2010	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2015	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Mining Report Service	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	July 2014	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	August 2015	Quarterly
Fuel Station Entries Catalist Ltd - Experian	August 2015	Quarterly

Sensitive Land Use	Version	Update Cycle
Areas of Adopted Green Belt		
Newport City Council	May 2015	As notified
North Somerset Council	May 2015	As notified
Areas of Unadopted Green Belt		
Newport City Council	May 2015	As notified
North Somerset Council	May 2015	As notified
Areas of Outstanding Natural Beauty		
Natural Resources Wales	February 2015	Bi-Annually
Environmentally Sensitive Areas		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	August 2008	Annually
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Monmouthshire Council	April 2015	Bi-Annually
Newport City Council	April 2015	Bi-Annually
Marine Nature Reserves		
Natural Resources Wales	September 2014	Bi-Annually
National Nature Reserves		
Natural Resources Wales	October 2014	Bi-Annually
Nitrate Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones		
The National Assembly for Wales - GI Services (Department of Planning & Countryside)	October 2005	Annually
Ramsar Sites		
Natural Resources Wales	October 2014	Bi-Annually
Sites of Special Scientific Interest		
Natural Resources Wales	April 2015	Bi-Annually
Special Areas of Conservation		
Natural Resources Wales	March 2014	Bi-Annually
Special Protection Areas		
Natural Resources Wales	April 2015	Bi-Annually

Data Suppliers

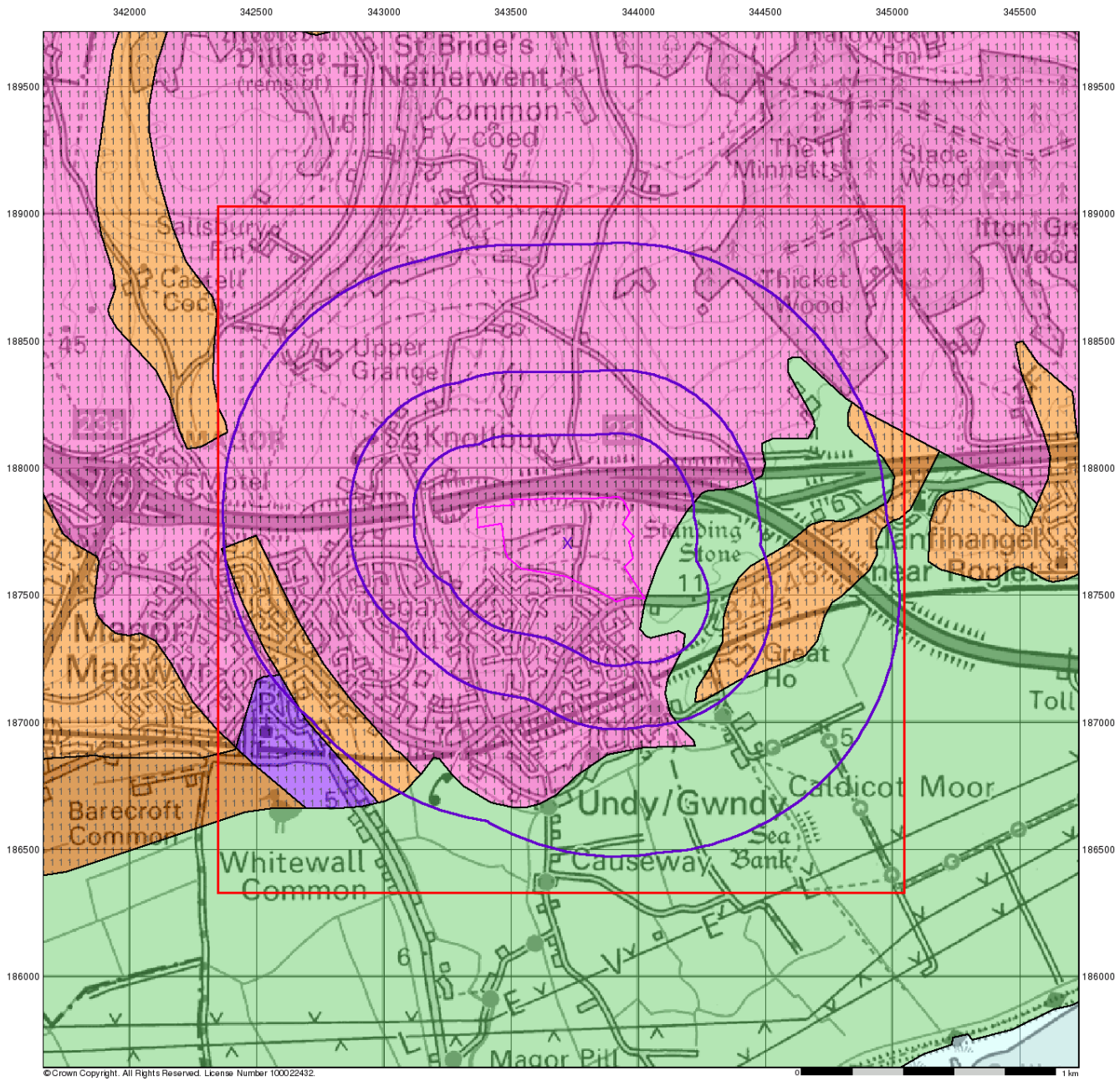
A selection of organisations who provide data within this report

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	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
2	**Natural Resources Wales** Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	**Monmouthshire Council - Environmental Health Department** Environmental Services Department, County Hall, Cwmbran, Gwent, NP44 2XH	Telephone: 01633 644116 Fax: 01633 644105 Website: www.monmouthshire.gov.uk
4	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
5	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
6	**Monmouthshire Council - Environment** County Hall, Cwbran, NP44 2XH	Telephone: 01633 644644 Fax: 01633 832990 Website: www.monmouthshire.gov.uk
7	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
8	**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.



Intégral
Géotechnique

Groundwater Vulnerability

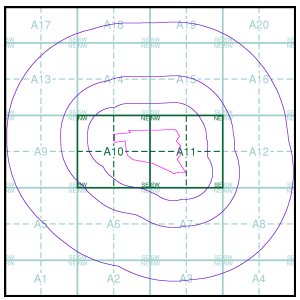
General

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

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



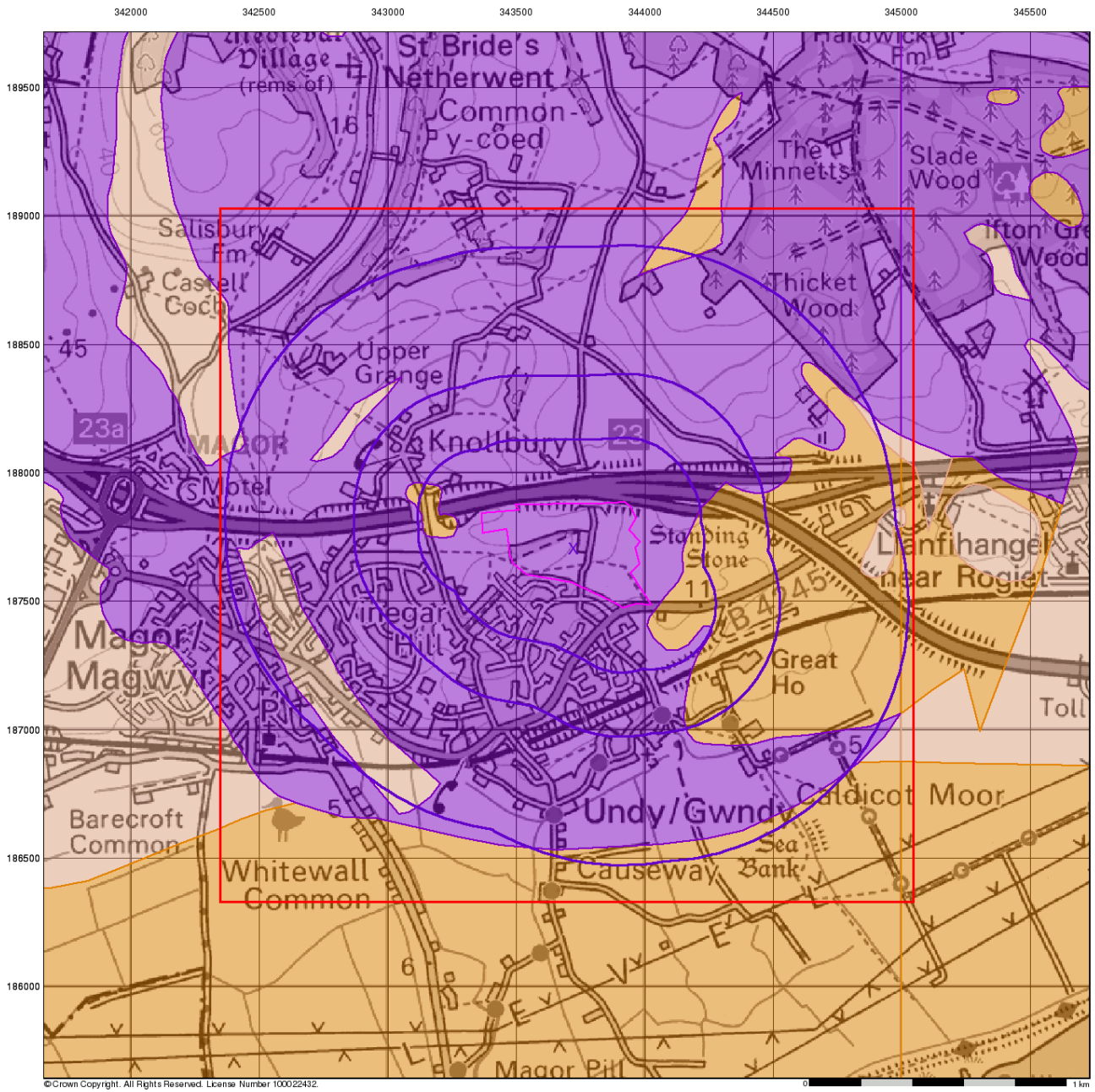
Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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



Intégral Géotechnique

Bedrock Aquifer Designation

General

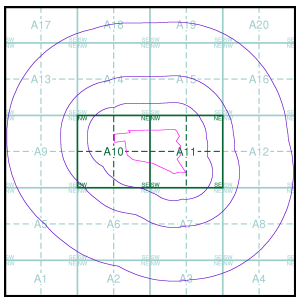
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



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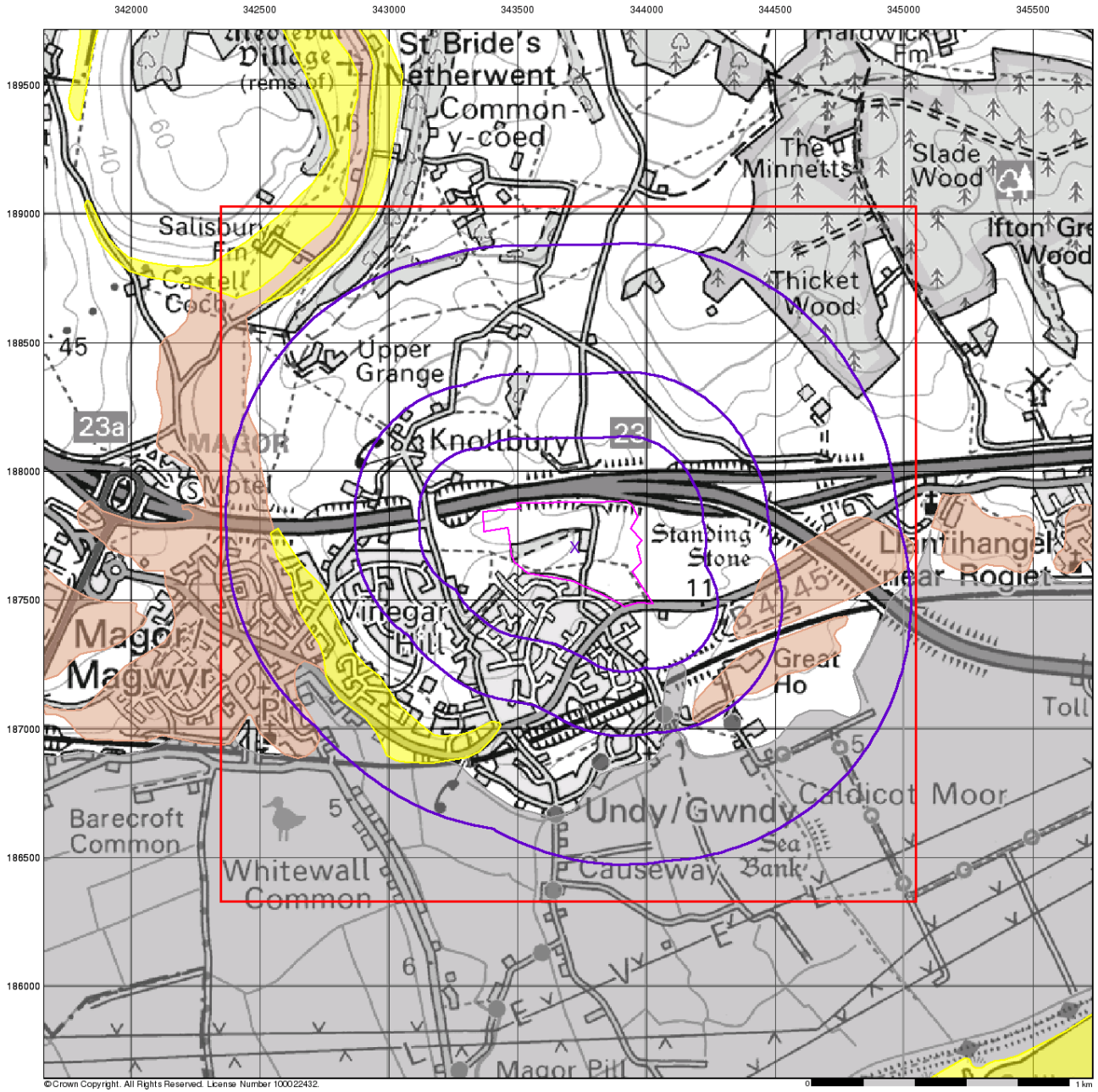


Intégral Géotechnique

Superficial Aquifer Designation

General

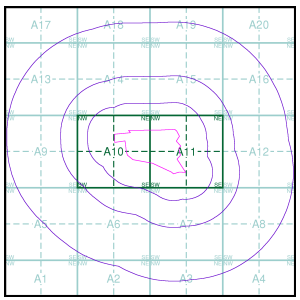
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



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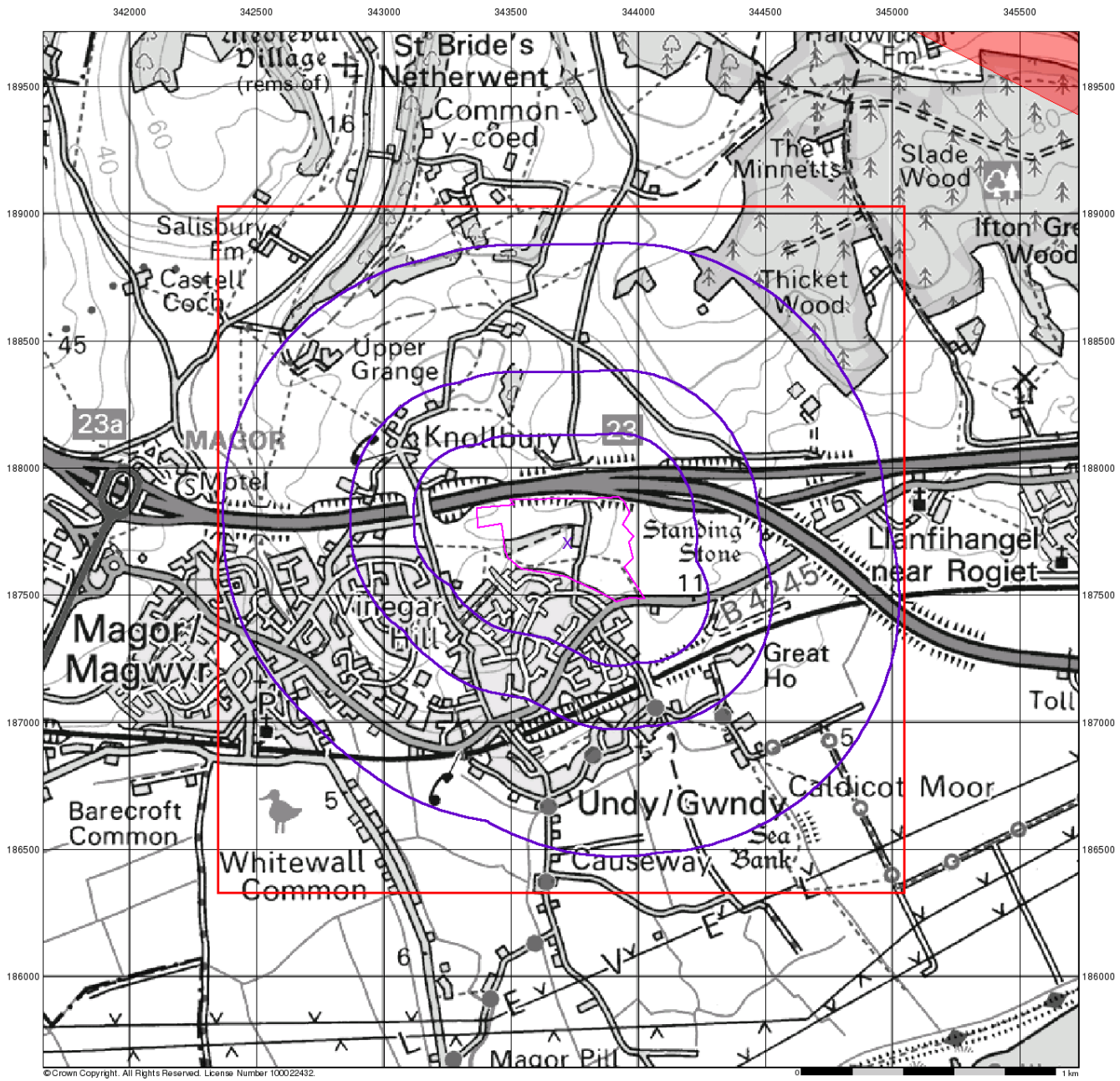


Intégral Géotechnique

Source Protection Zones

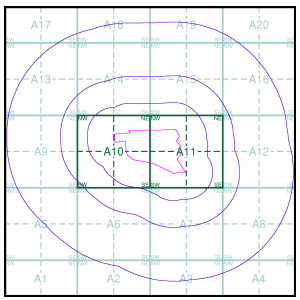
General

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)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



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Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

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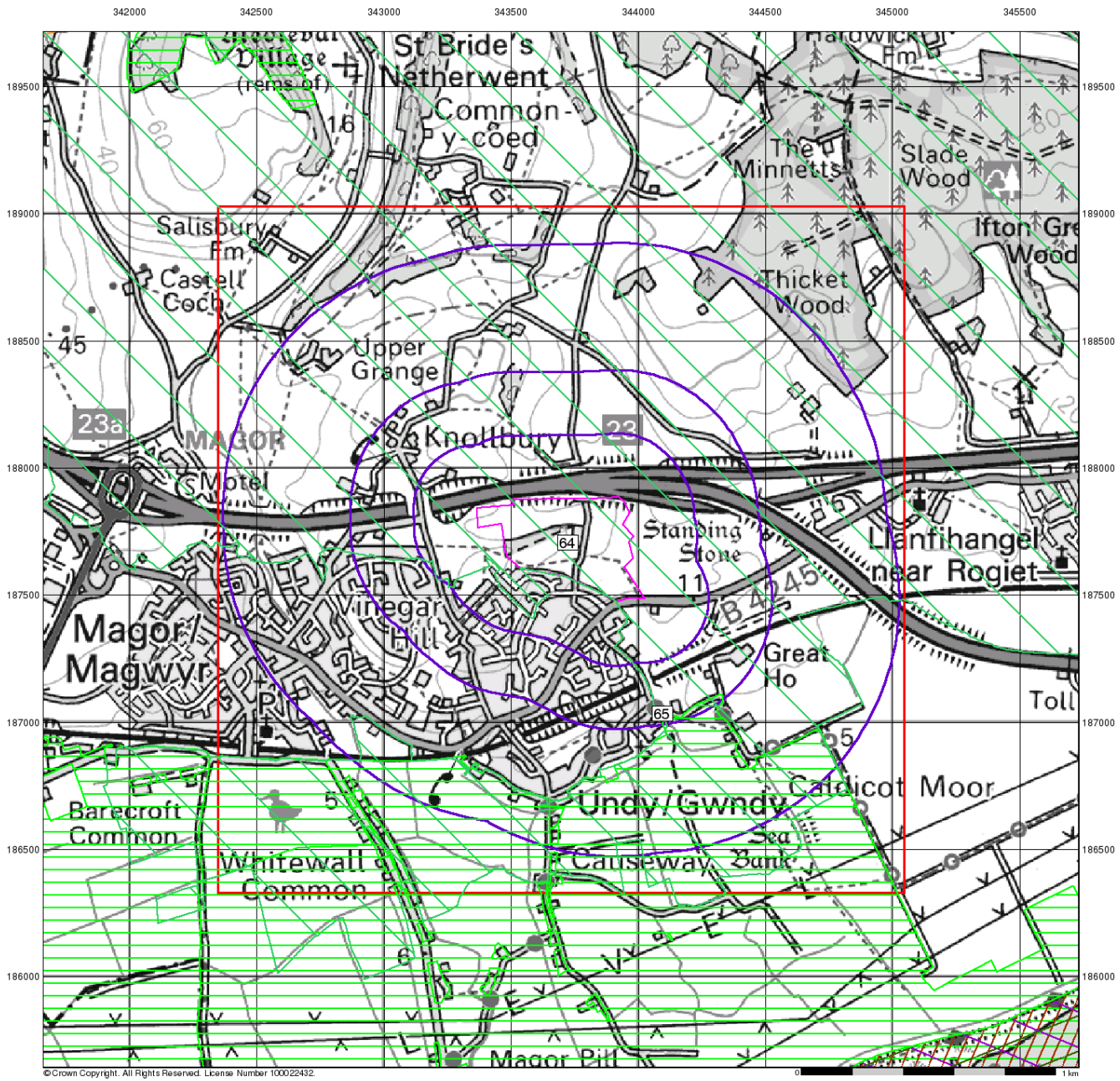


Intégral Géotechnique

Sensitive Land Uses

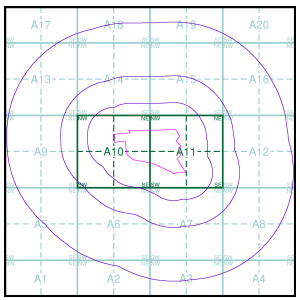
General

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

Sensitive Land Uses

- 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

Site Sensitivity Context Map - Slice A



Order Details

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Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

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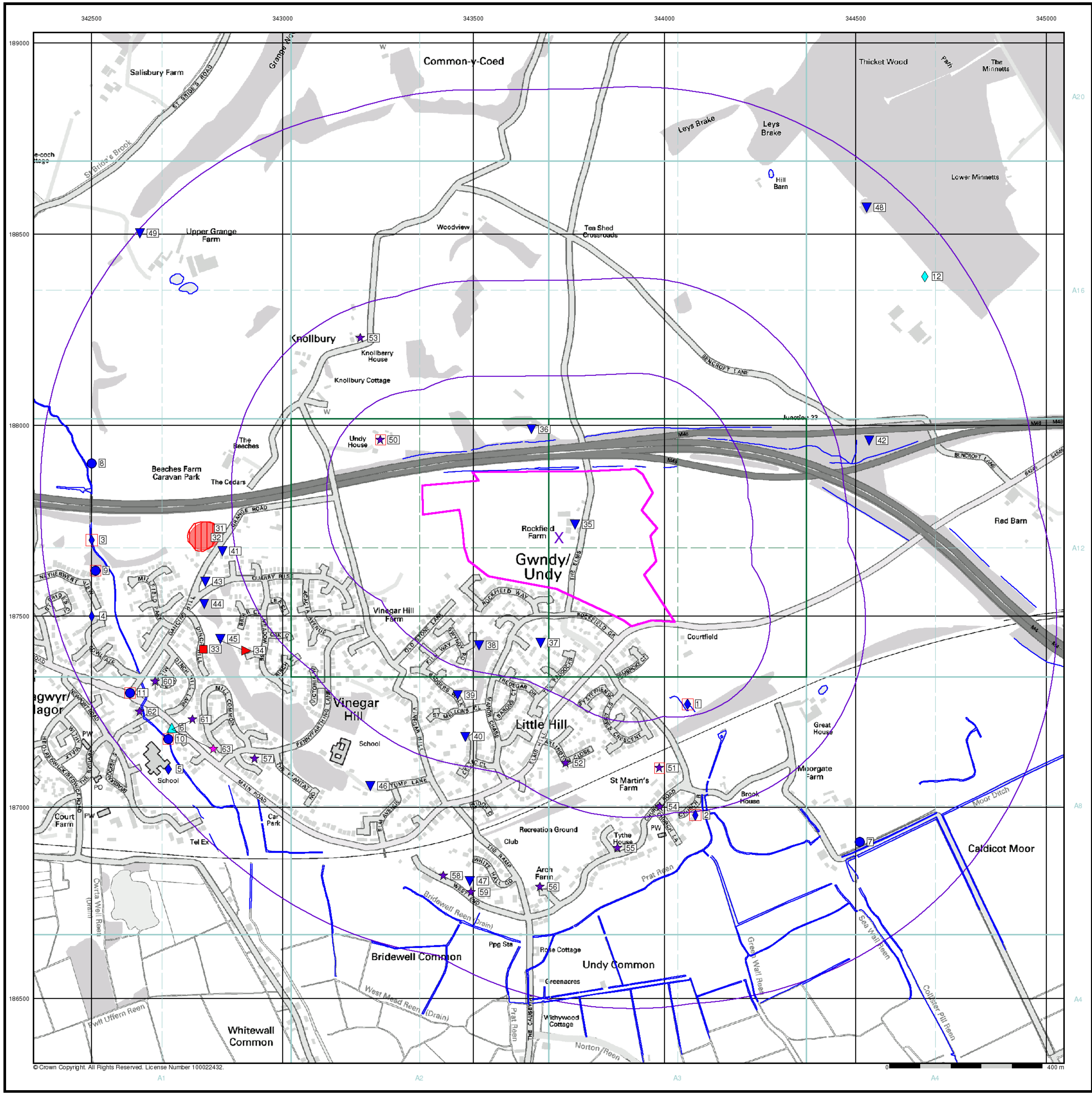


Intégral Géotechnique

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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

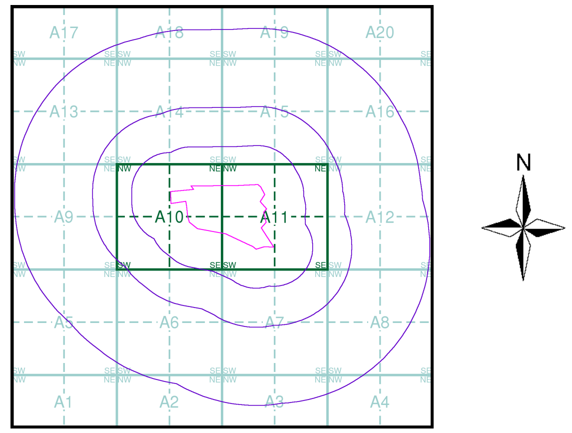
Waste

- 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
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Slice A



Order Details

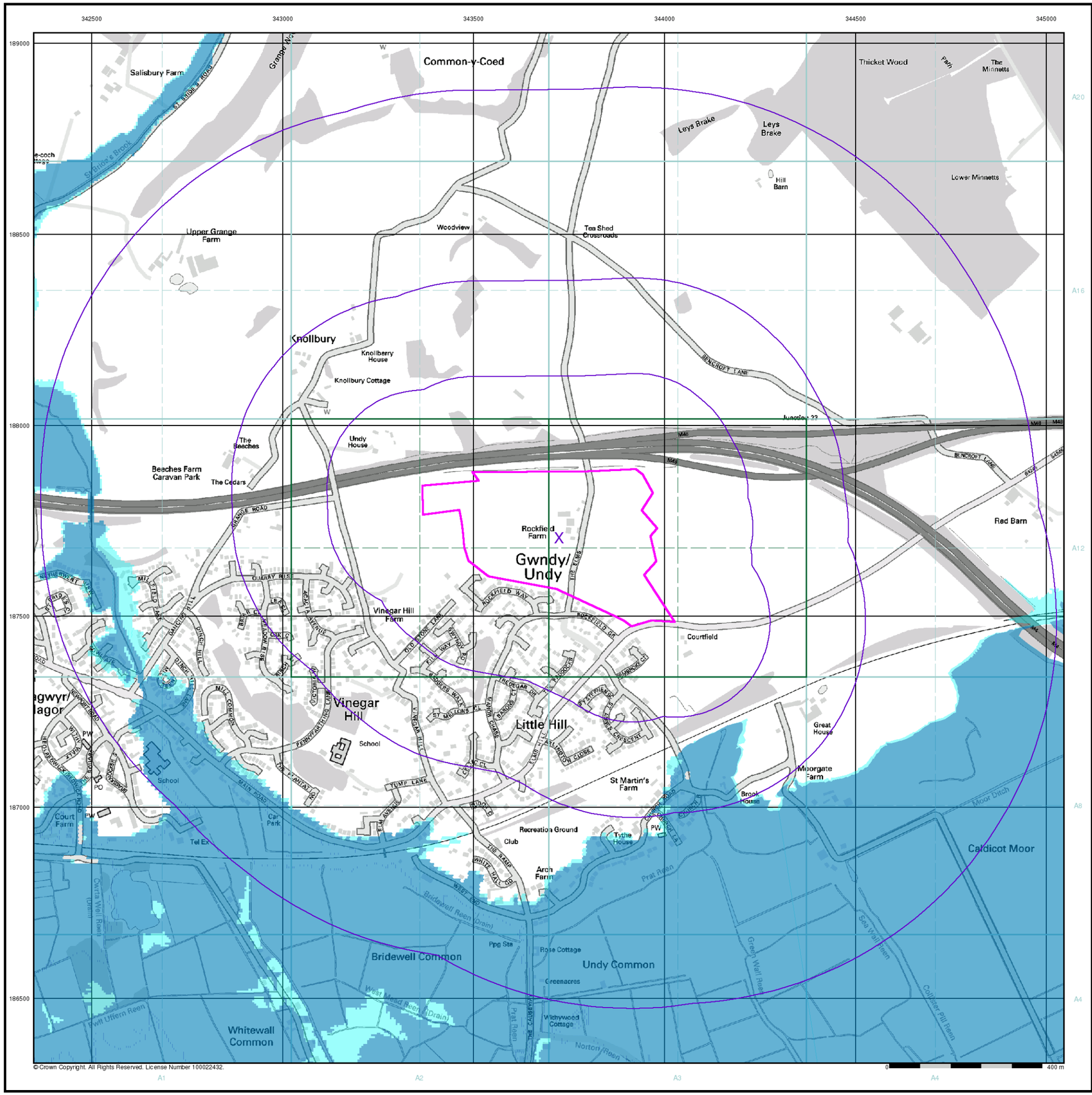
Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark Information Group

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



Intégral Géotechnique

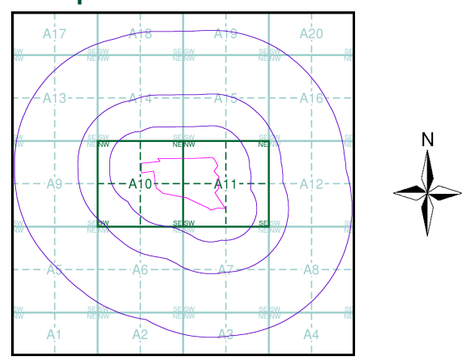
General

- Specified Site
- Specified Buffer(s)
- X 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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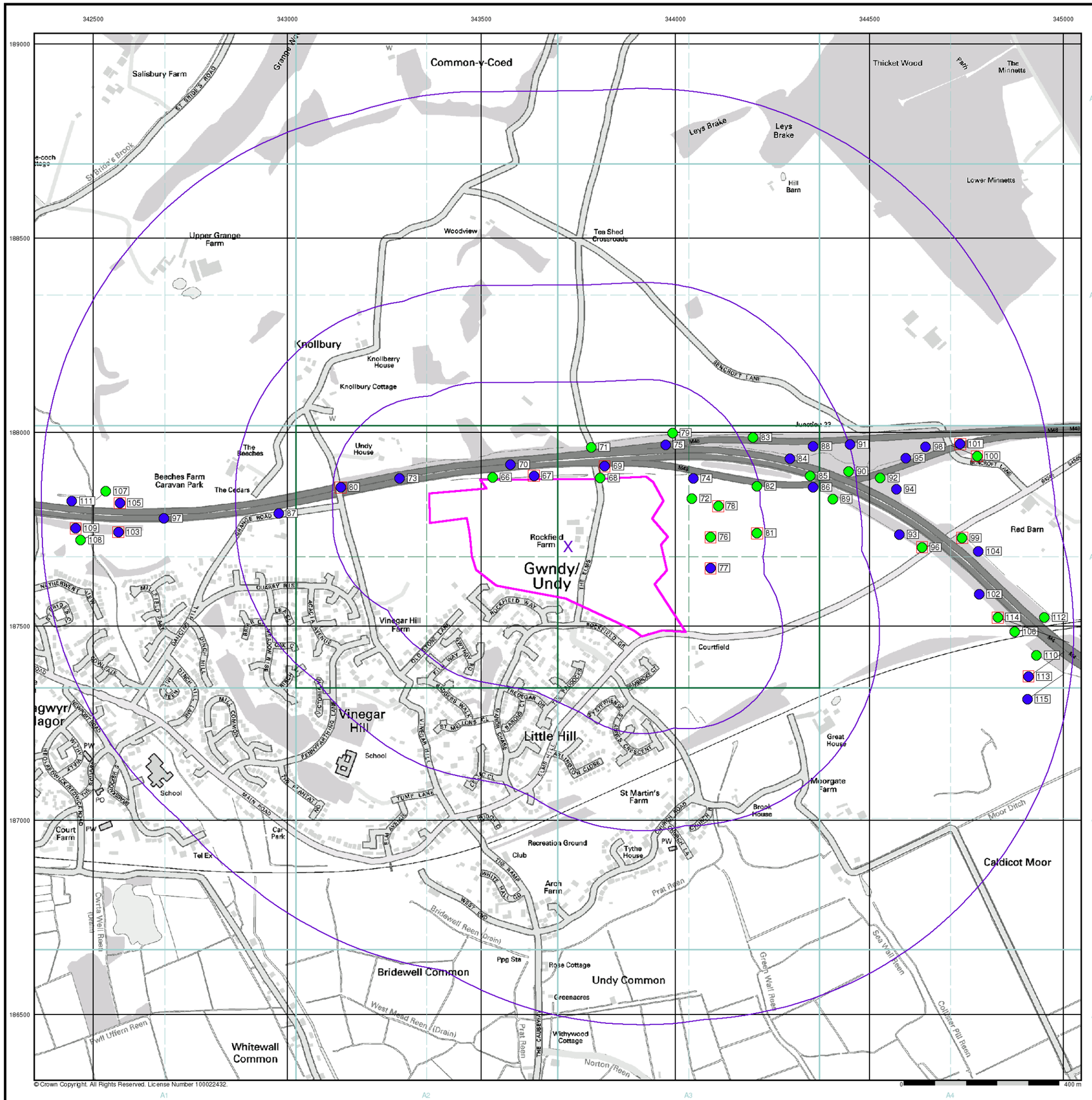


Intégral Géotechnique

General

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

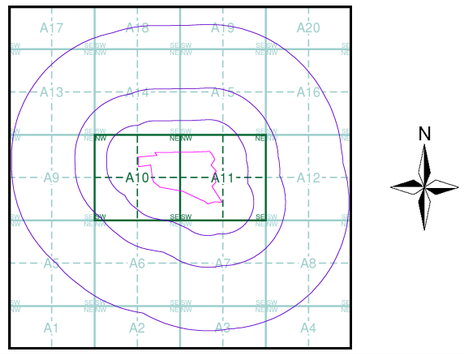
Agency and Hydrological (Boreholes)

- 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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Site Details

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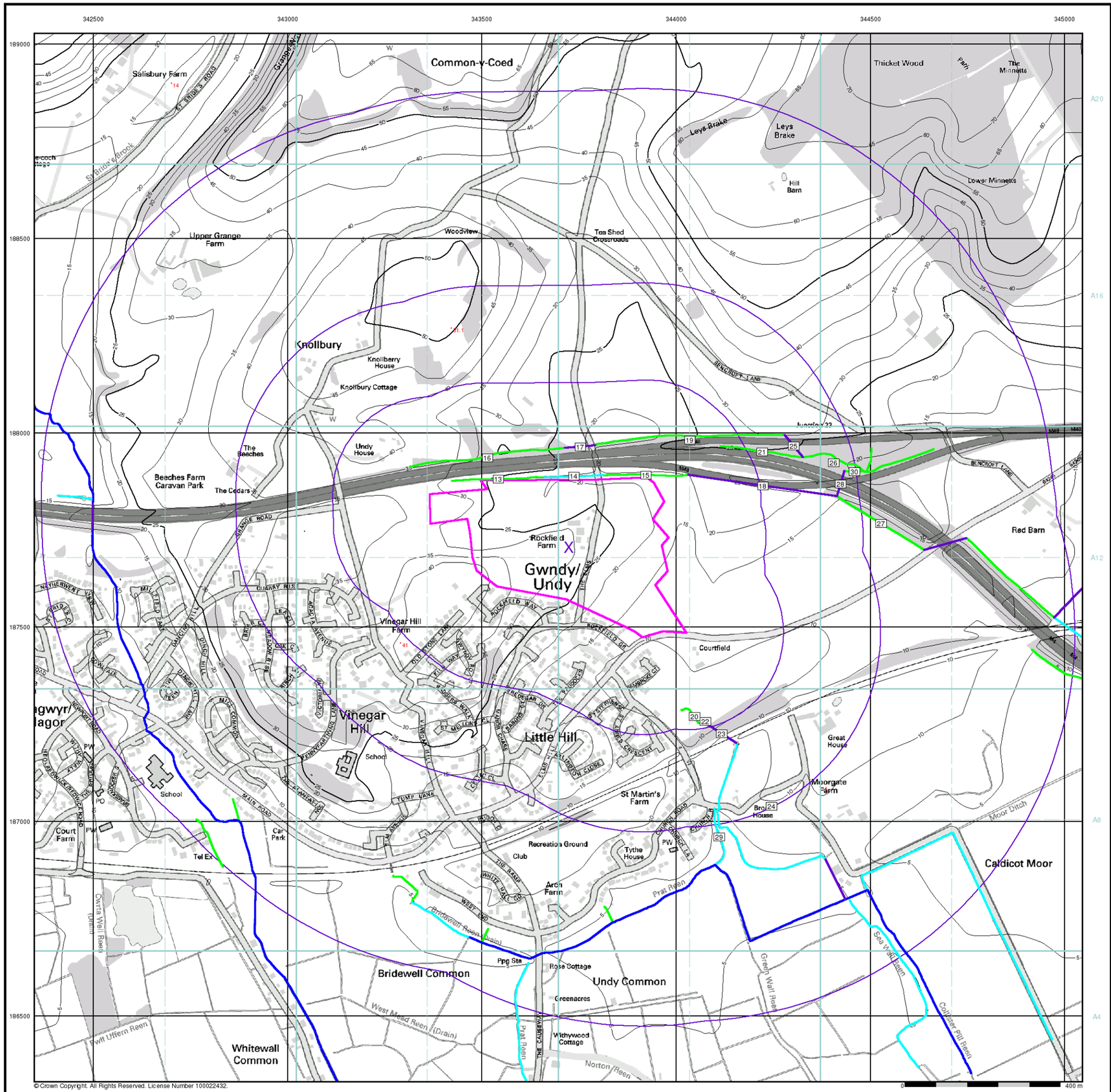


Intégral Géotechnique

General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

Contours (height in metres)

Standard Contour 105 100 95

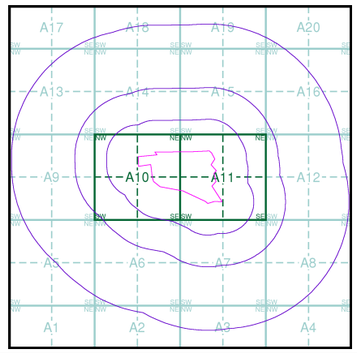
Master Contour

Spot Height *167.3

MLW Mean Low Water

MHW Mean High Water

EA/NRW Detailed River Network Map - Slice A



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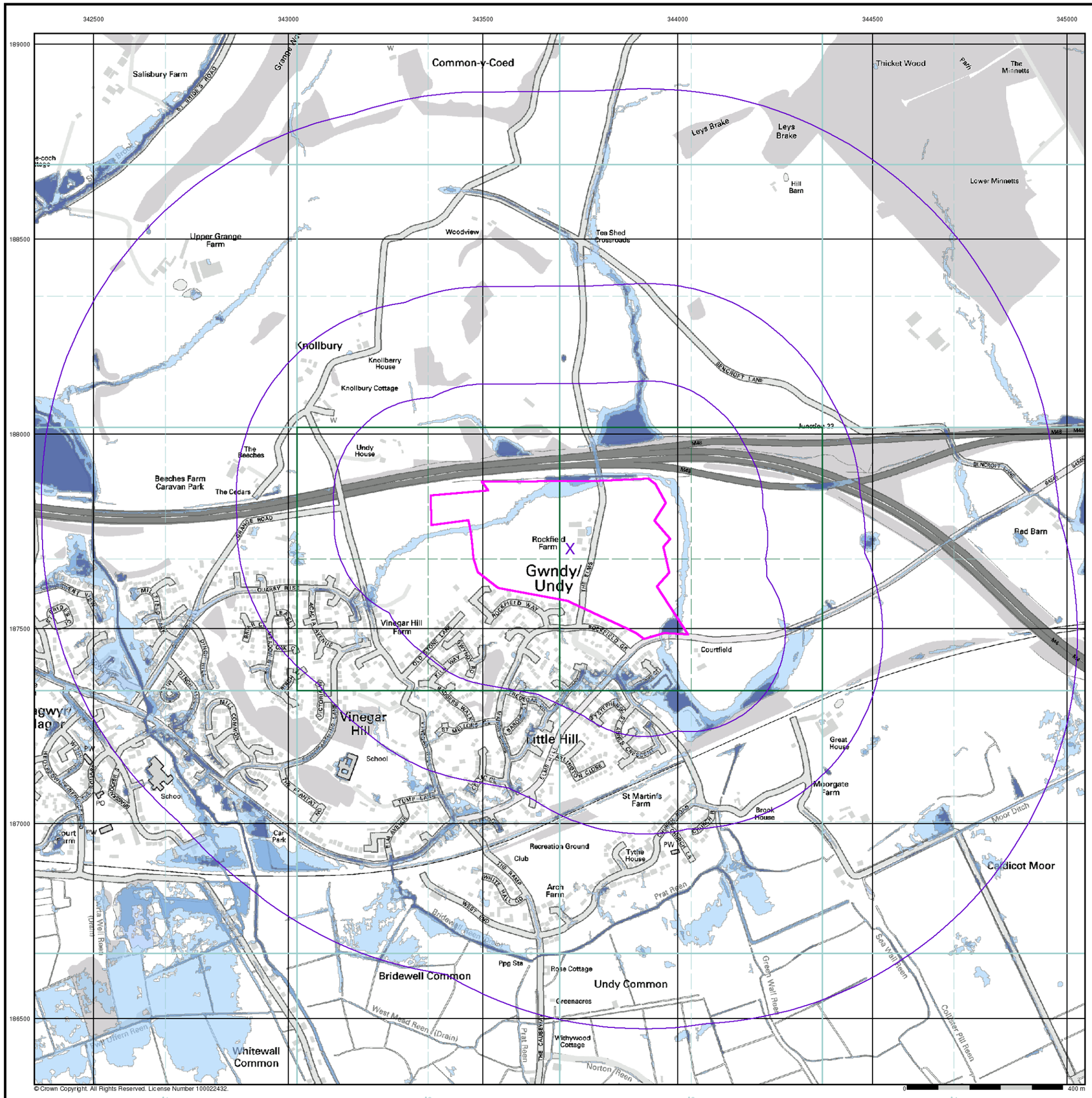


Intégral Géotechnique

General

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

Risk of Flooding from Surface Water

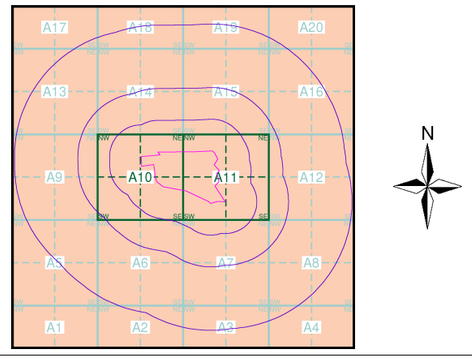
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

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



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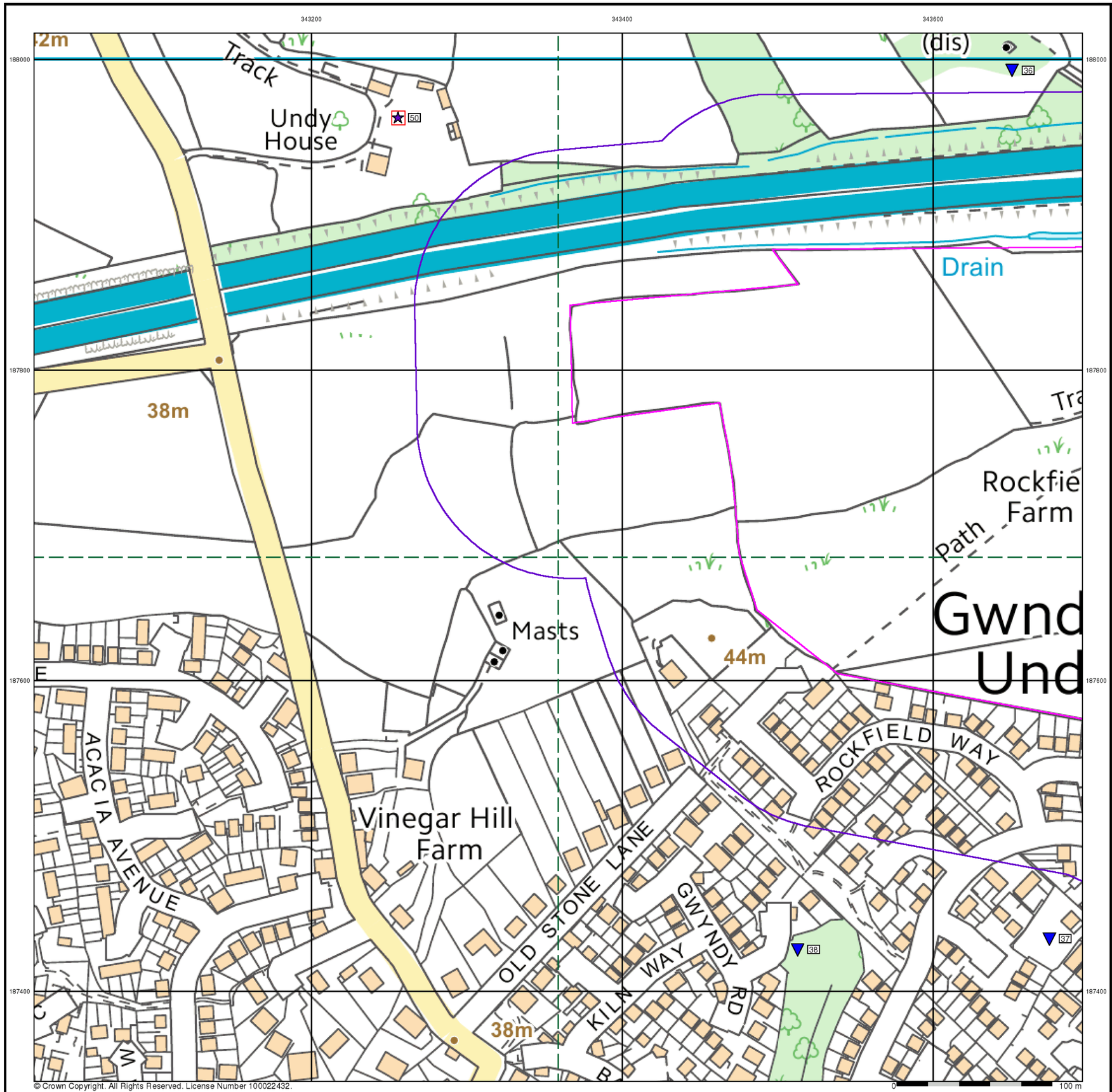


Intégral Géotechnique

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

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

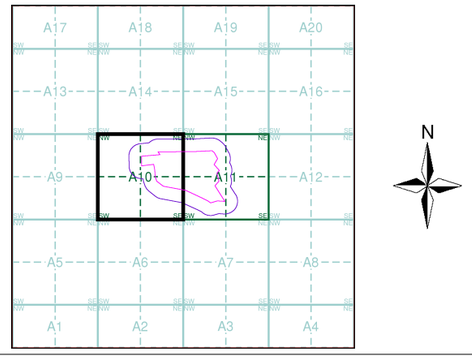
Waste

- 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
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Segment A10



Order Details

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National Grid Reference:	343720, 187710
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Site Area (Ha):	16.73

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark® Information Group
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Web: www.envirocheck.co.uk

343800 344000 344200

188000 187800 187600 187400

M48 M48 Tk 18m Path Path Track THE ELMS ROCKFIELD GR DDOCKS EMBROKE CT Courtfield Earthwork 9m 9m 35

0 100 m

Intégral Géotechnique

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

Geological

BGS Recorded Mineral Site

Industrial Land Use

Contemporary Trade Directory Entry
Fuel Station Entry

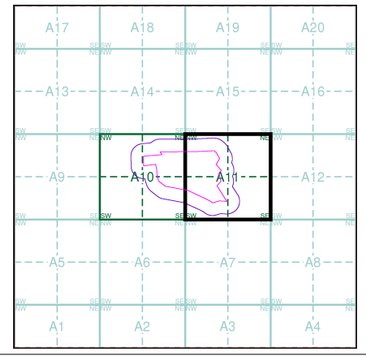
Waste

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
Registered Landfill Site
Registered Landfill Site (Location)
Registered Landfill Site (Point Buffered to 100m)
Registered Landfill Site (Point Buffered to 250m)
Registered Waste Transfer Site (Location)
Registered Waste Transfer Site
Registered Waste Treatment or Disposal Site (Location)
Registered Waste Treatment or Disposal Site

Hazardous Substances

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

Site Sensitivity Map - Segment A11



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Site Details

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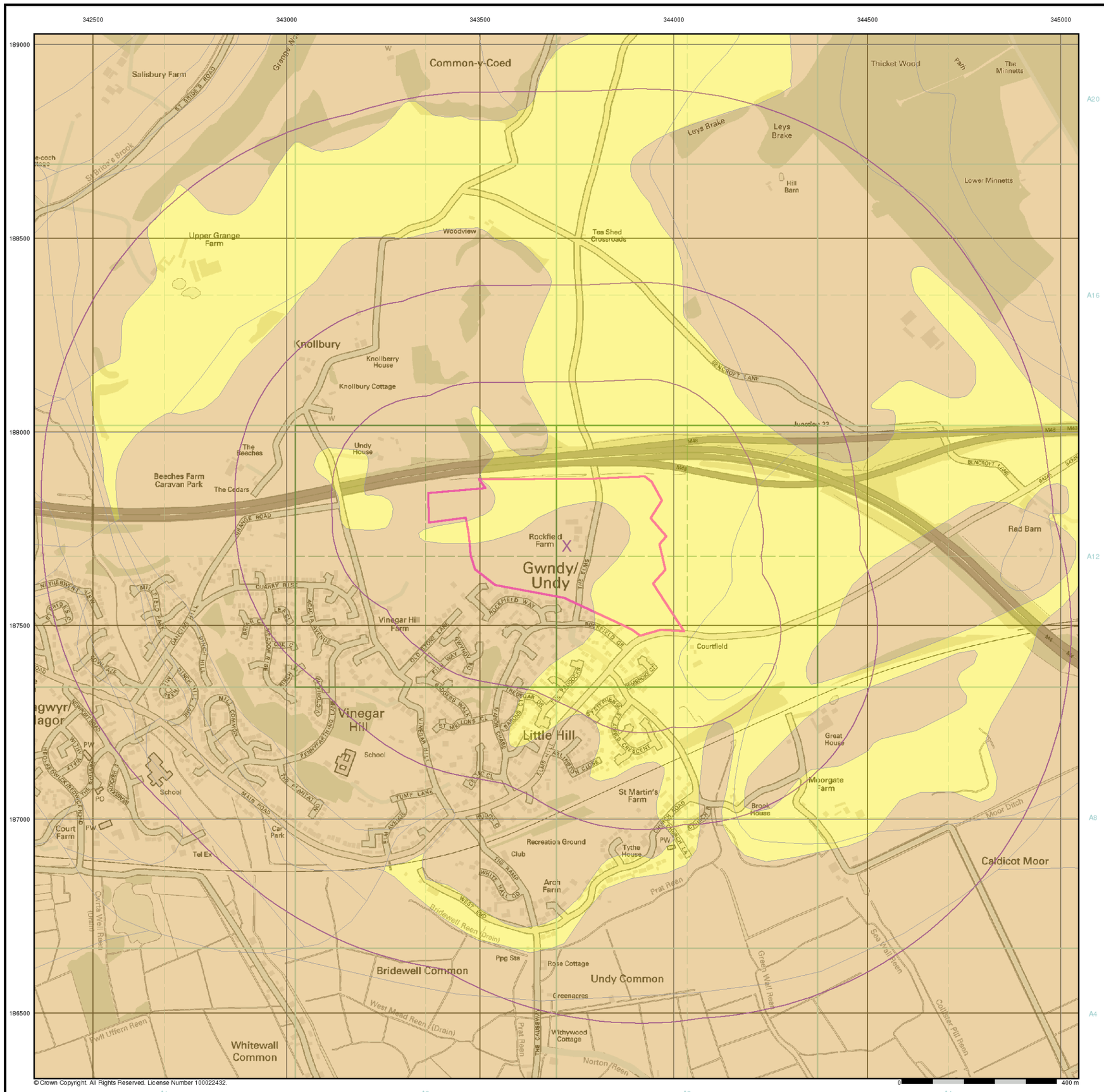


Intégral Géotechnique

General

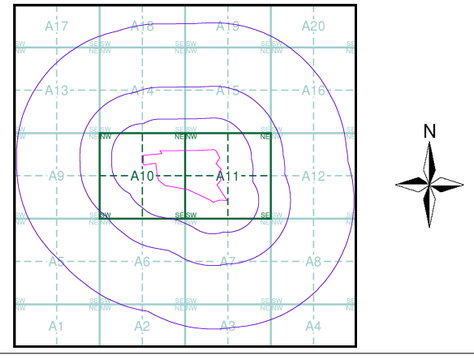
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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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Slice:	A
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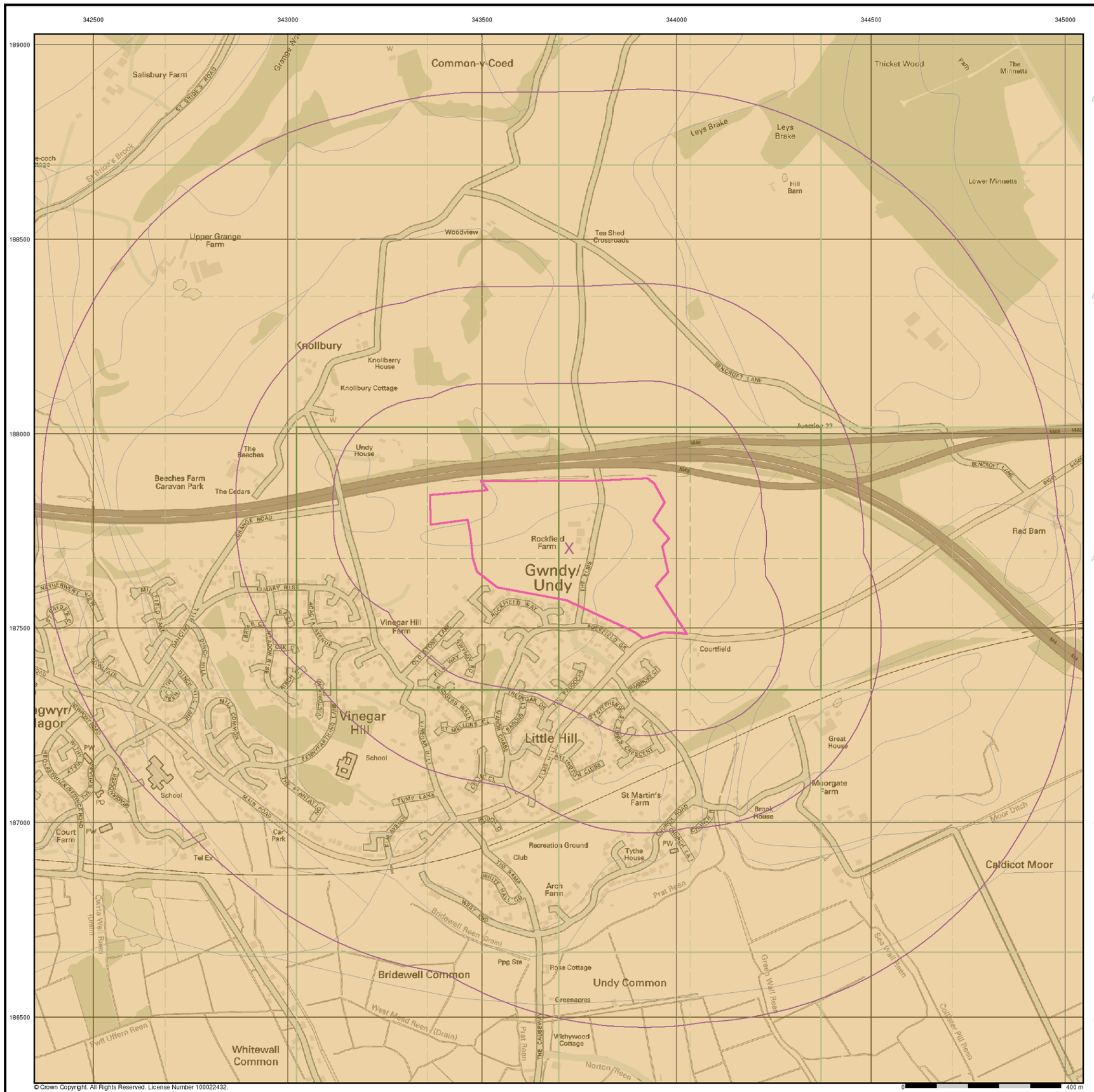


Intégral Géotechnique

General

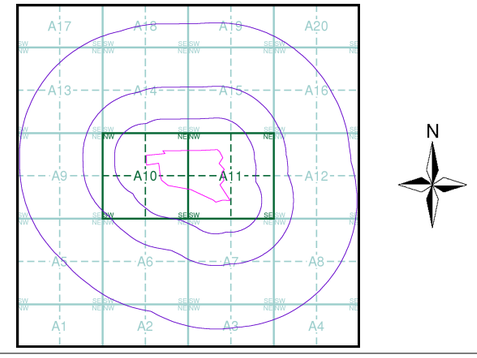
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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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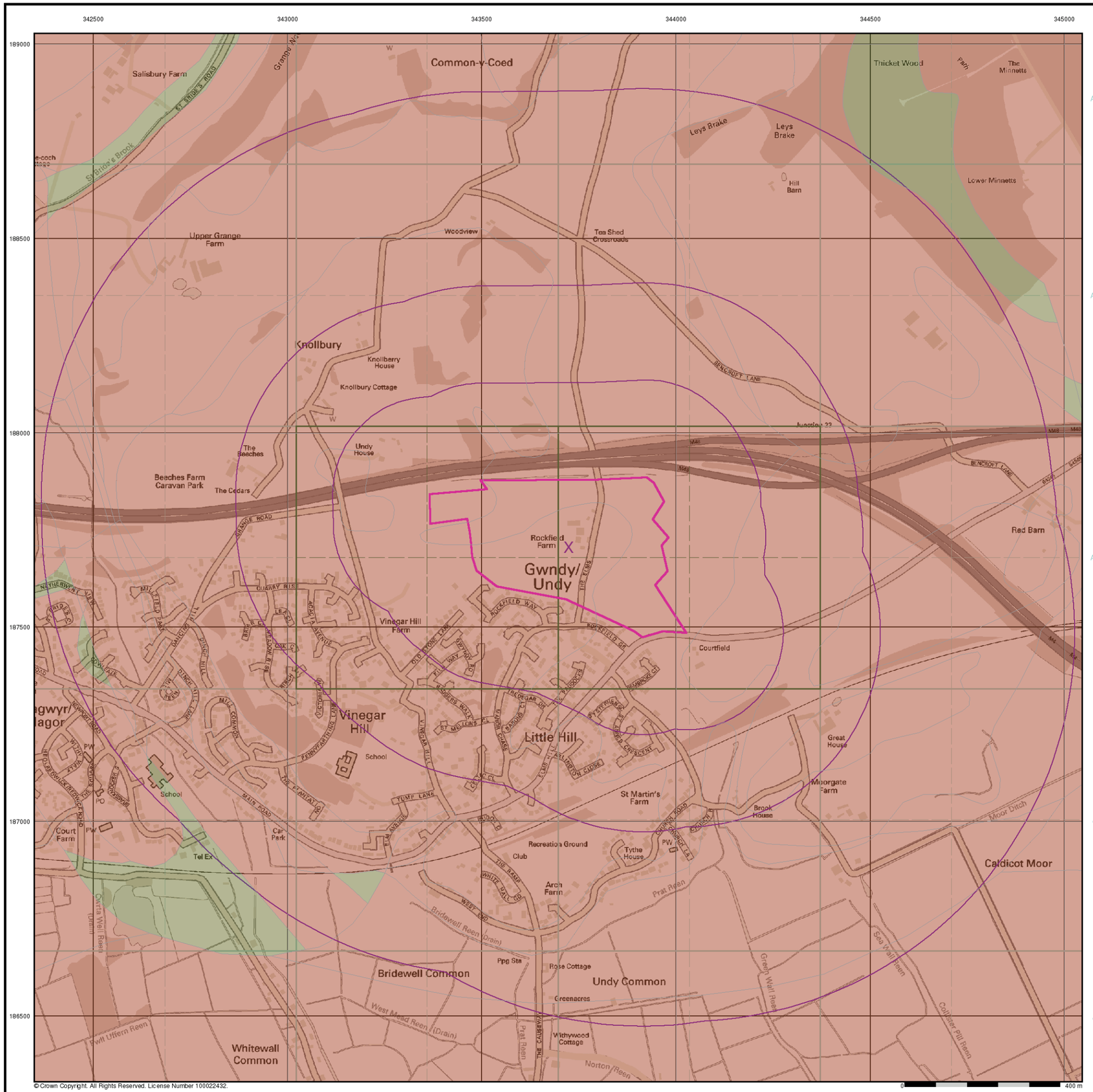


Intégral Géotechnique

General

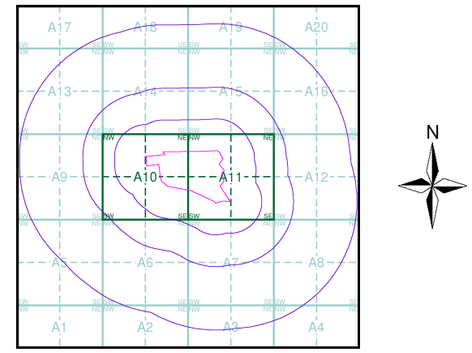
Specified Site | Specified Buffer(s) | X Bearing Reference Point

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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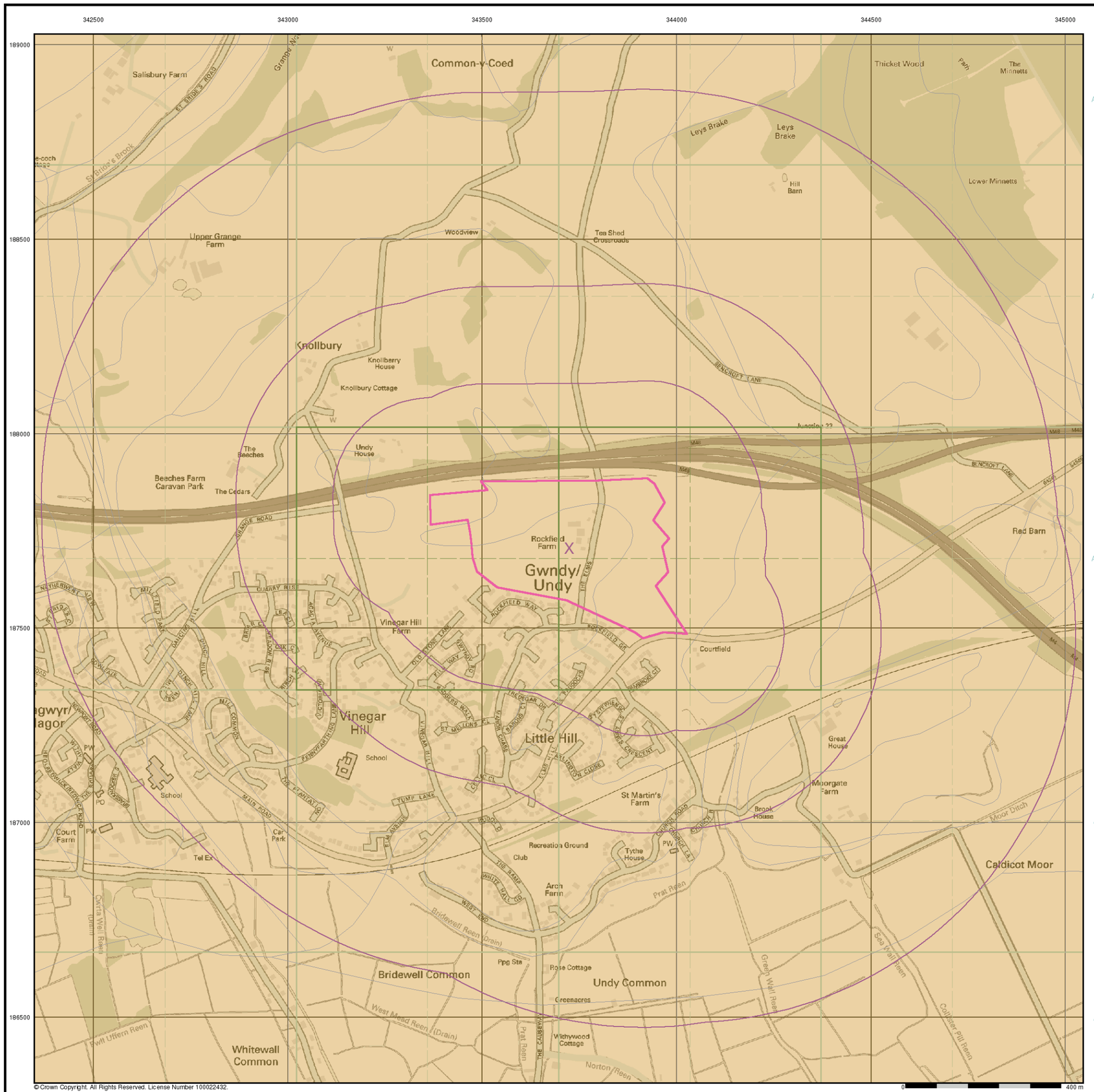


Intégral Géotechnique

General

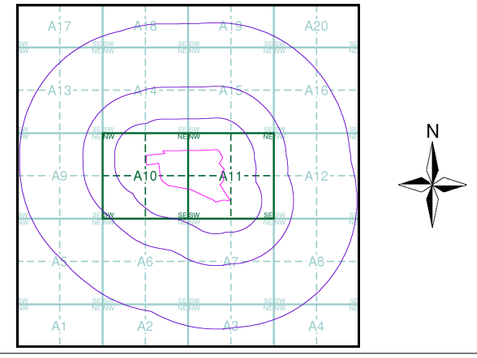
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- < 150
- 150 - 300
- 300 - 600
- 600 - 900
- > 900

Estimated Soil Chemistry Lead - Slice A



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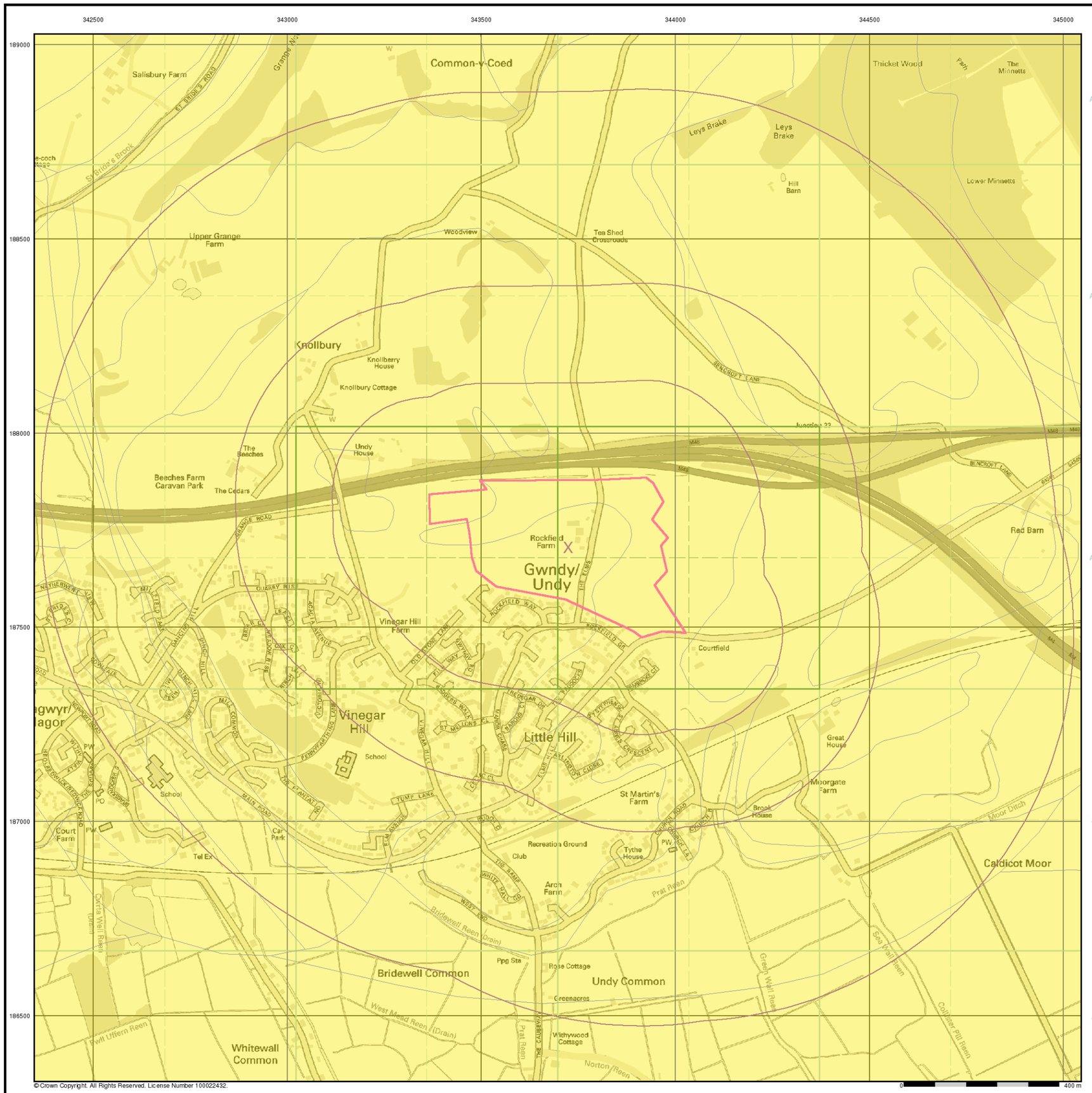


Intégral Géotechnique

General

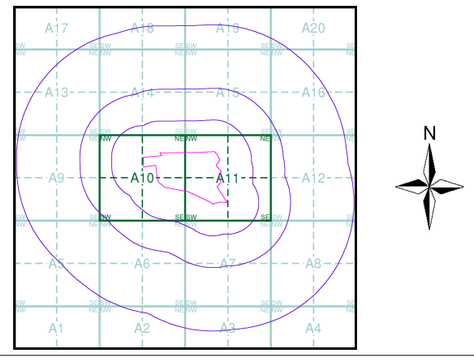
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

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

Estimated Soil Chemistry Nickel - Slice A



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

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

1:10,000 Raster Mapping

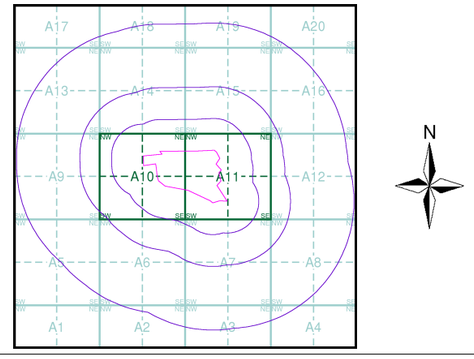
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community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

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:10,560	1887	3
Monmouthshire	1:10,560	1902	4
Monmouthshire	1:10,560	1922	5
Monmouthshire	1:10,560	1954	6
Ordnance Survey Plan	1:10,000	1964	7
Ordnance Survey Plan	1:10,000	1970 - 1971	8
Newport	1:10,000	1983	9
Ordnance Survey Plan	1:10,000	1985 - 1989	10
10K Raster Mapping	1:10,000	2006	11
VectorMap Local	1:10,000	2015	12

Historical Map - Slice A



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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 Velocity of the current, width of river bed, depth of river

Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

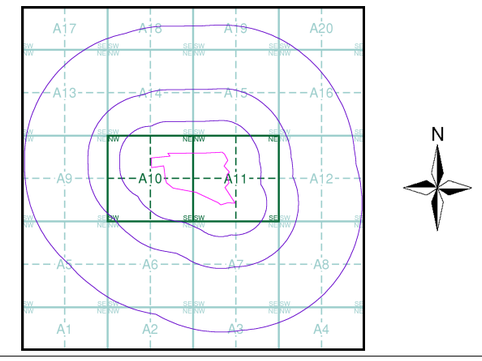
- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Direction and velocity of current
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

Intégral Géotechnique

Historical Mapping & Photography included:

Russian Map - Slice A



Order Details

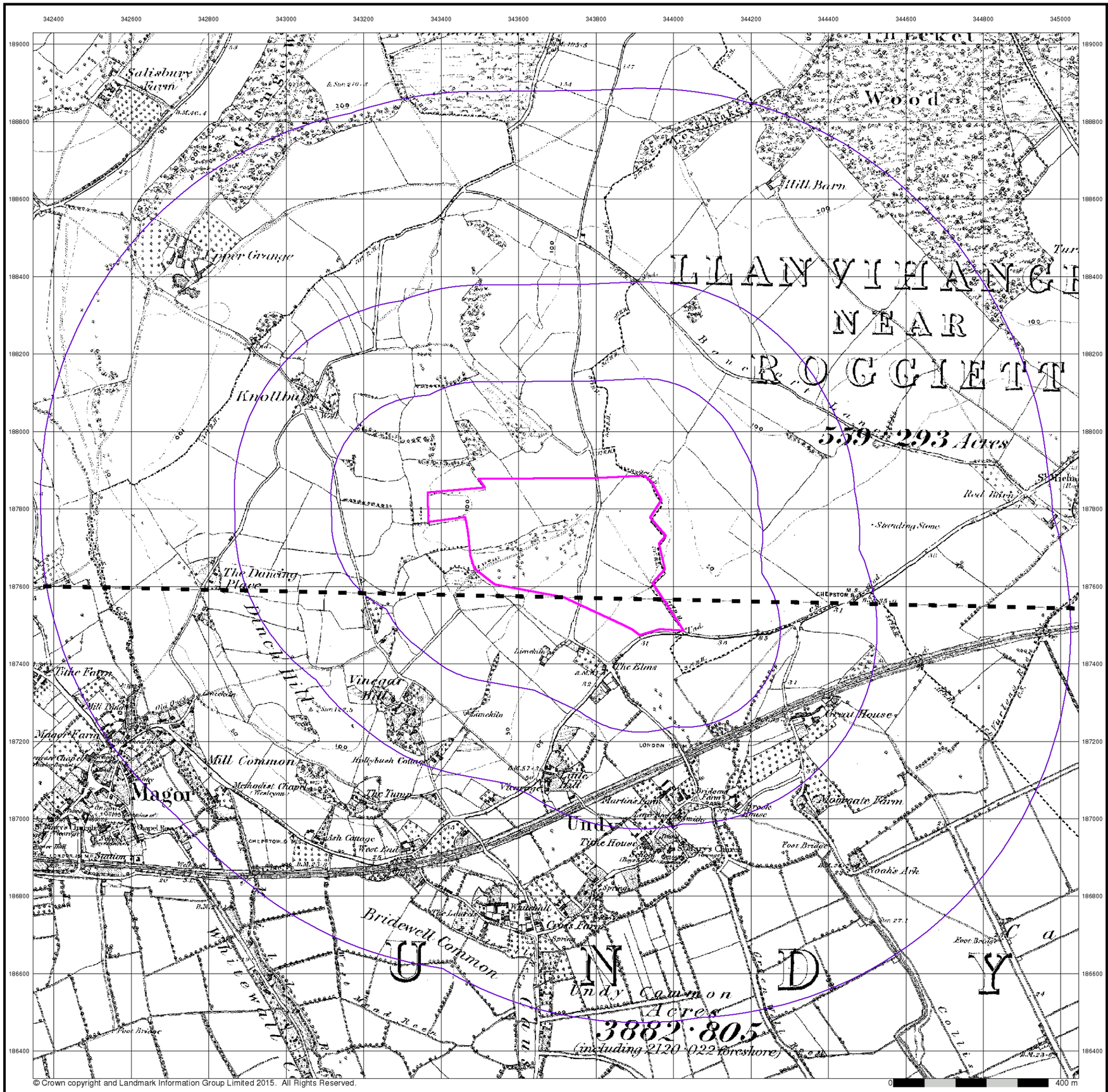
Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark Information Group

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



Intégral Géotechnique

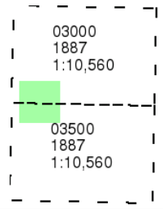
Monmouthshire

Published 1887

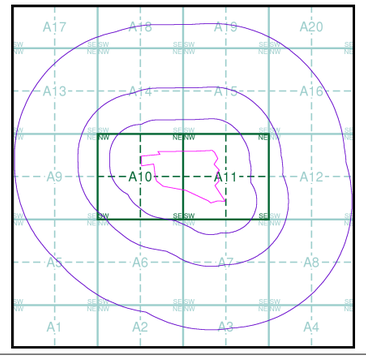
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Slice:	A
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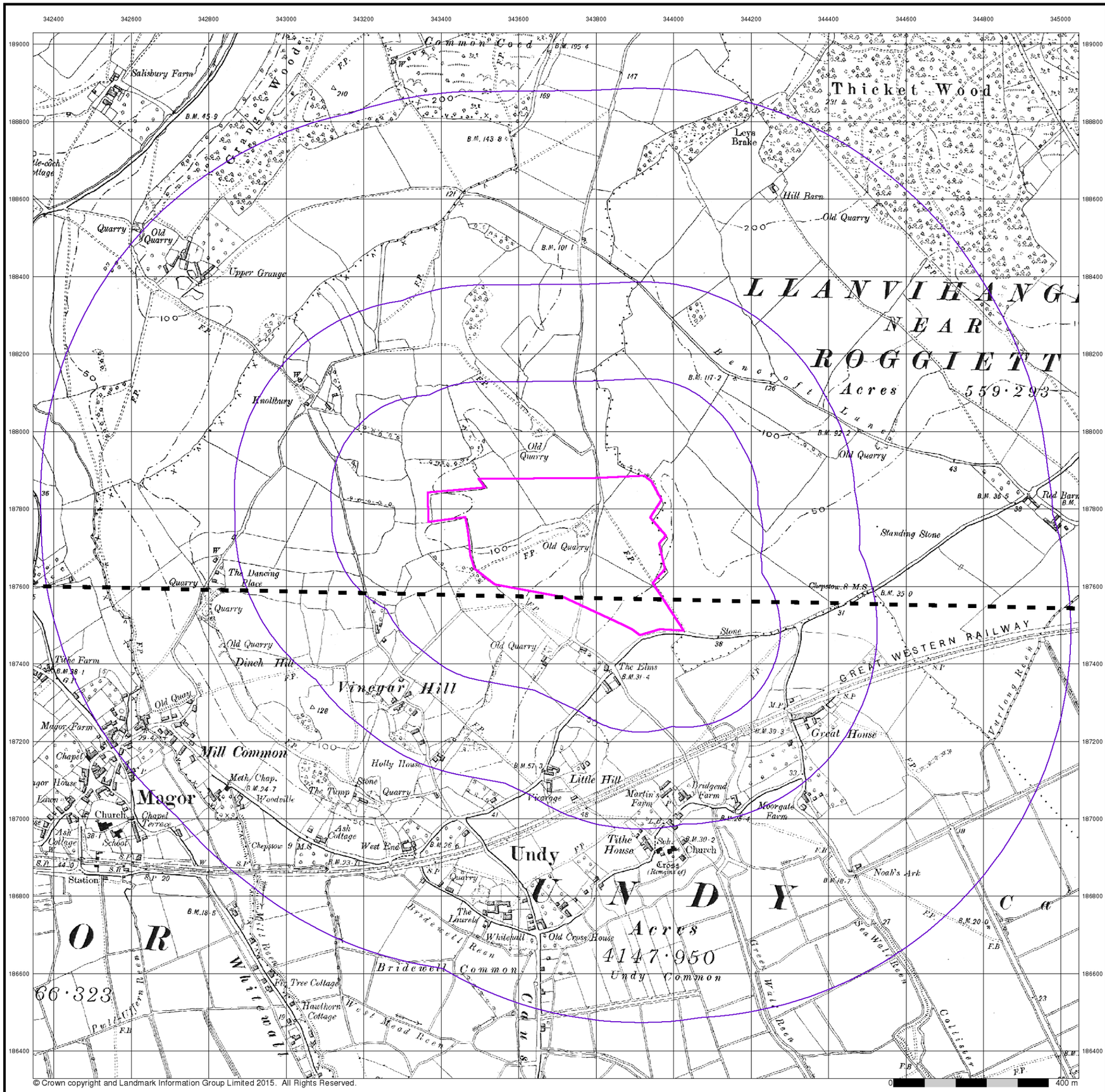


Intégral Géotechnique

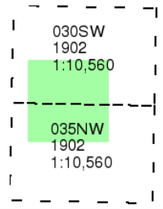
Monmouthshire

Published 1902

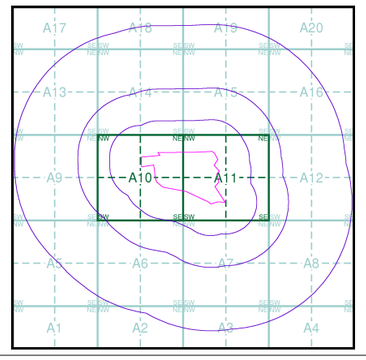
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
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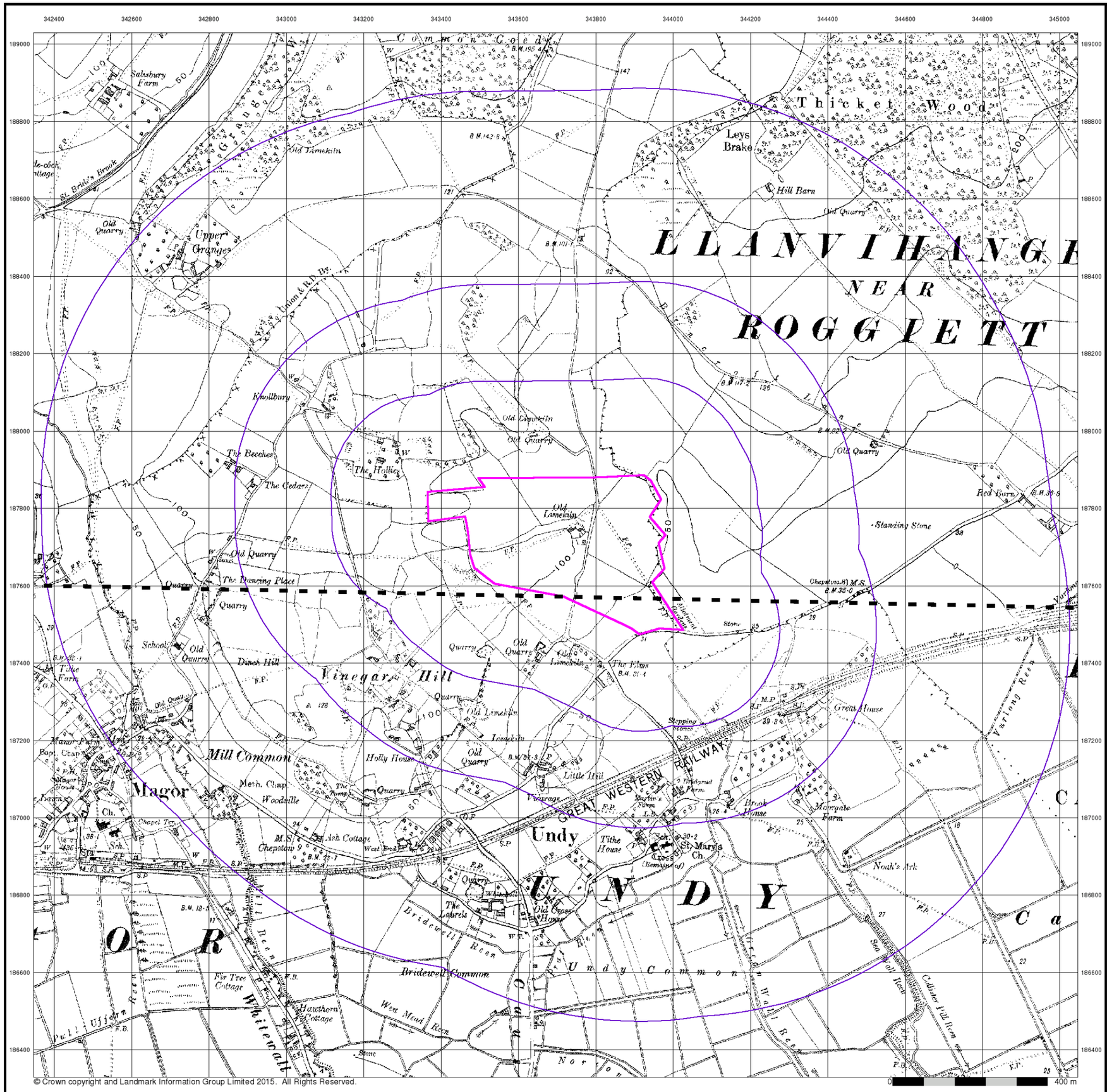


Intégral Géotechnique

Monmouthshire

Published 1922

Source map scale - 1:10,560

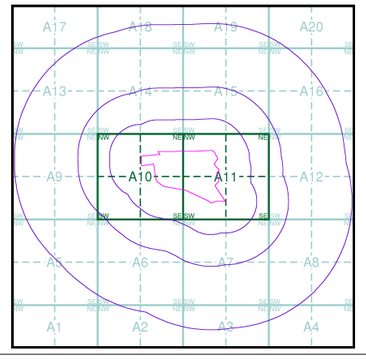
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

03000
1922
1:10,560

03500
1922
1:10,560

Historical Map - Slice A



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

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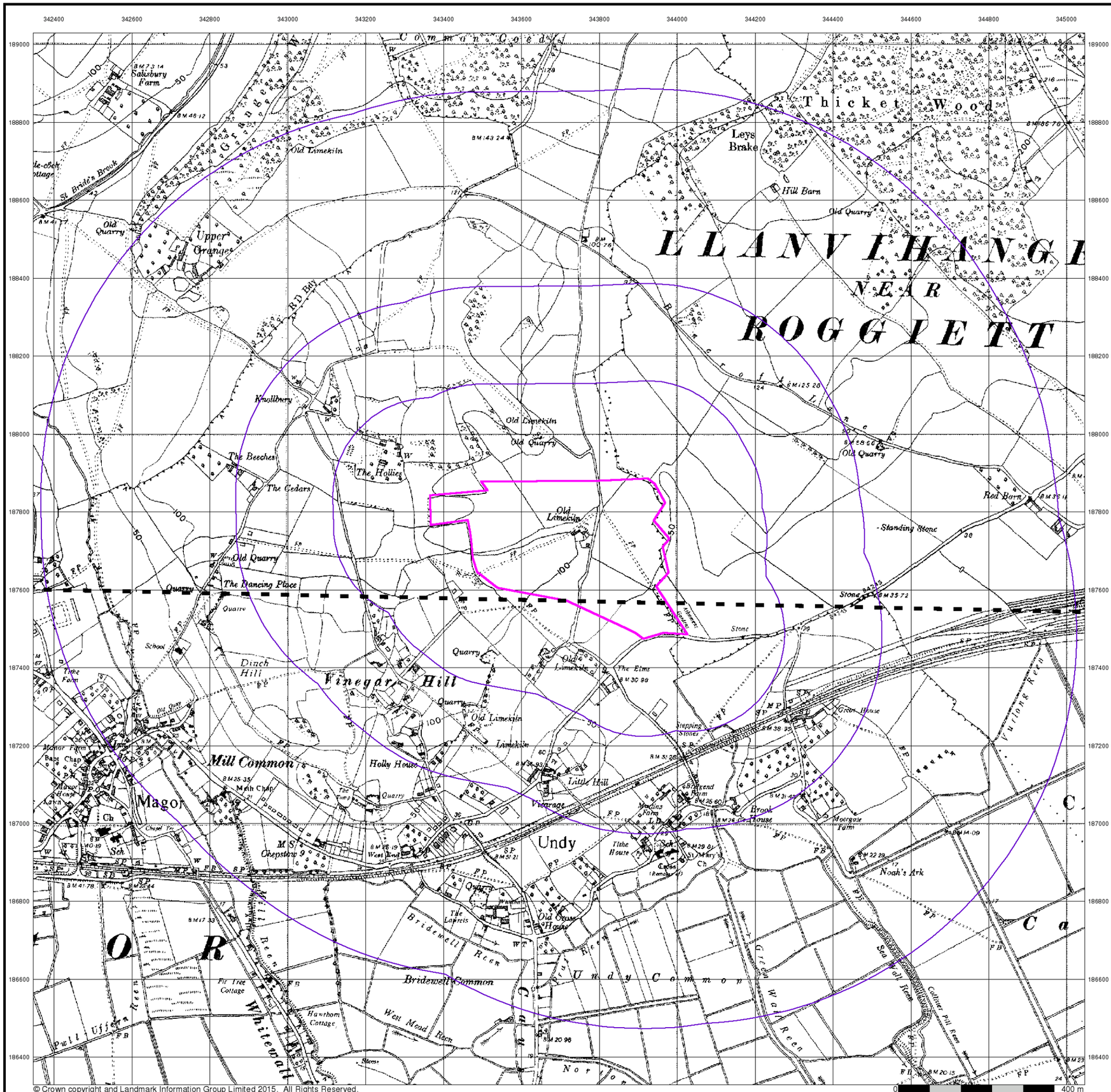


0 400 m

Intégral Géotechnique

Monmouthshire

Published 1954

Source map scale - 1:10,560

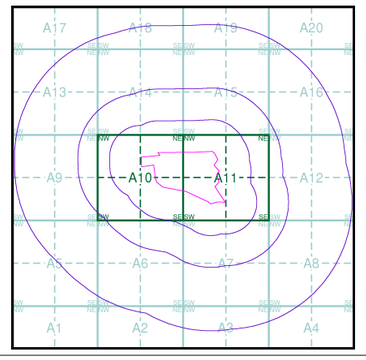
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

03000
1954
1:10,560

03500
1954
1:10,560

Historical Map - Slice A



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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Tel: 0844 844 9952
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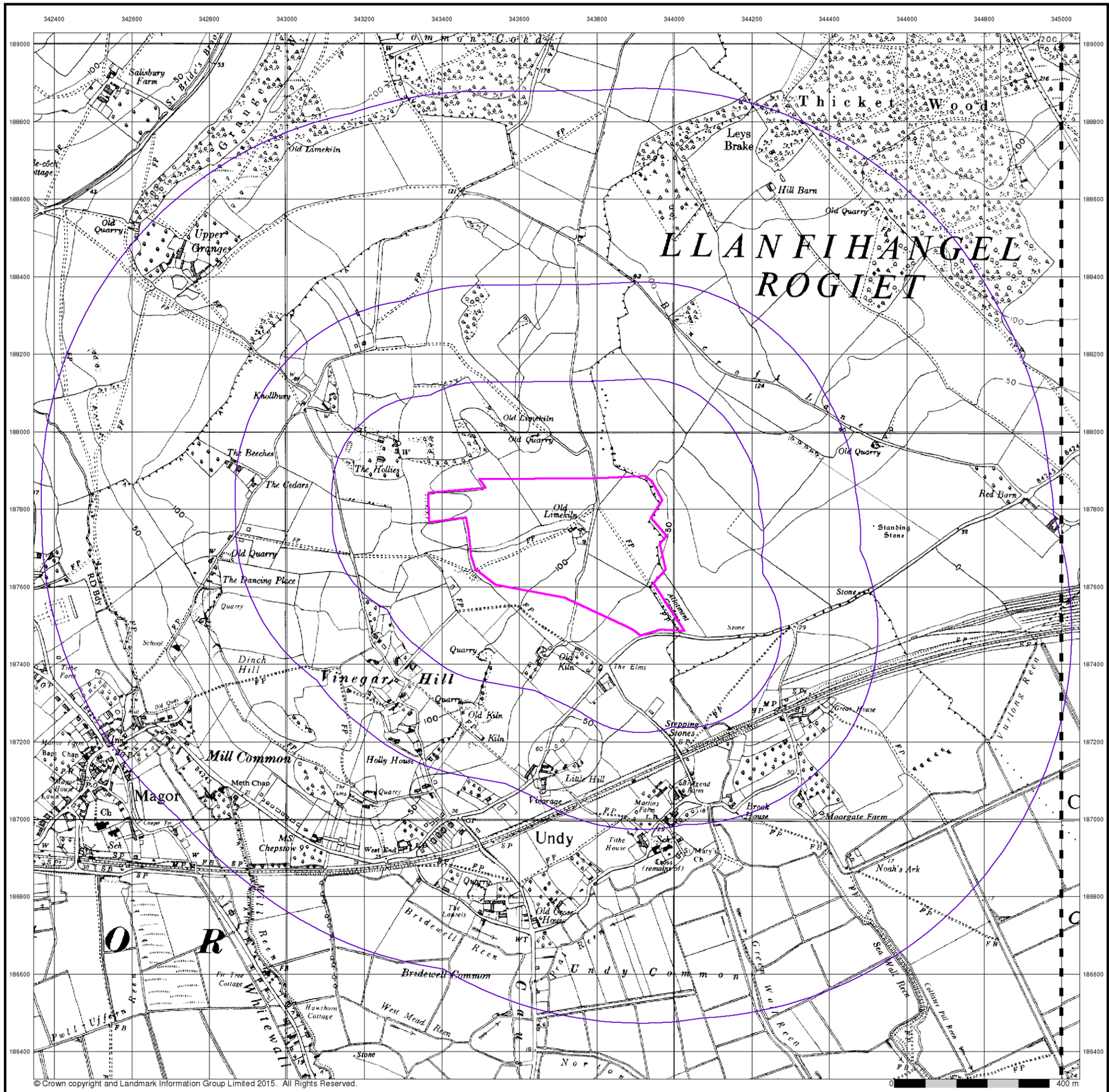


Intégral Géotechnique

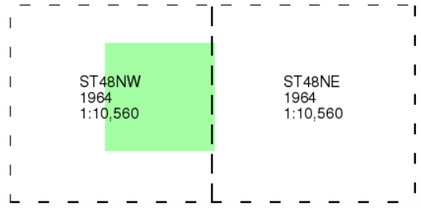
Ordnance Survey Plan

Published 1964

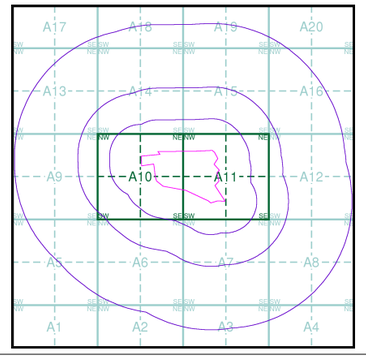
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark Information Group
Tel: 0844 844 9952
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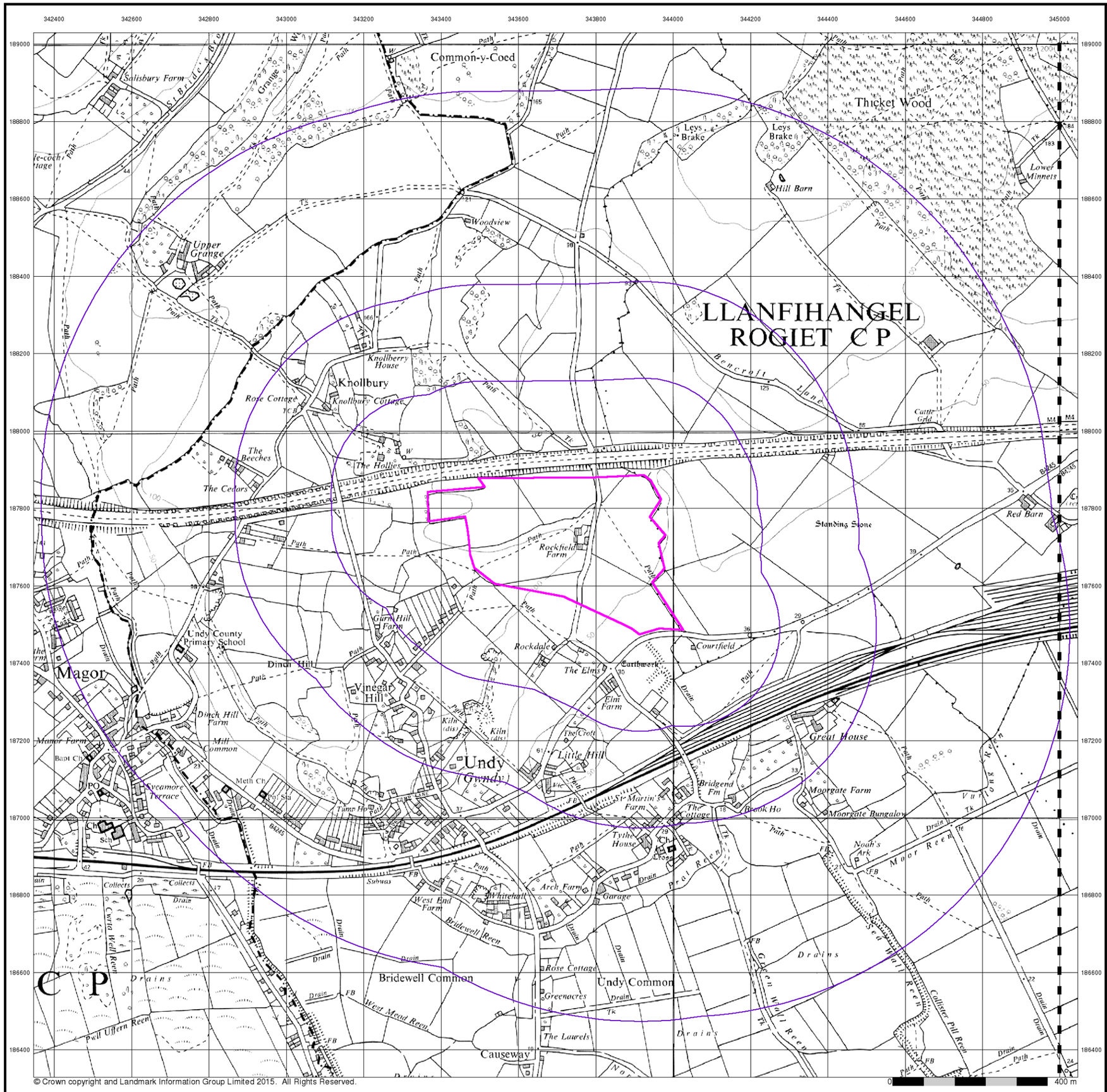
Web: www.envirocheck.co.uk



Intégral Géotechnique

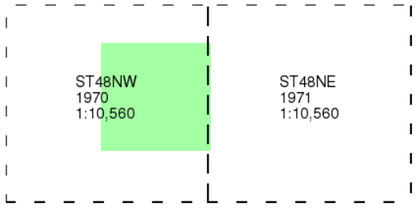
Ordnance Survey Plan

Published 1970 - 1971

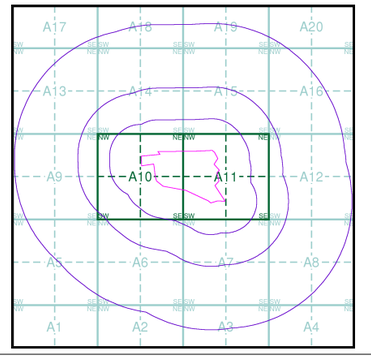
Source map scale - 1:10,000

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:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

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Landmark Information Group
Tel: 0844 844 9952
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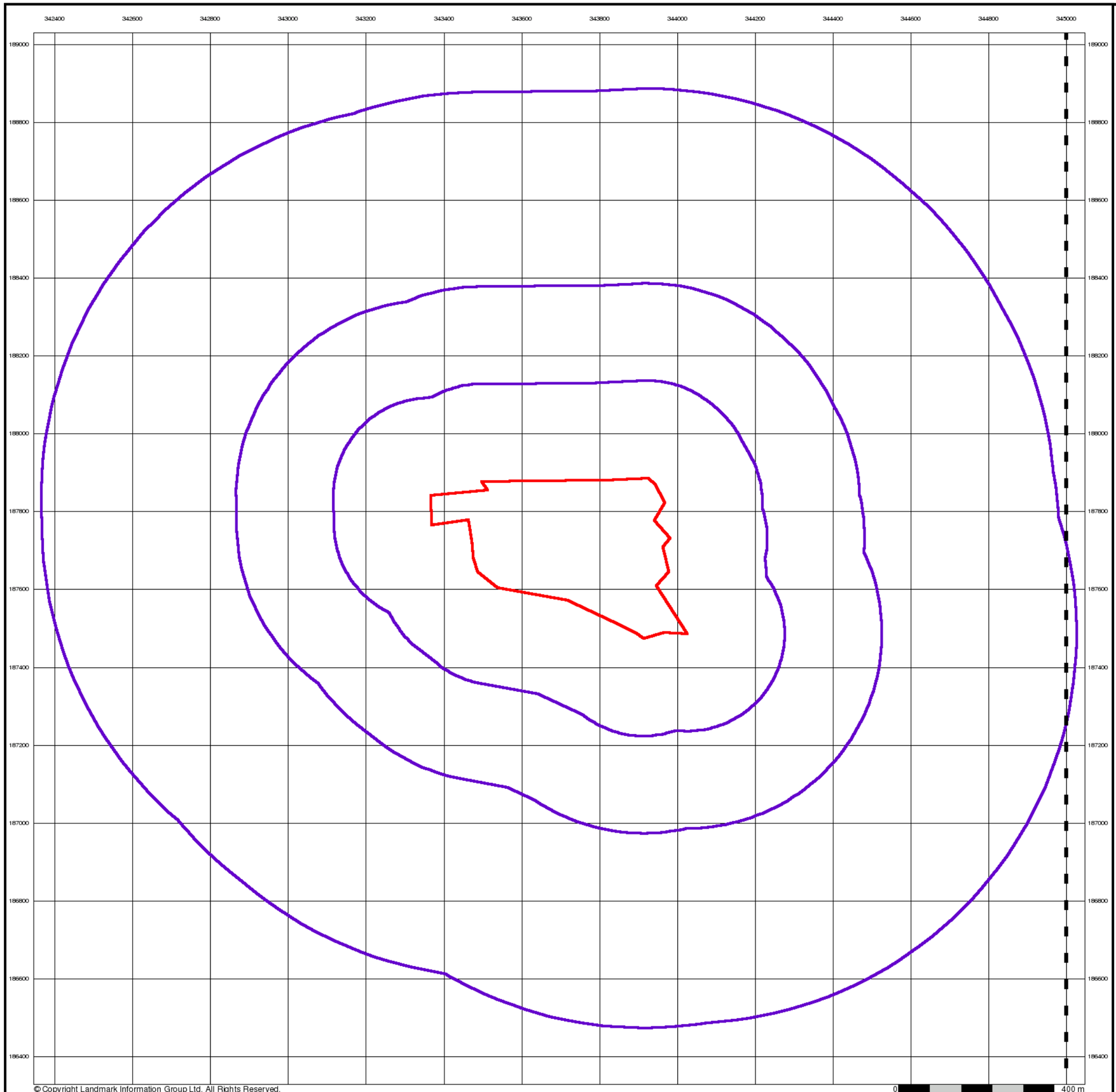


Intégral Géotechnique

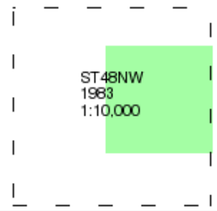
Newport

Published 1983

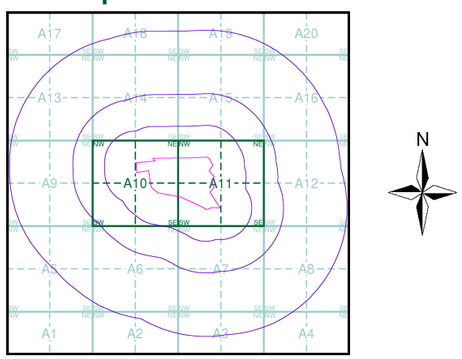
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



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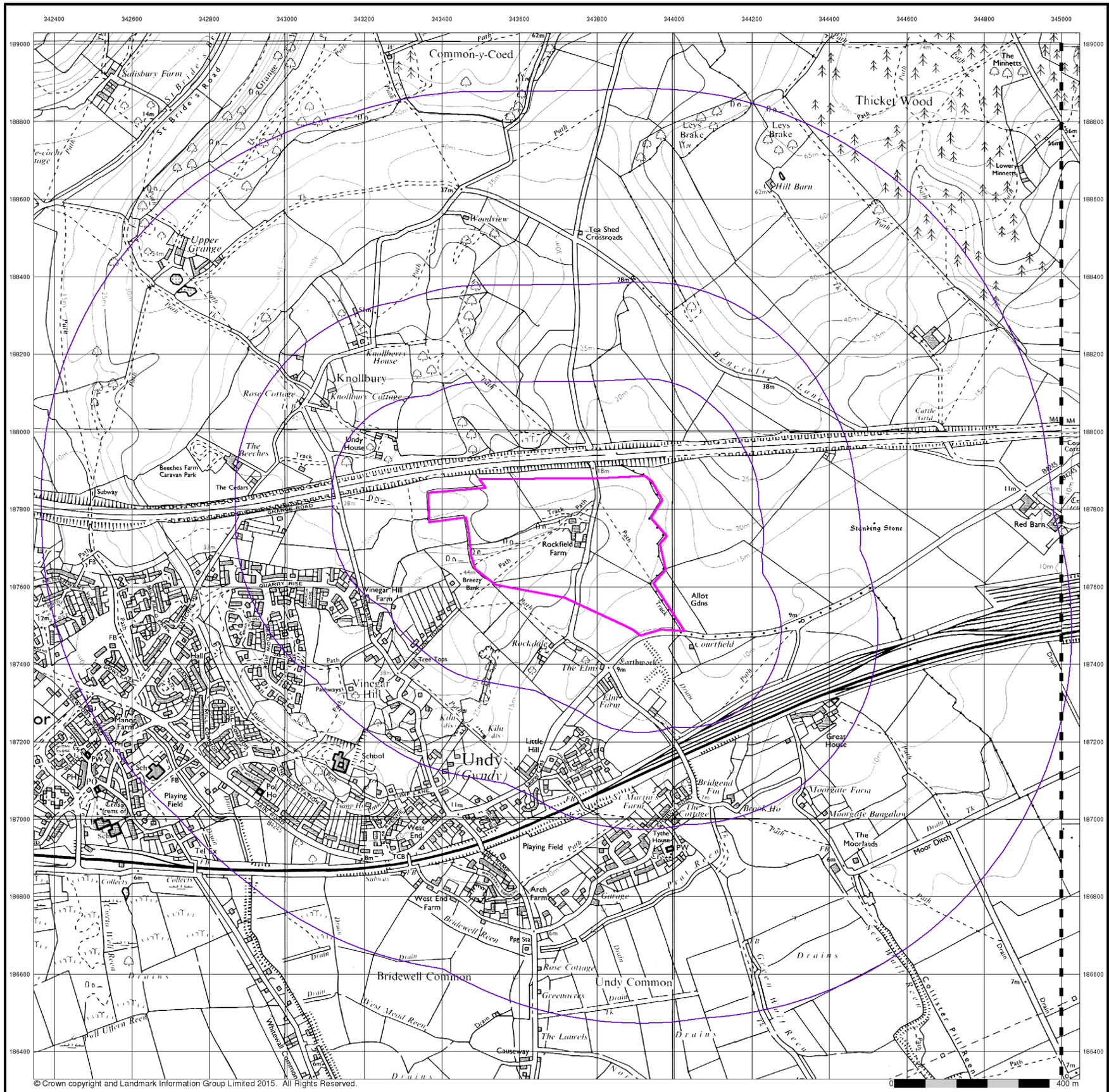

Intégral Géotechnique

Ordnance Survey Plan

Published 1985 - 1989

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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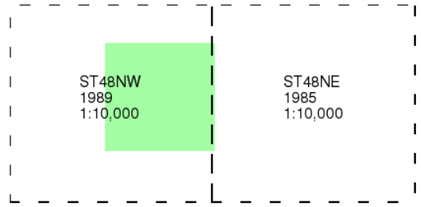
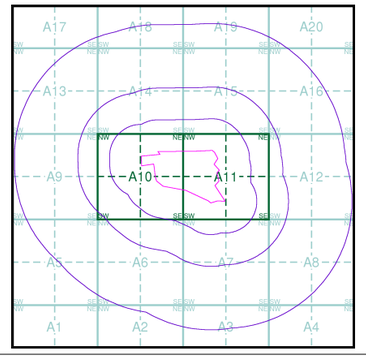


Historical Map - Slice A



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Site Area (Ha):	16.73
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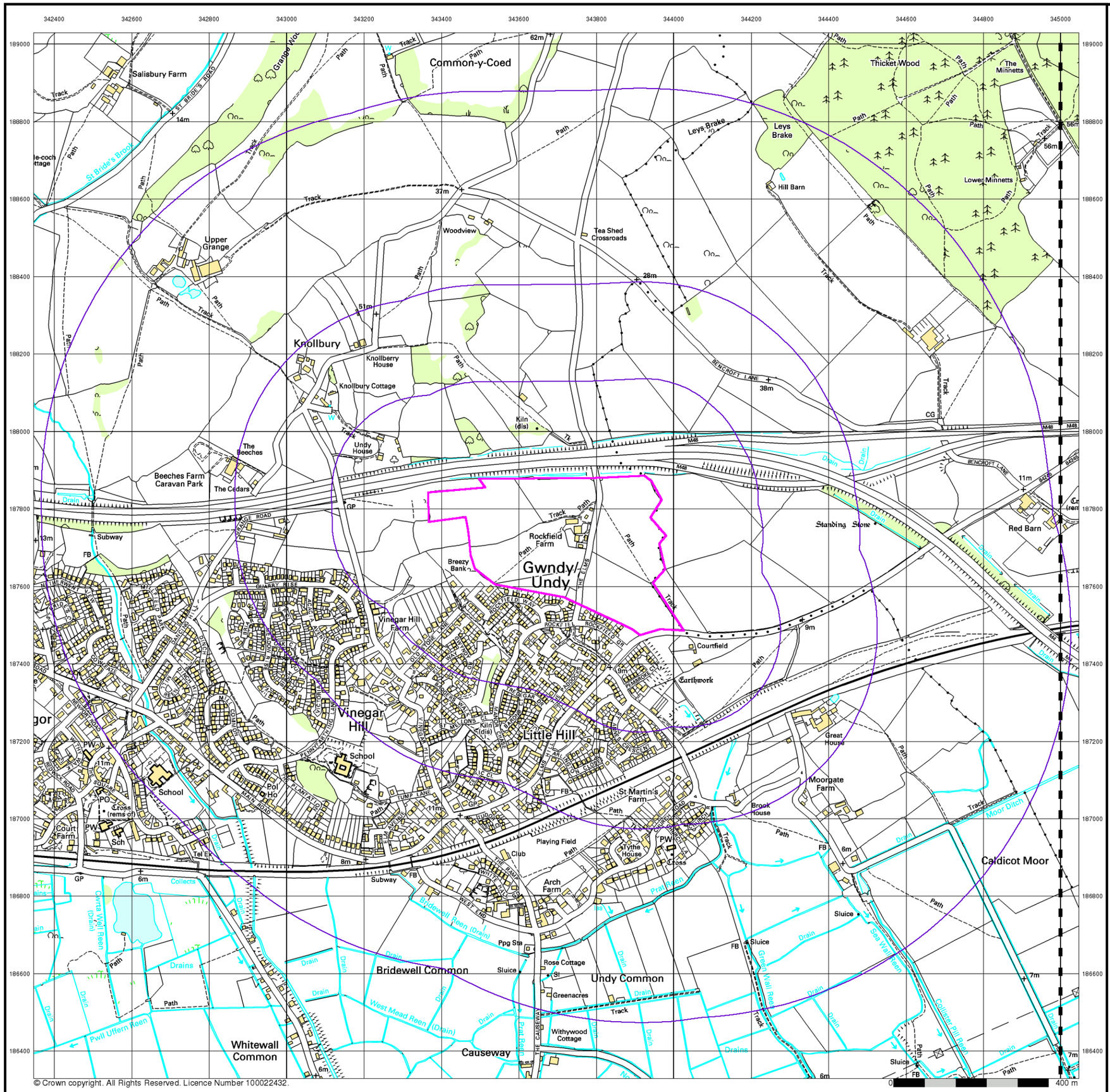


0 400 m

Intégral Géotechnique

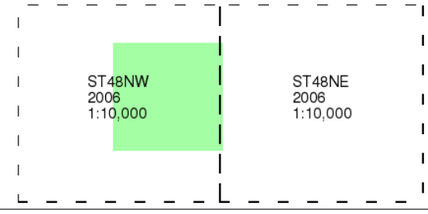
10k Raster Mapping

Published 2006

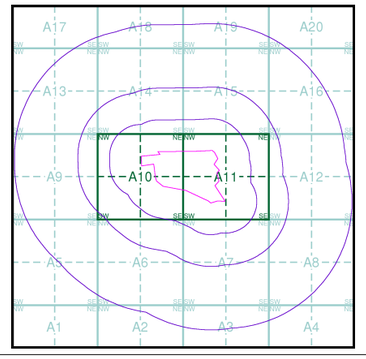
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
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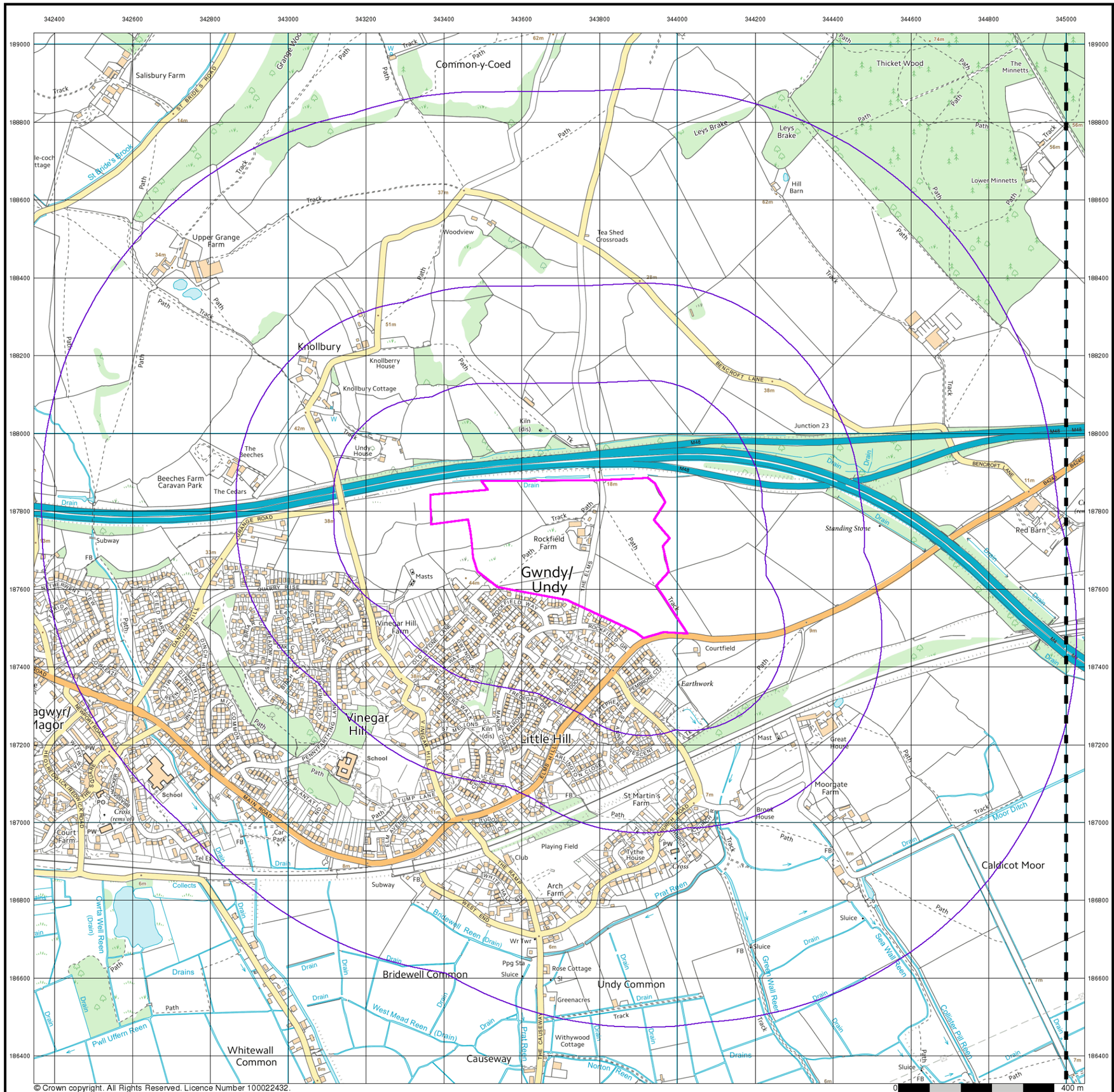


Intégral Géotechnique

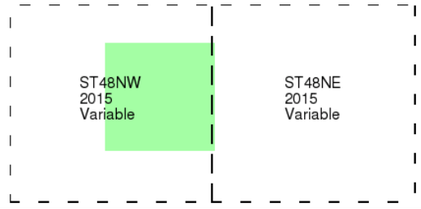
VectorMap Local

Published 2015

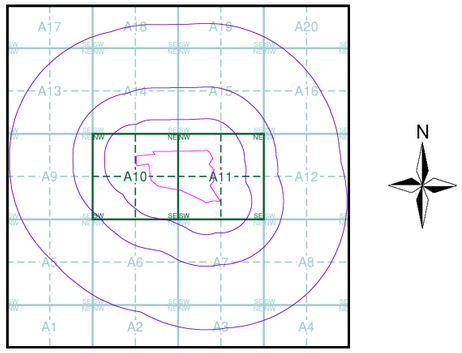
Source map scale - 1:10,000

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



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark Information Group

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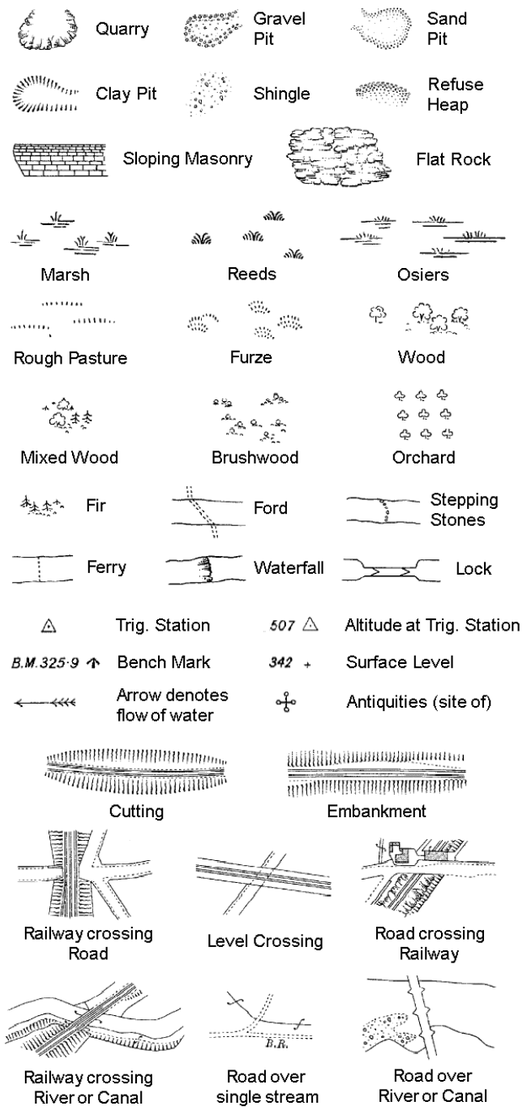
Web: www.envirocheck.co.uk

Historical Mapping Legends

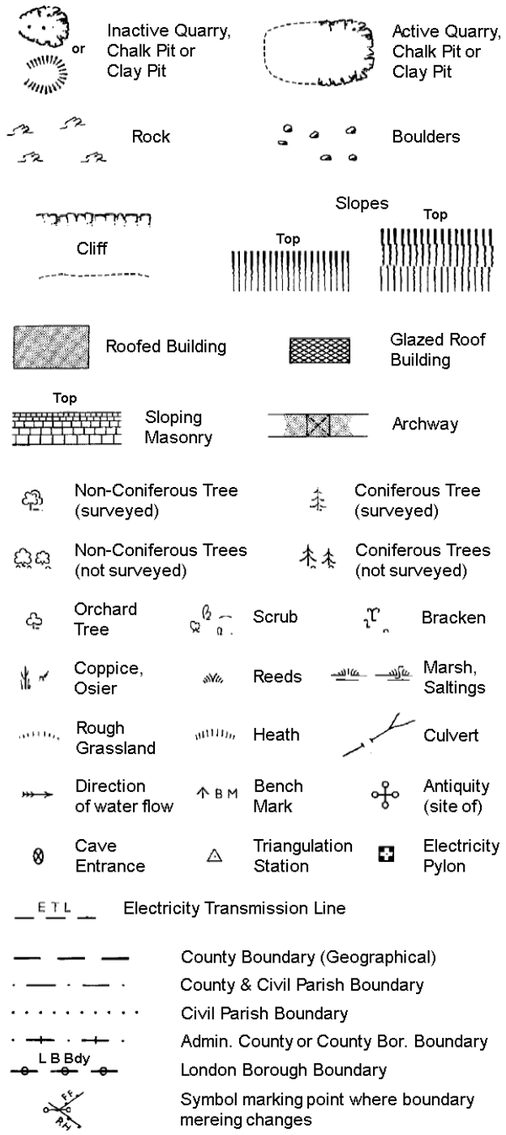
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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

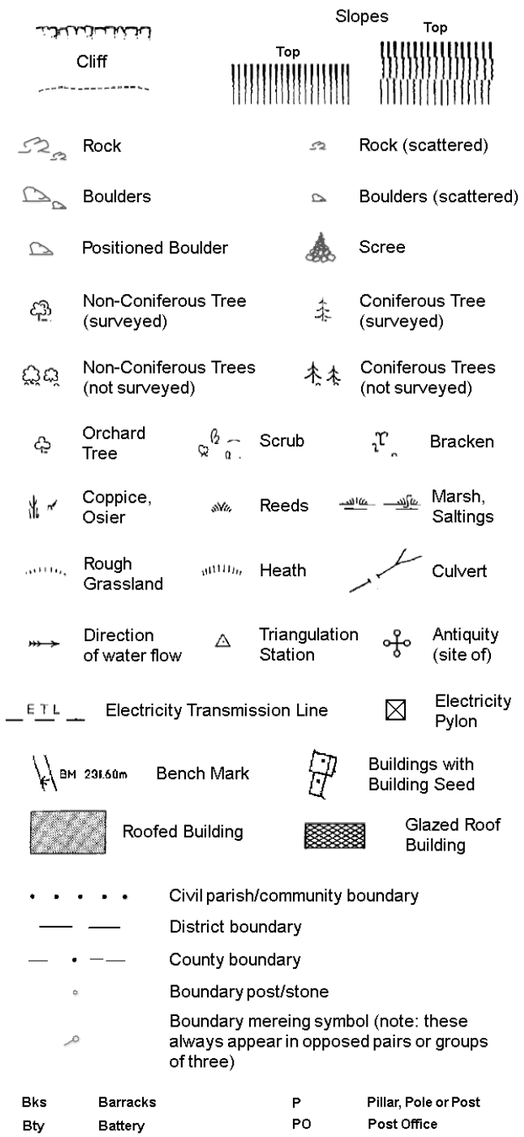
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



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)

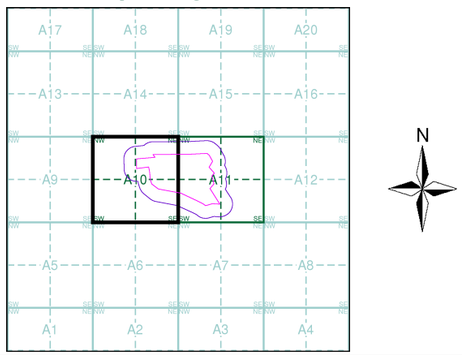
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity 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

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:2,500	1882	2
Monmouthshire	1:2,500	1901	3
Monmouthshire	1:2,500	1921	4
Ordnance Survey Plan	1:2,500	1968	5
Additional SIMs	1:2,500	1981	6
Ordnance Survey Plan	1:2,500	1983	7
Ordnance Survey Plan	1:2,500	1988	8
Additional SIMs	1:2,500	1988	9
Additional SIMs	1:2,500	1990	10
Additional SIMs	1:2,500	1992	11
Large-Scale National Grid Data	1:2,500	1994	12
Large-Scale National Grid Data	1:2,500	1995	13
Large-Scale National Grid Data	1:2,500	1995	14
Large-Scale National Grid Data	1:2,500	1996	15
Large-Scale National Grid Data	1:2,500	1996	16

Historical Map - Segment A10



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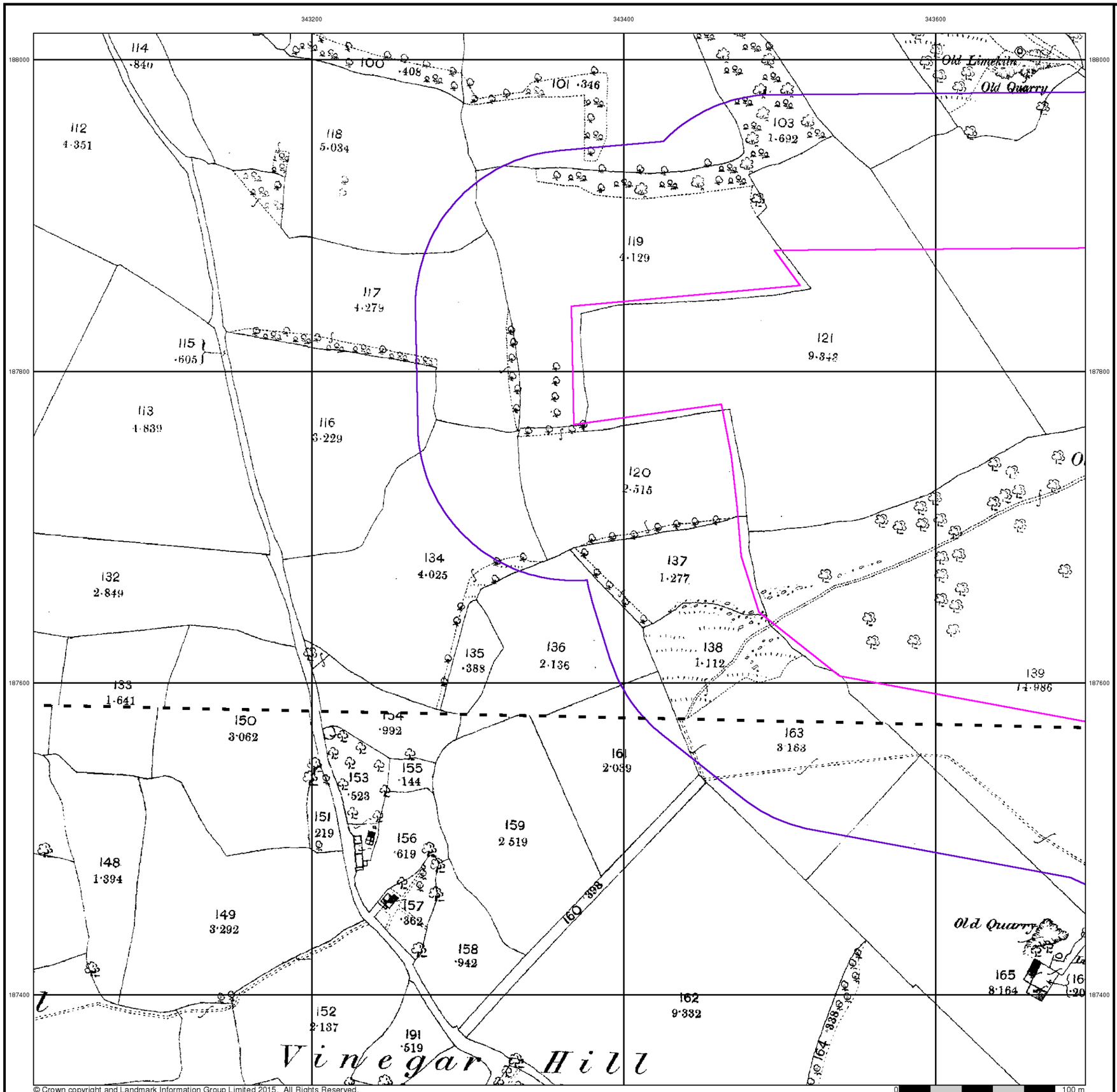


Intégral Géotechnique

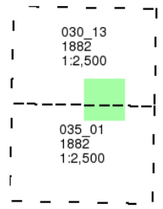
Monmouthshire

Published 1882

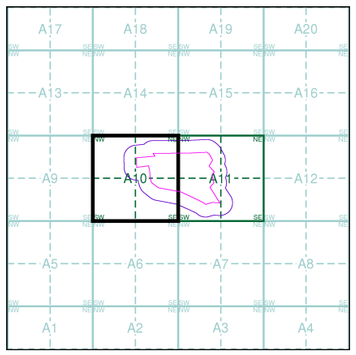
Source map scale - 1:2,500

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 A10



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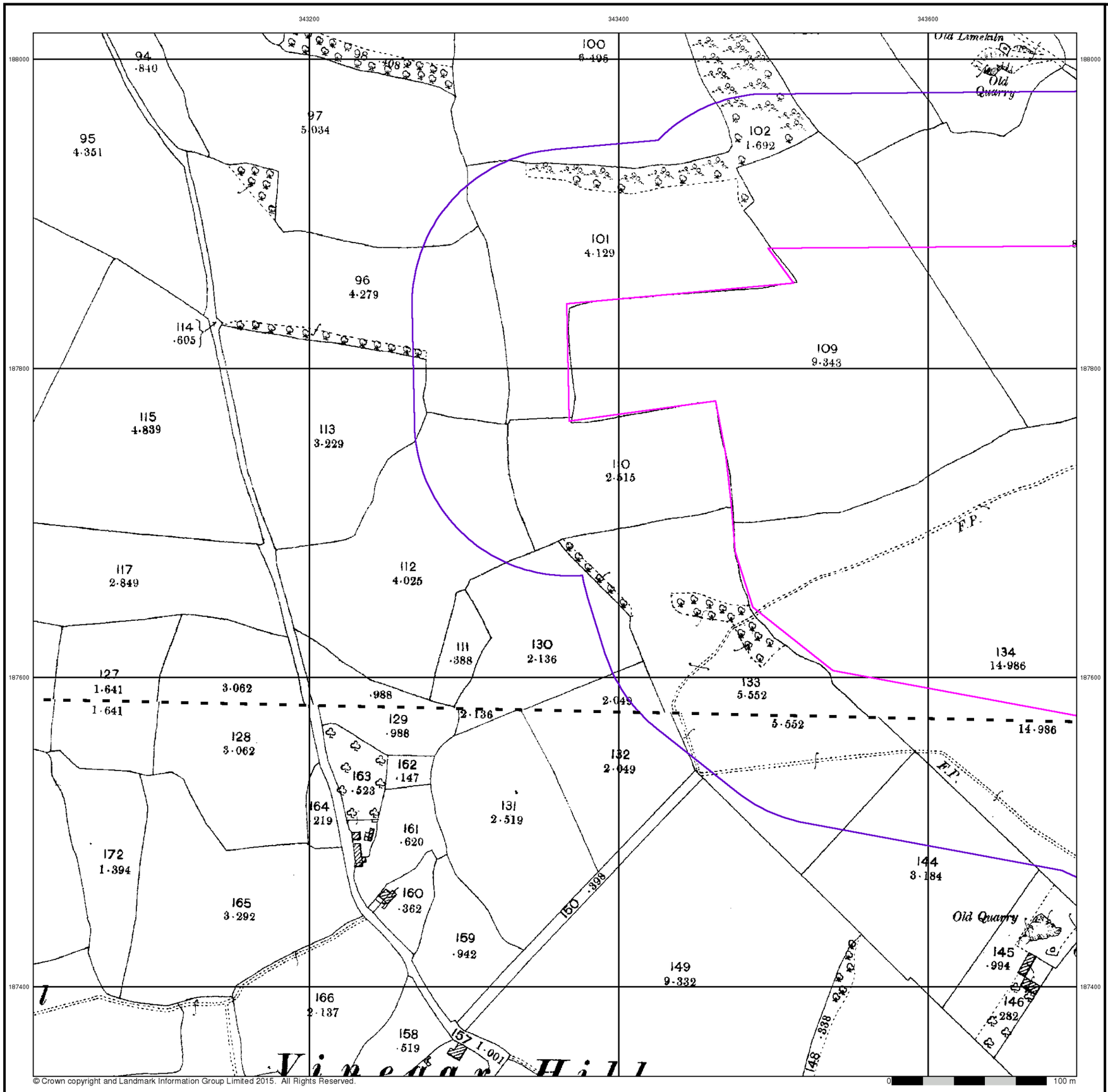

Intégral Géotechnique

Monmouthshire

Published 1901

Source map scale - 1:2,500

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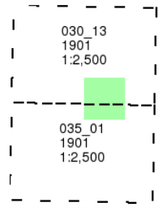
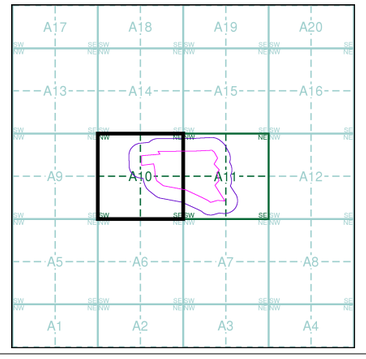


Historical Map - Segment A10



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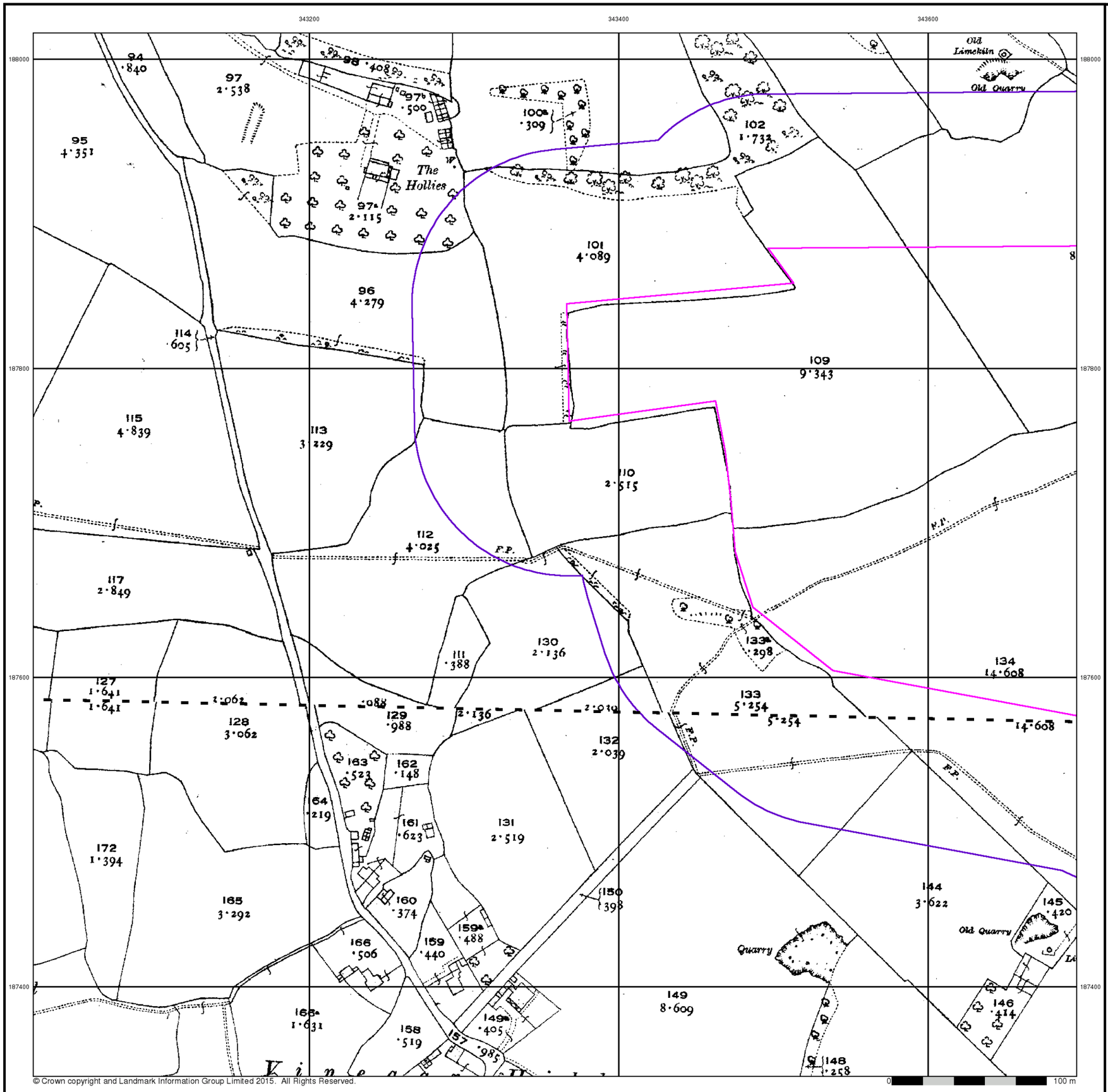

Intégral Géotechnique

Monmouthshire

Published 1921

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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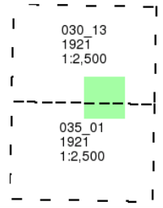
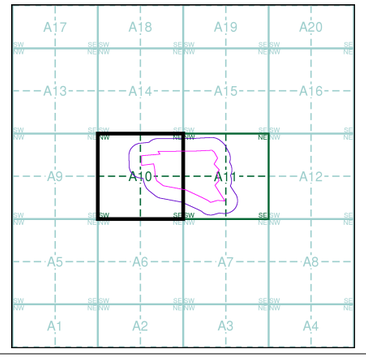


Historical Map - Segment A10



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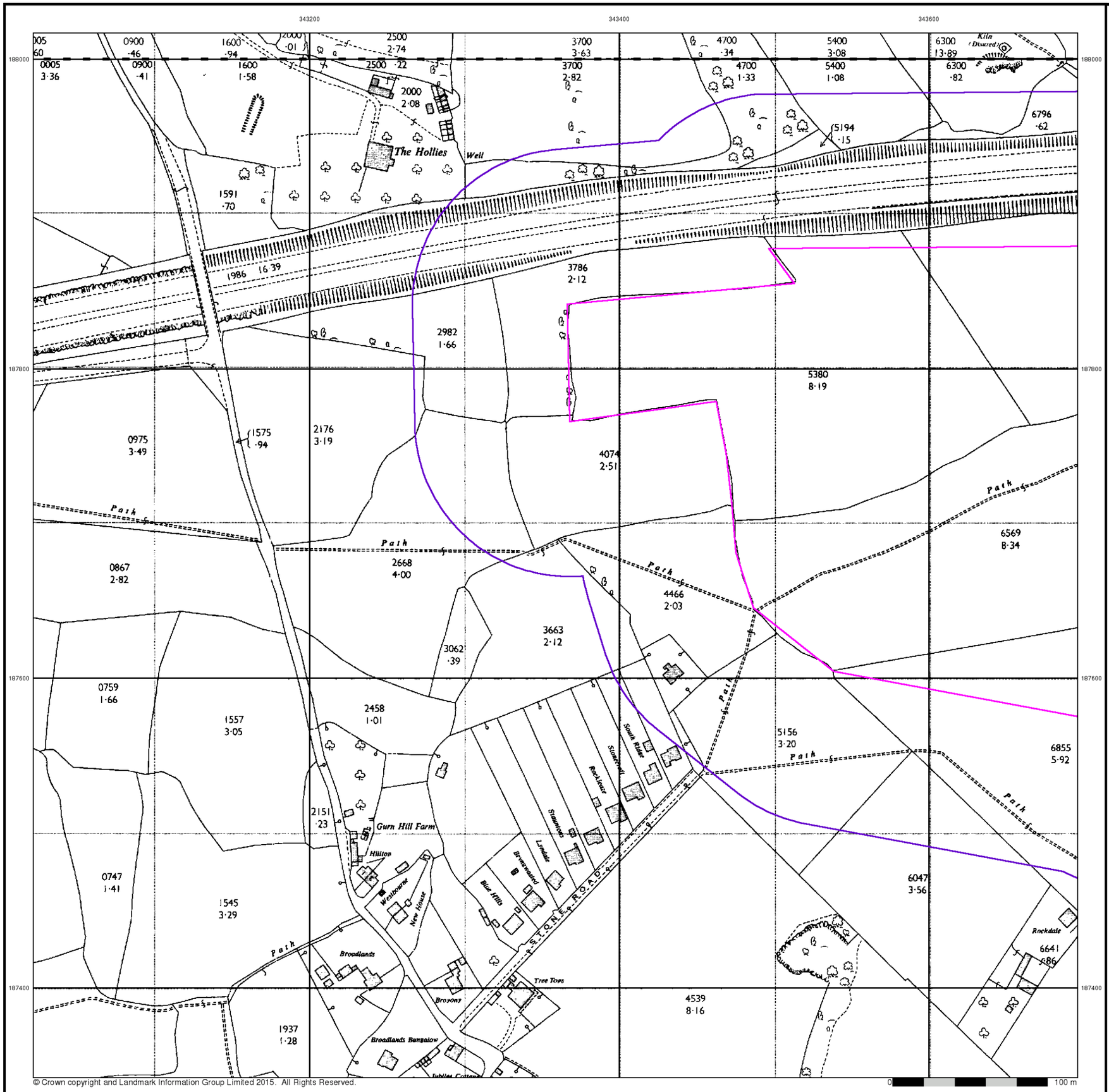

Intégral Géotechnique

Ordnance Survey Plan

Published 1968

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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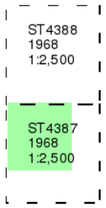
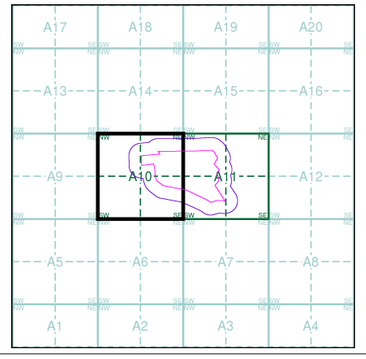


Historical Map - Segment A10



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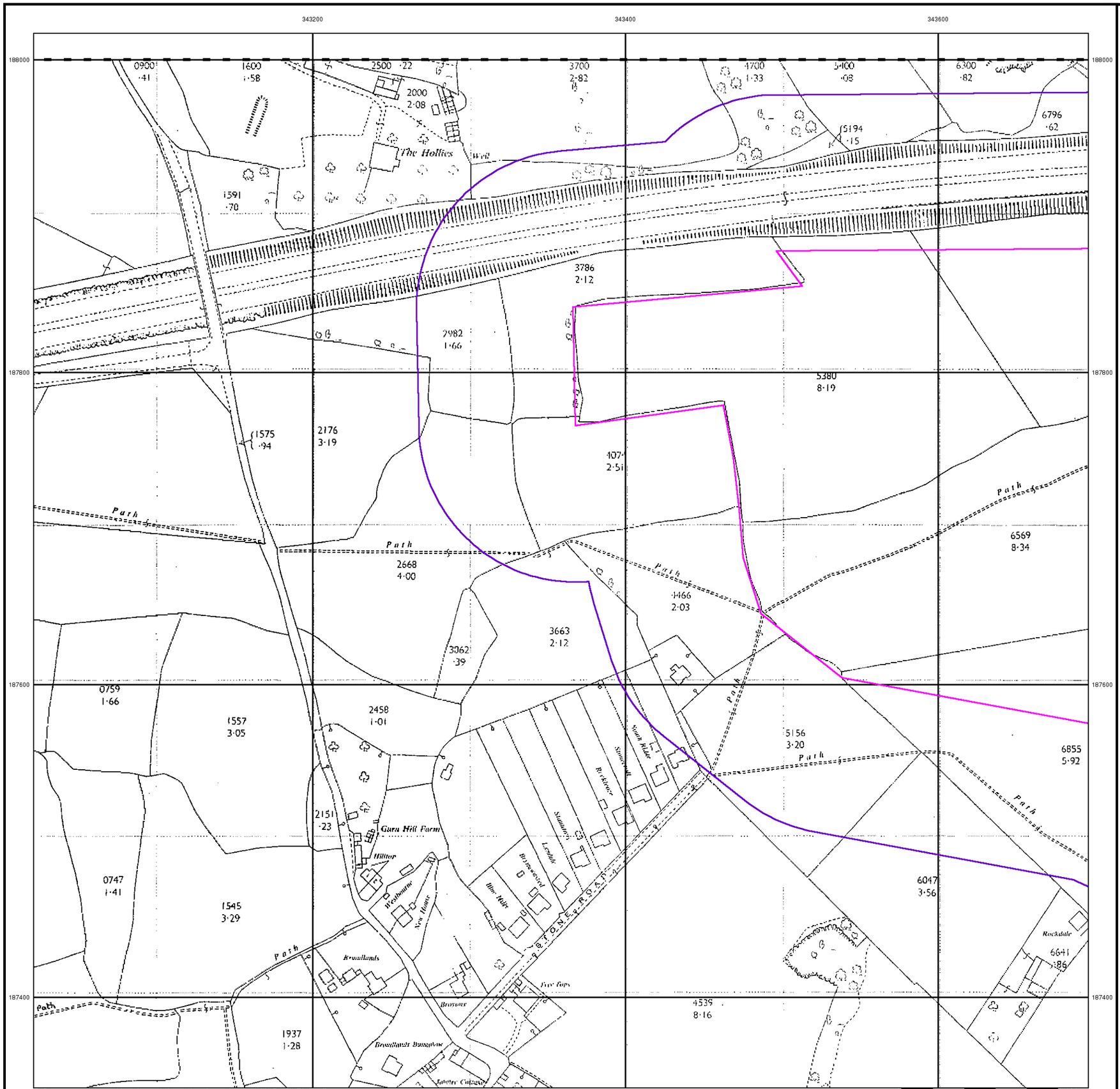


Intégral Géotechnique

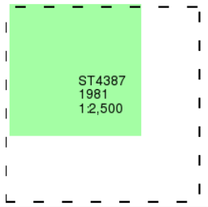
Additional SIMs

Published 1981

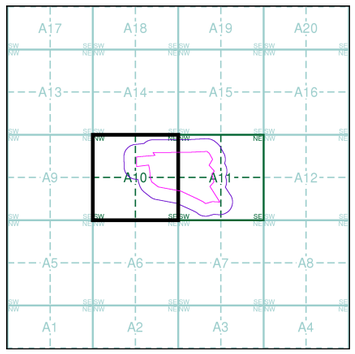
Source map scale - 1:2,500

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 A10



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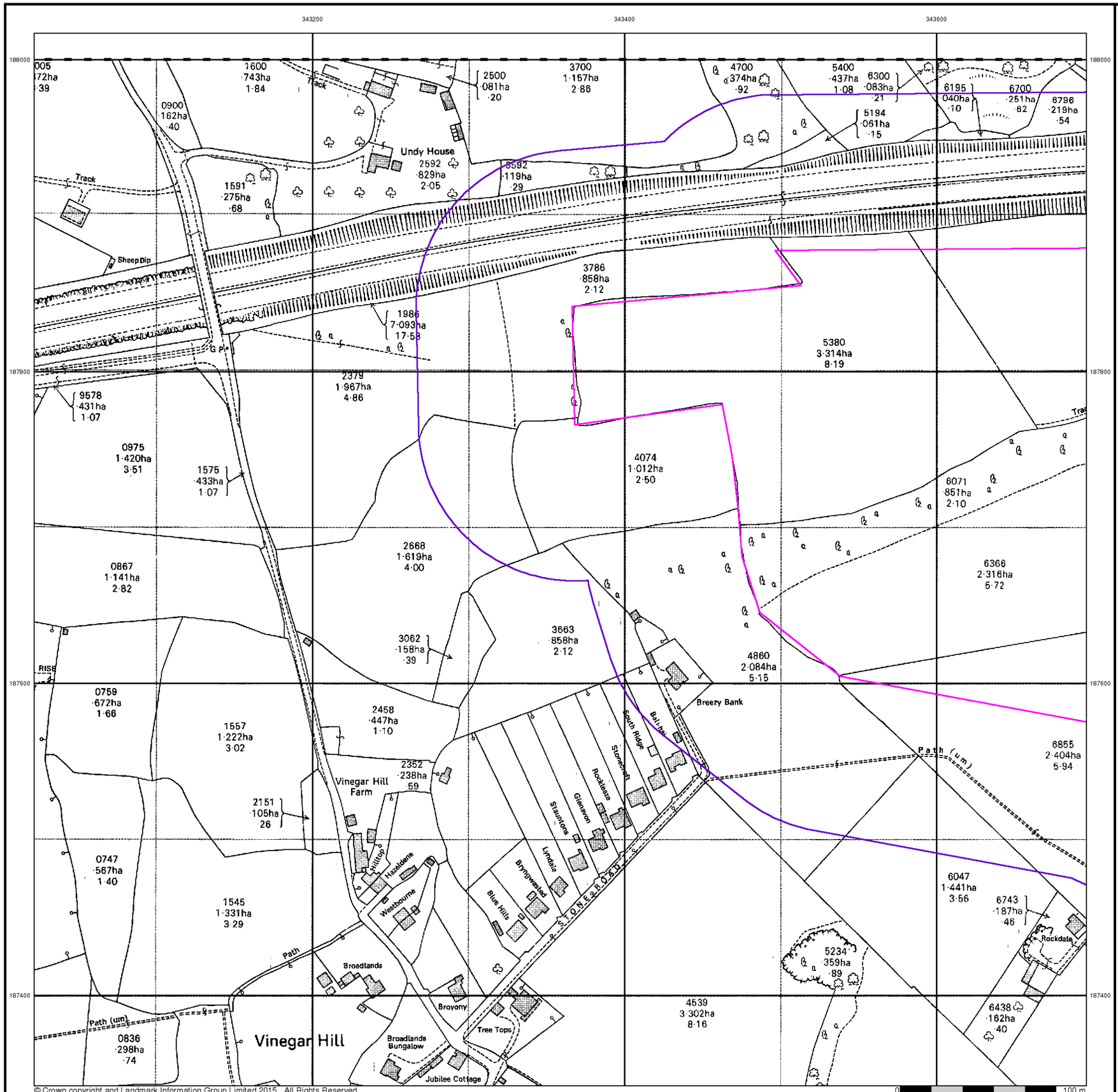

Intégral Géotechnique

Ordnance Survey Plan

Published 1983

Source map scale - 1:2,500

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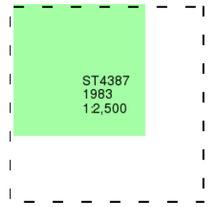
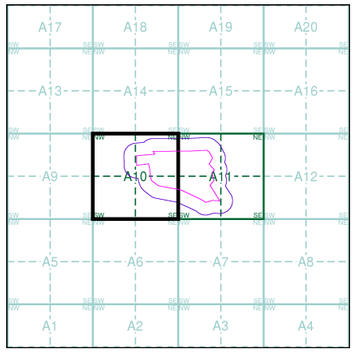


Historical Map - Segment A10



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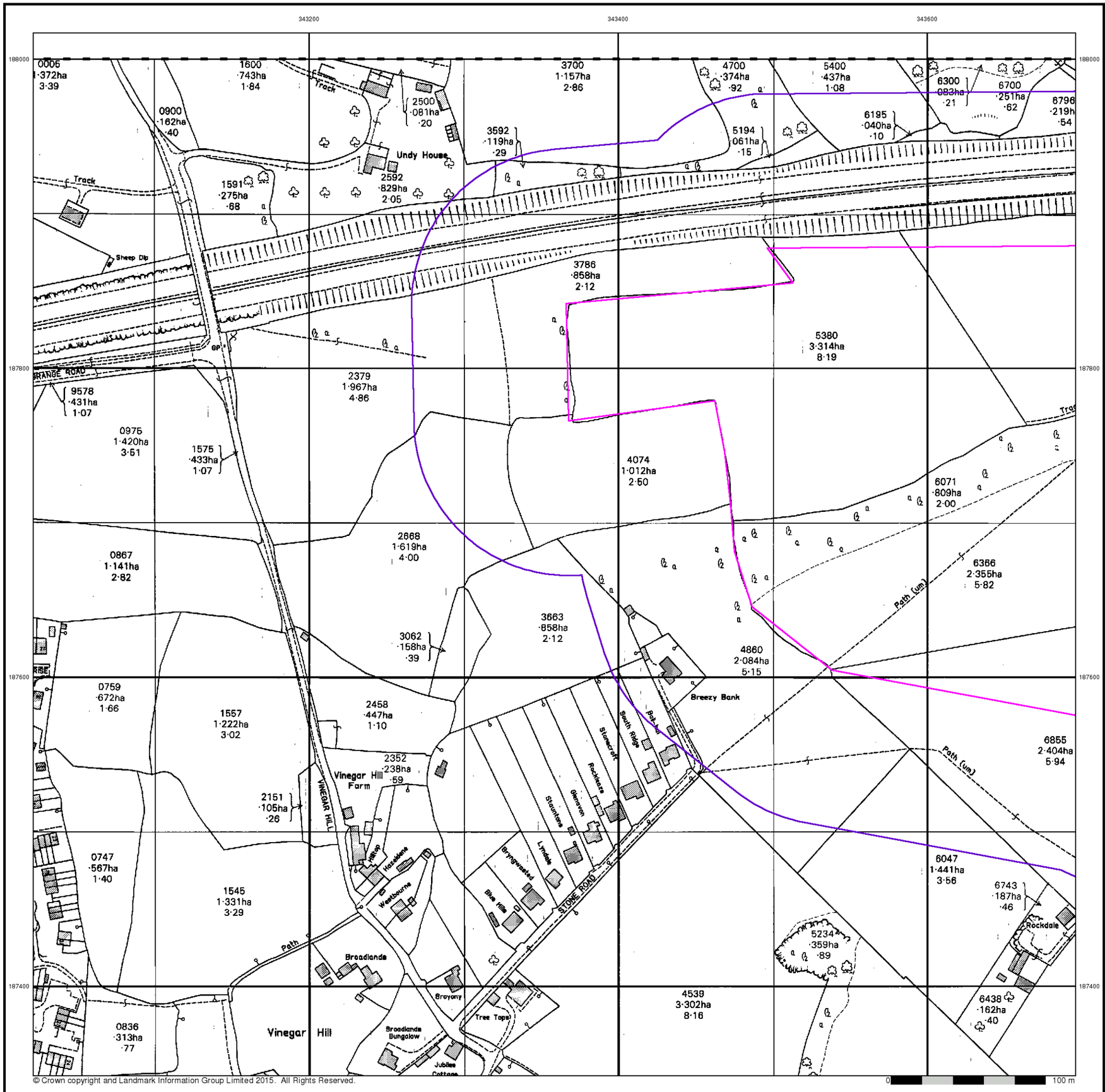

Intégral Géotechnique

Ordnance Survey Plan

Published 1988

Source map scale - 1:2,500

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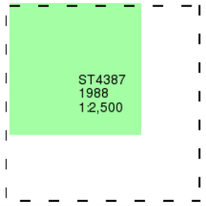
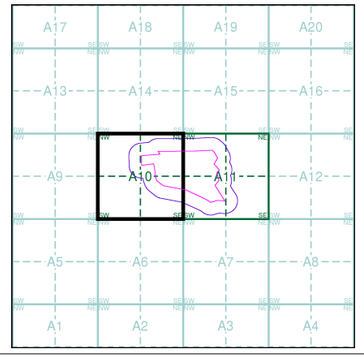


Historical Map - Segment A10



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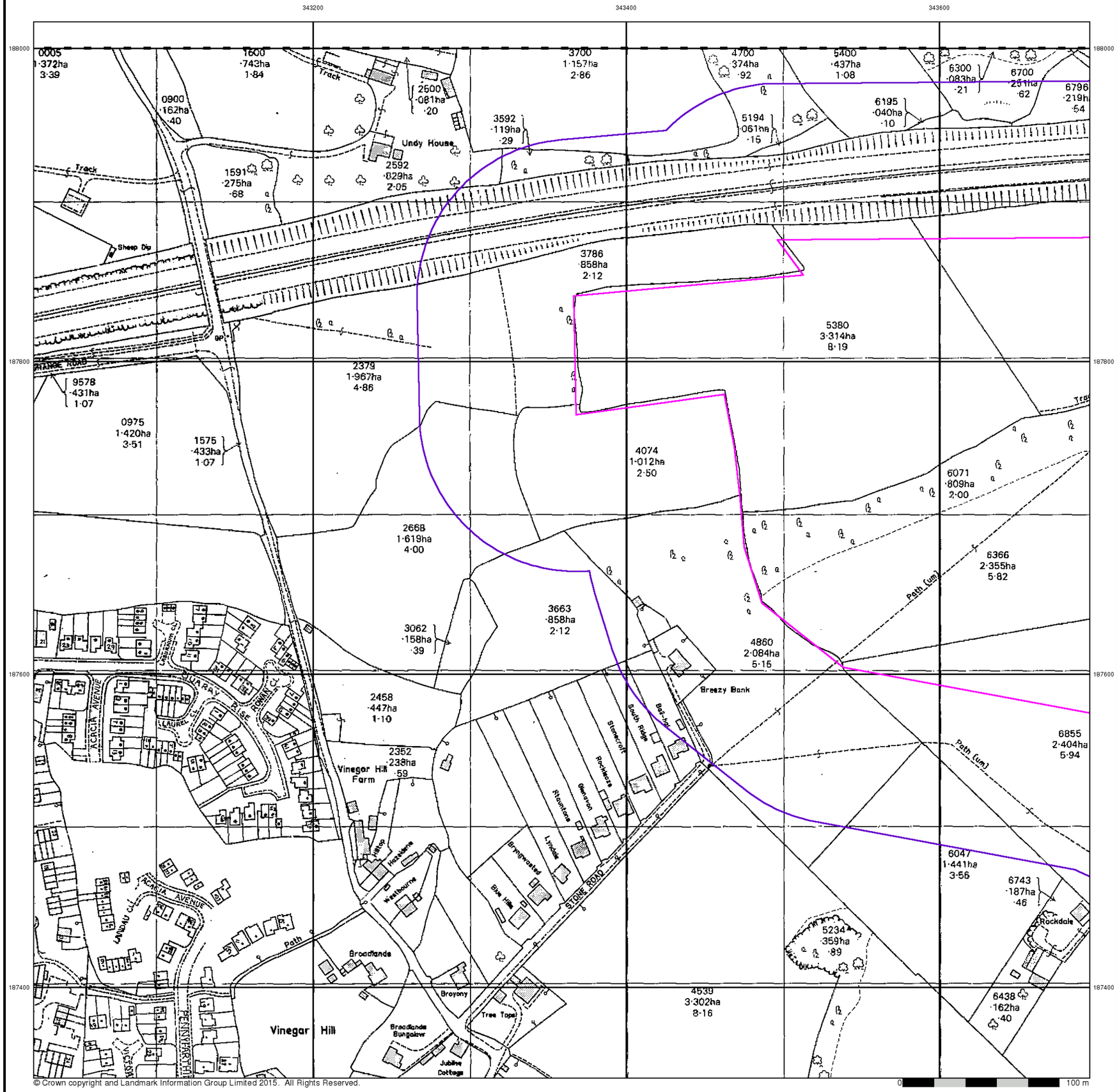


Intégral Géotechnique

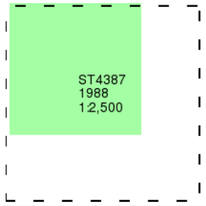
Additional SIMs

Published 1988

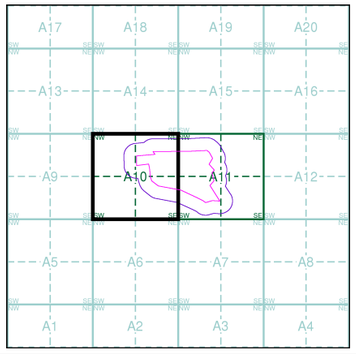
Source map scale - 1:2,500

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 A10



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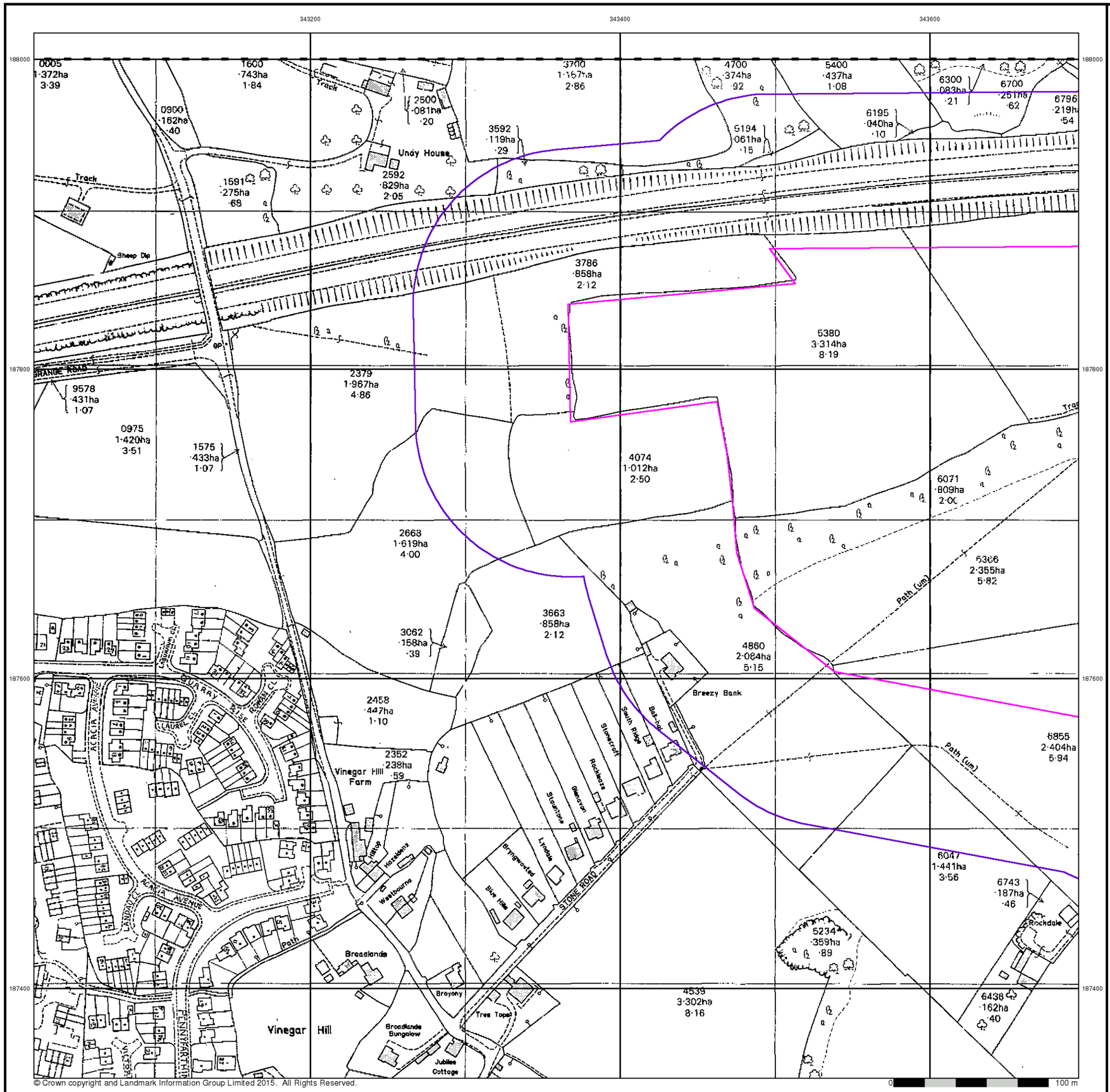

Intégral Géotechnique

Additional SIMs

Published 1990

Source map scale - 1:2,500

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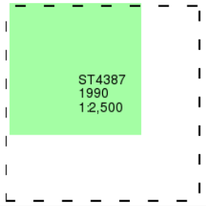
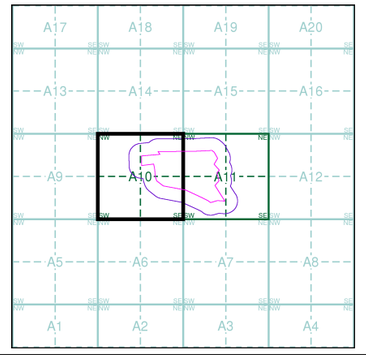


Historical Map - Segment A10



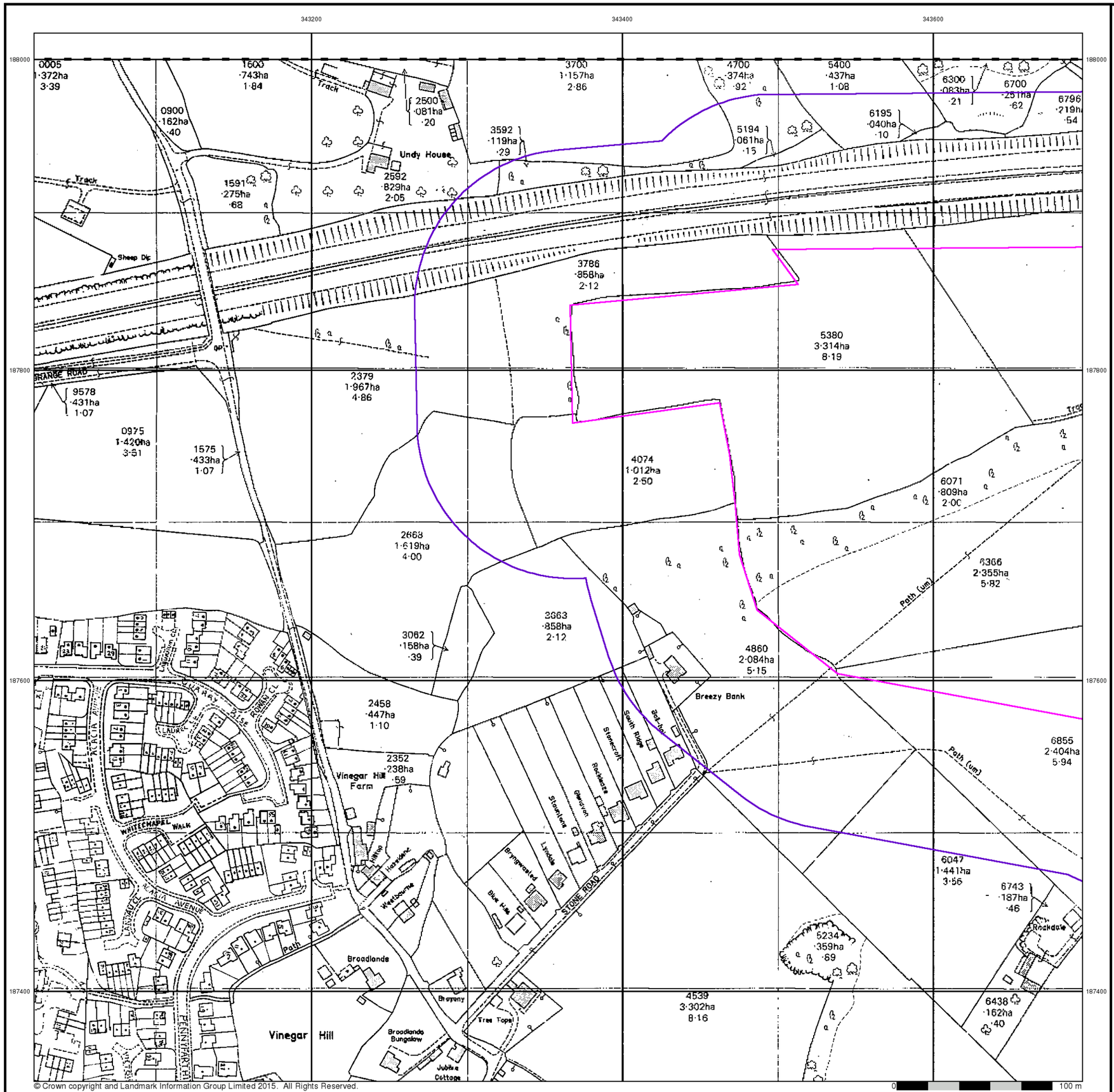
Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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



Intégral Géotechnique

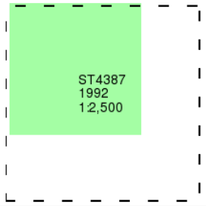
Additional SIMs

Published 1992

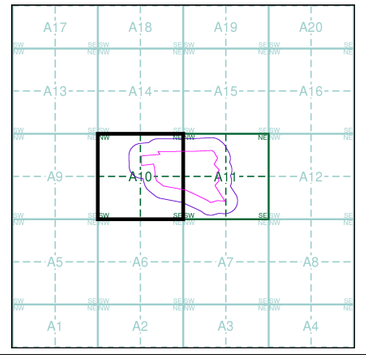
Source map scale - 1:2,500

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.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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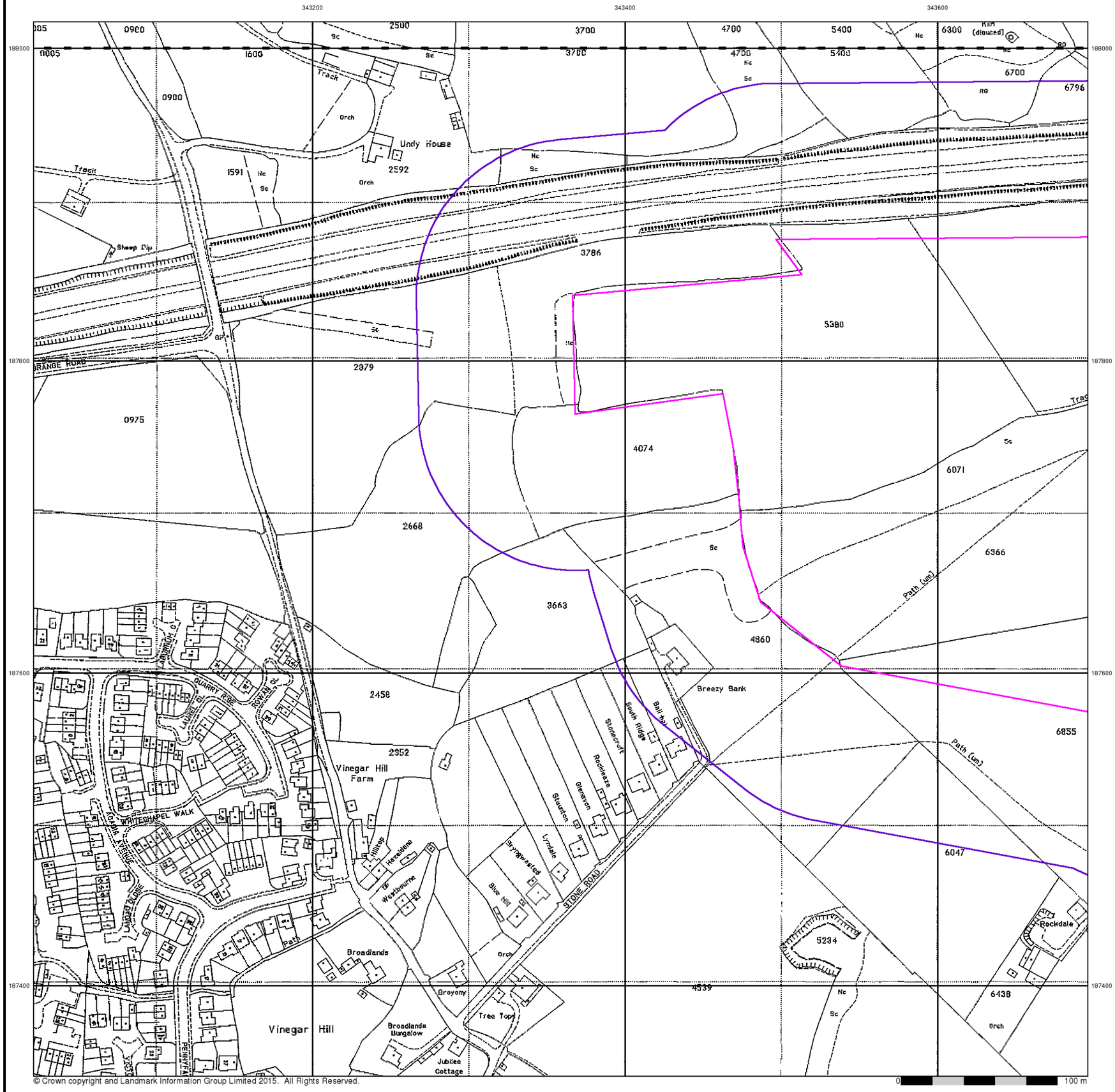


Intégral Géotechnique

Large-Scale National Grid Data

Published 1994

Source map scale - 1:2,500

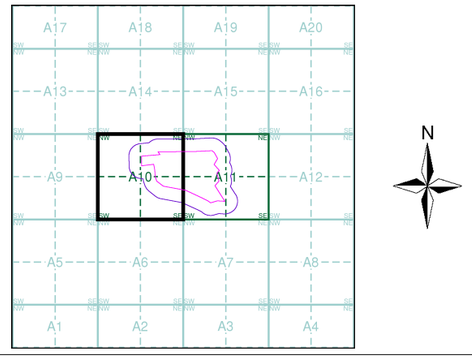
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic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

Map Name(s) and Date(s)

ST4388
1994
1:2,500

ST4387
1994
1:2,500

Historical Map - Segment A10



Order Details

Order Number:	72679722_1_1
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National Grid Reference:	343720, 187710
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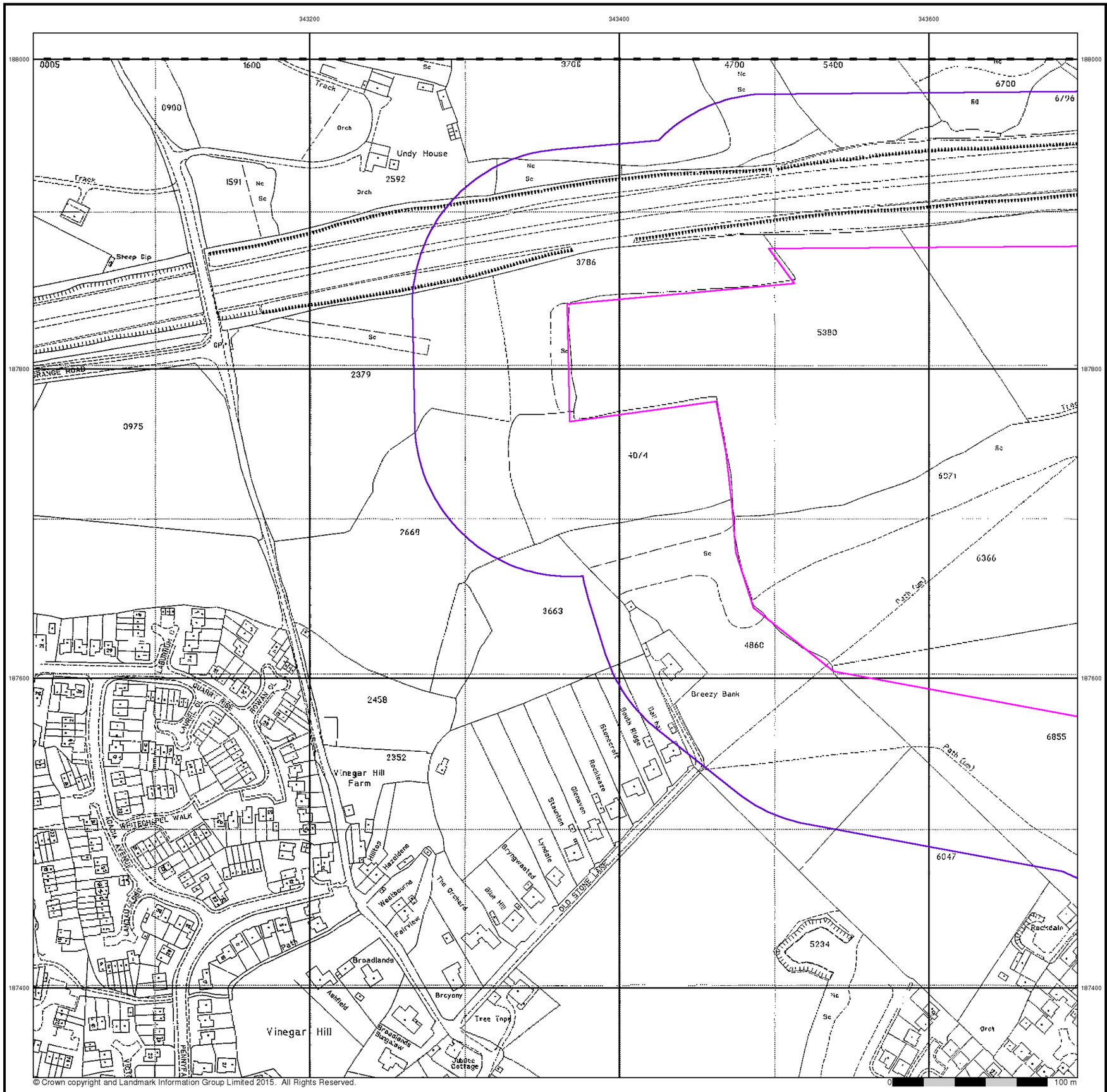


Intégral Géotechnique

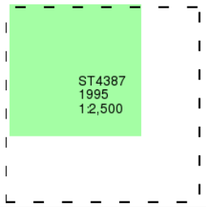
Large-Scale National Grid Data

Published 1995

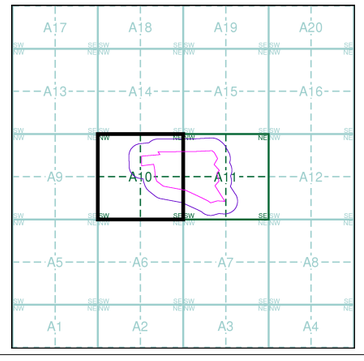
Source map scale - 1:2,500

'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 A10



Order Details

Order Number:	72679722_1_1
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National Grid Reference:	343720, 187710
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Site Area (Ha):	16.73
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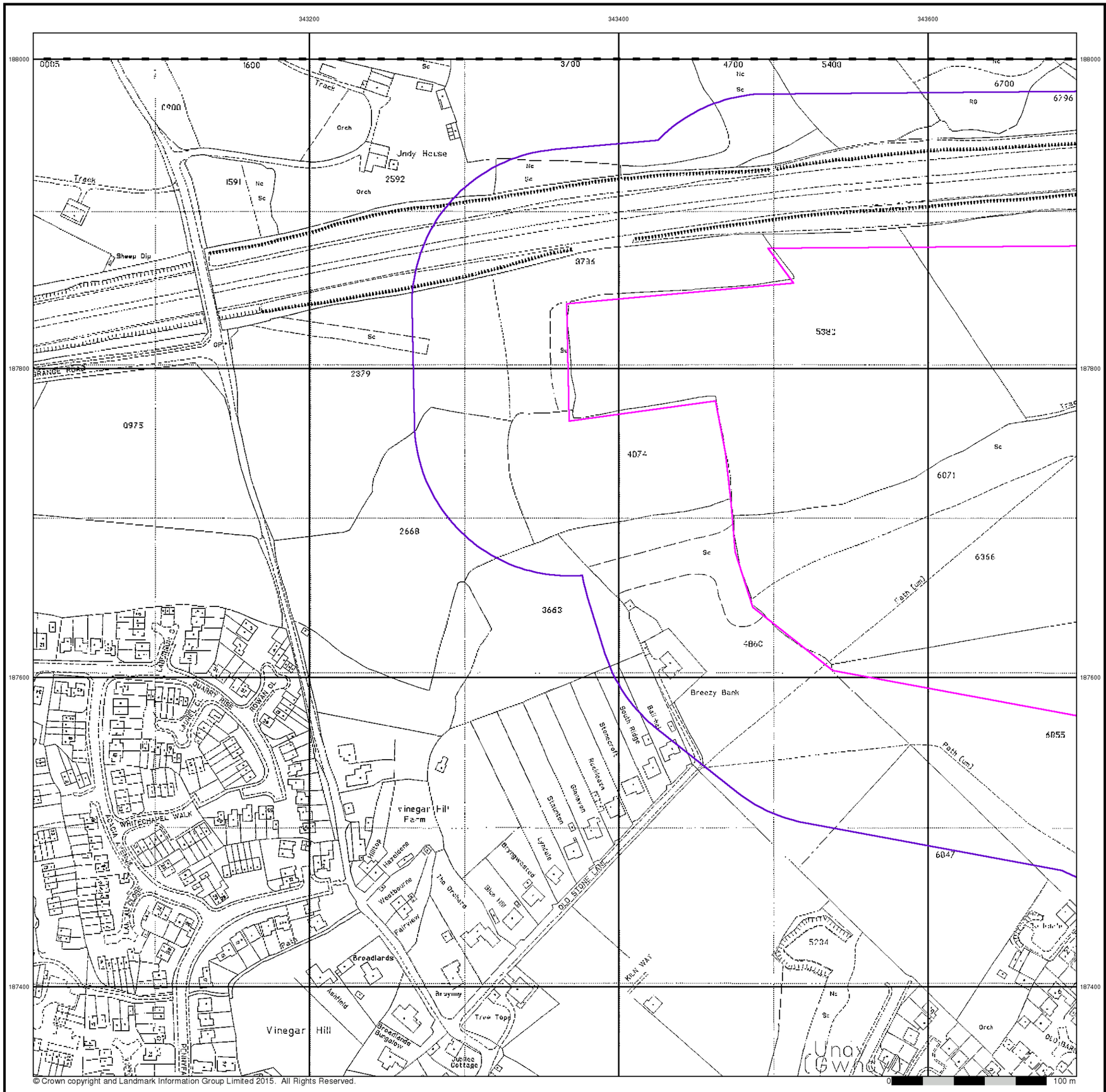


Intégral Géotechnique

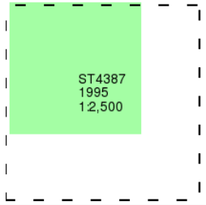
Large-Scale National Grid Data

Published 1995

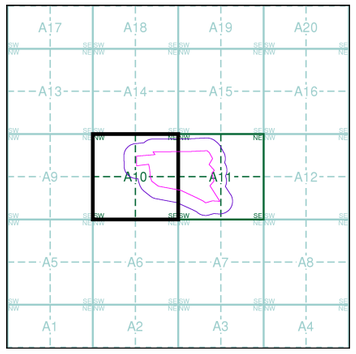
Source map scale - 1:2,500

'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 A10



Order Details

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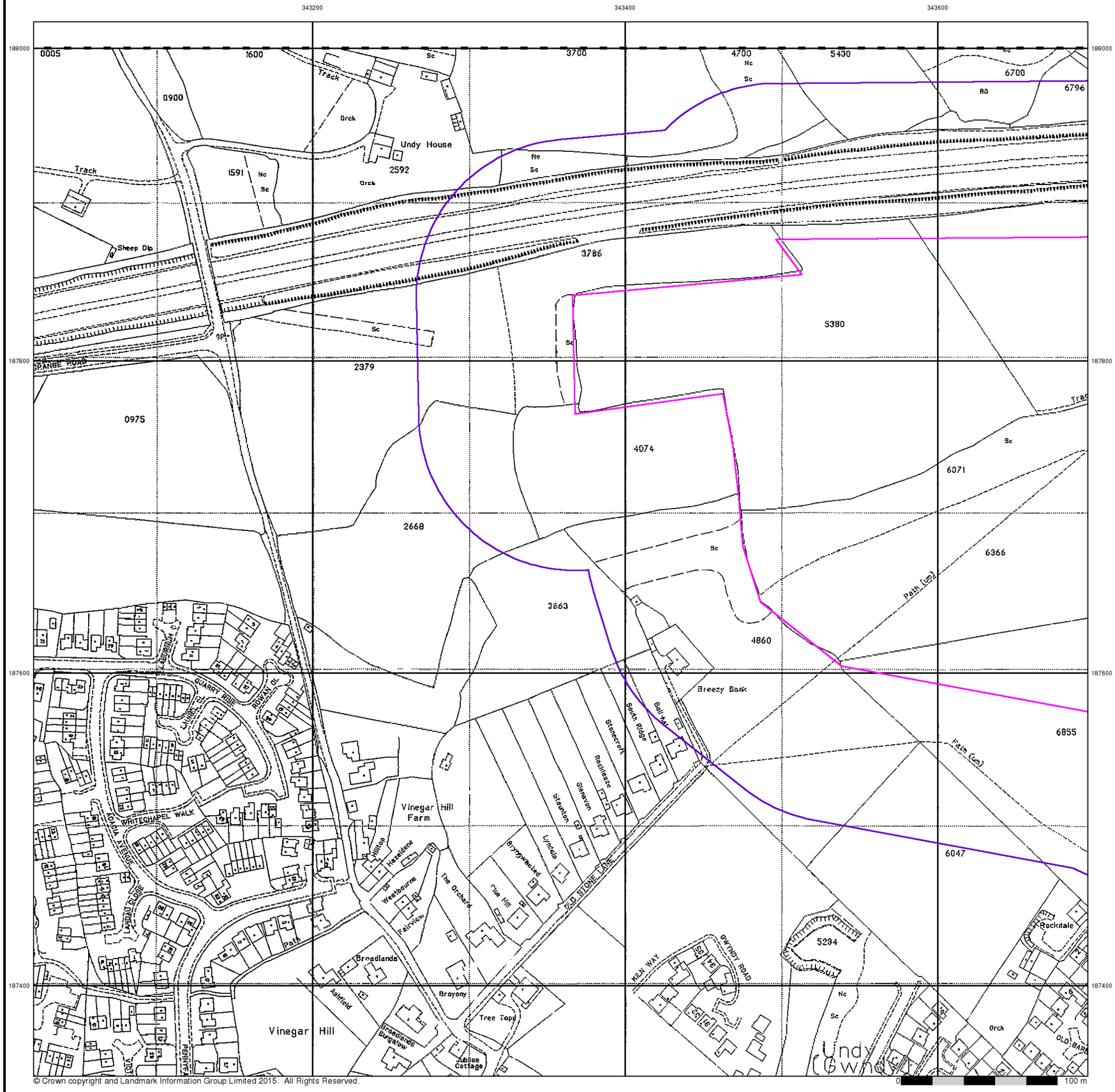


Intégral Géotechnique

Large-Scale National Grid Data

Published 1996

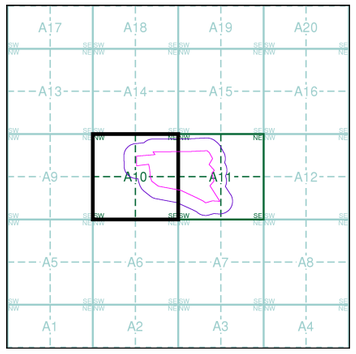
Source map scale - 1:2,500

'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)

ST4387
1996
1:2,500

Historical Map - Segment A10



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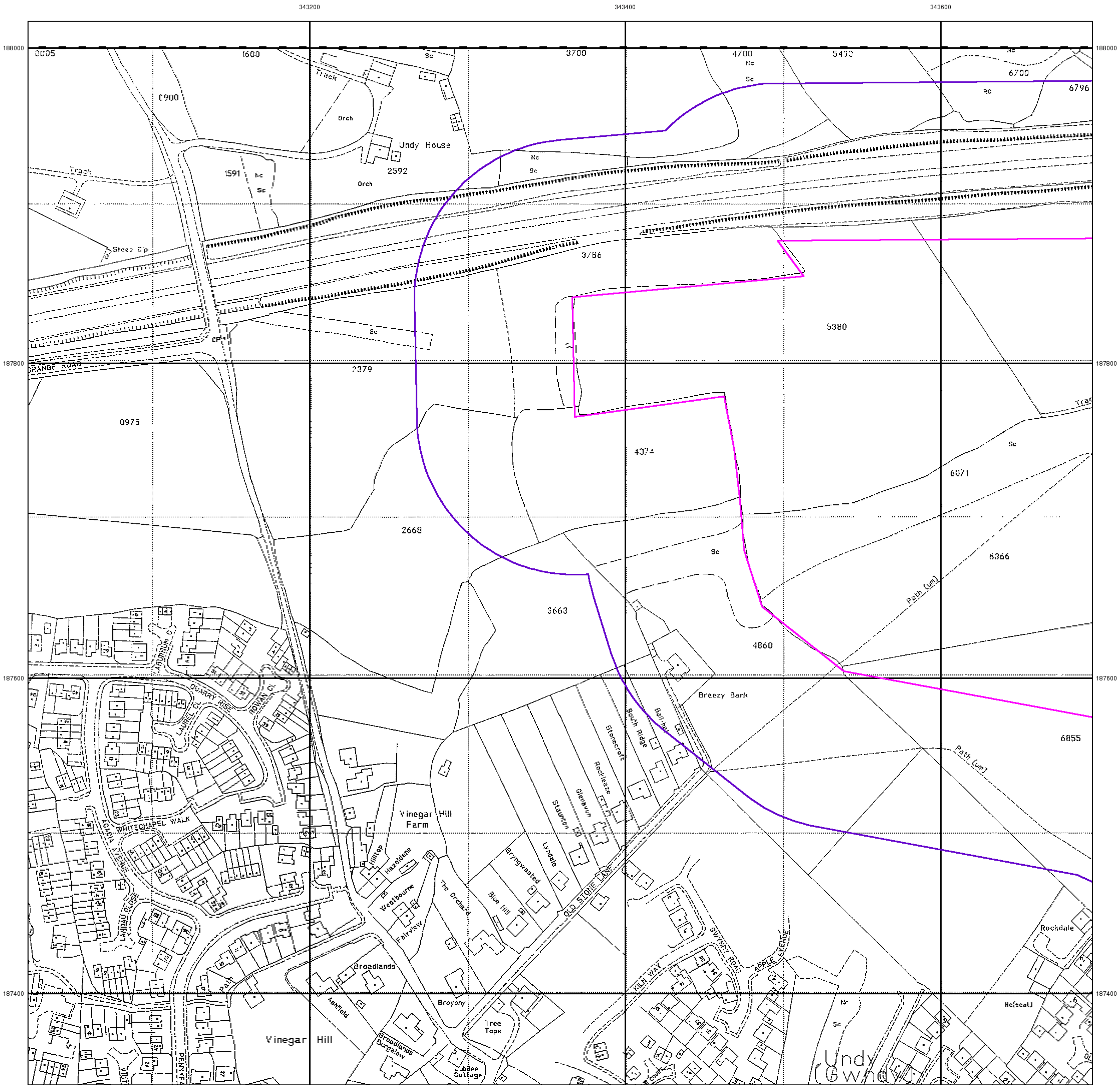


Intégral Géotechnique

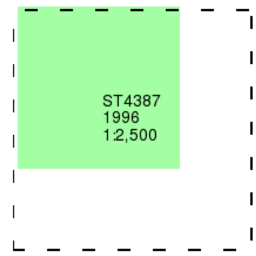
Large-Scale National Grid Data

Published 1996

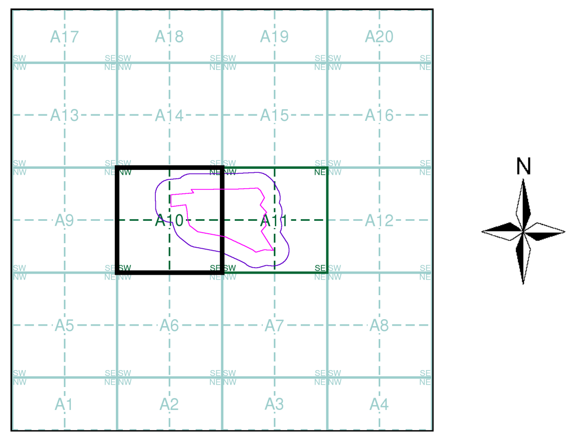
Source map scale - 1:2,500

'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 A10



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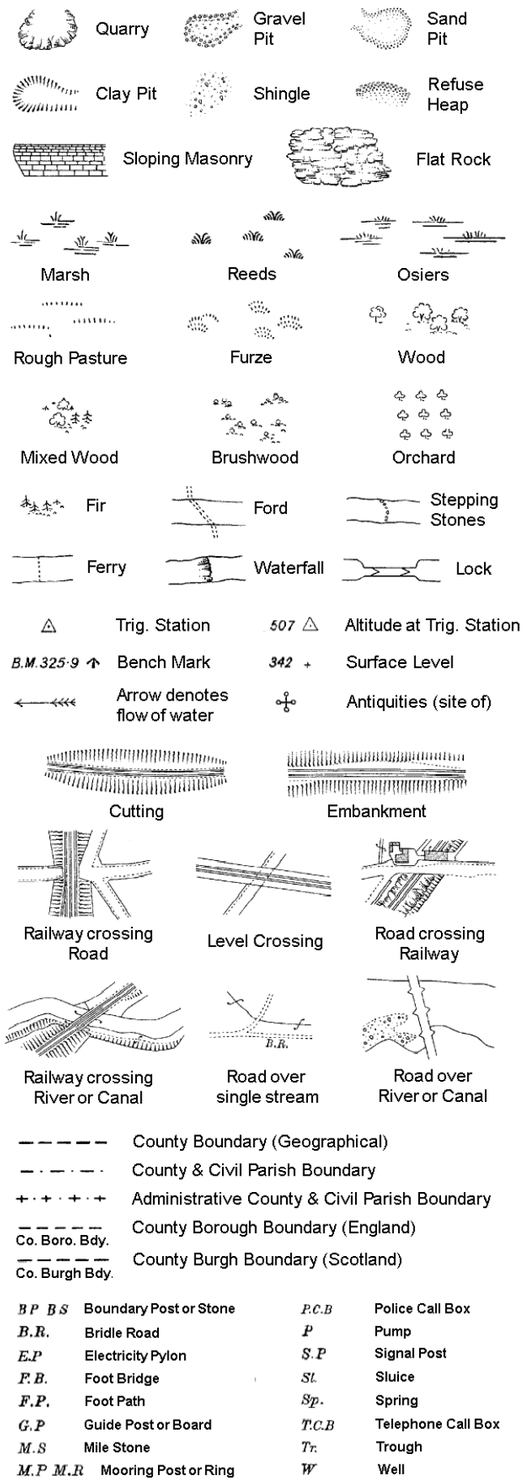
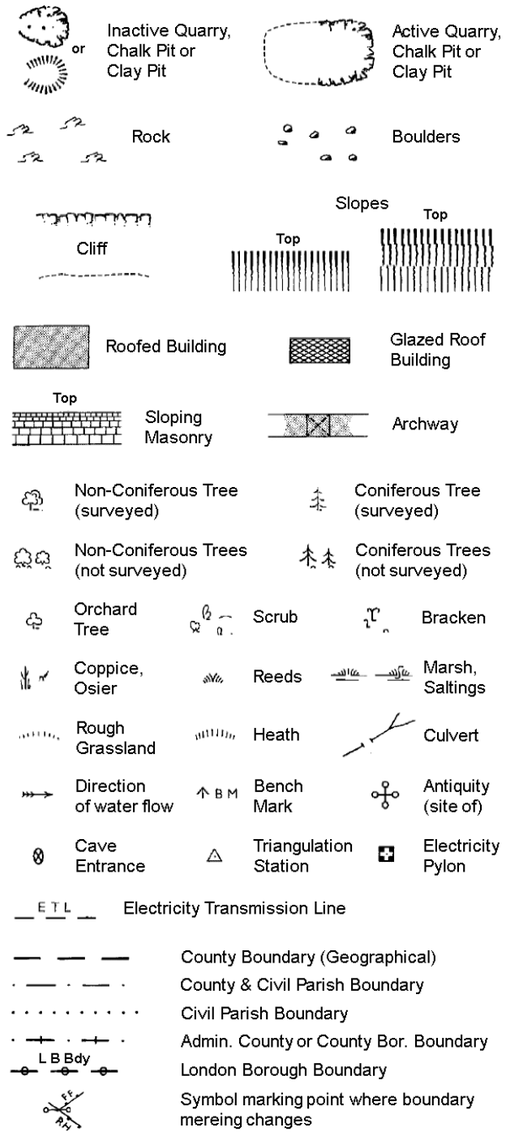
Historical Mapping Legends

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



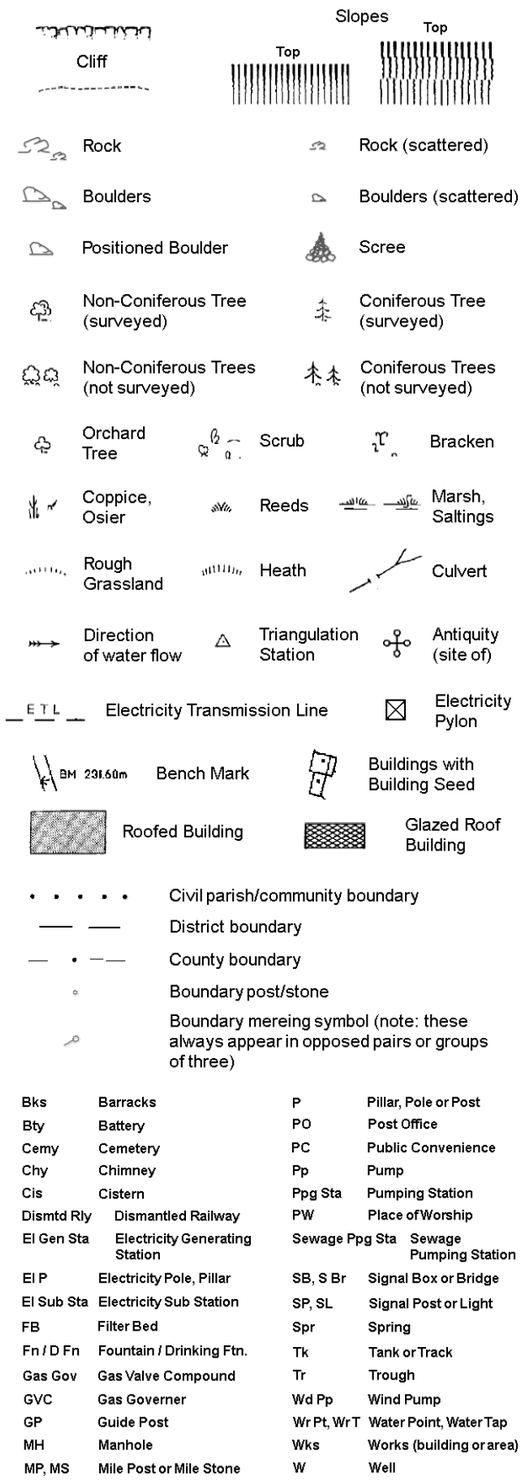
B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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



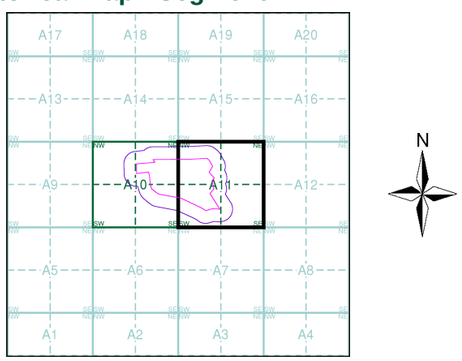
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity 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

Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:2,500	1882	2
Monmouthshire	1:2,500	1901	3
Monmouthshire	1:2,500	1921	4
Ordnance Survey Plan	1:2,500	1968	5
Additional SIMs	1:2,500	1981 - 1989	6
Ordnance Survey Plan	1:2,500	1983	7
Ordnance Survey Plan	1:2,500	1988	8
Additional SIMs	1:2,500	1988	9
Additional SIMs	1:2,500	1990	10
Additional SIMs	1:2,500	1992	11
Large-Scale National Grid Data	1:2,500	1994	12
Large-Scale National Grid Data	1:2,500	1995	13
Large-Scale National Grid Data	1:2,500	1995	14
Large-Scale National Grid Data	1:2,500	1996	15
Large-Scale National Grid Data	1:2,500	1996	16

Historical Map - Segment A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
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Slice:	A
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Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark® Information Group

Tel: 0844 844 9952
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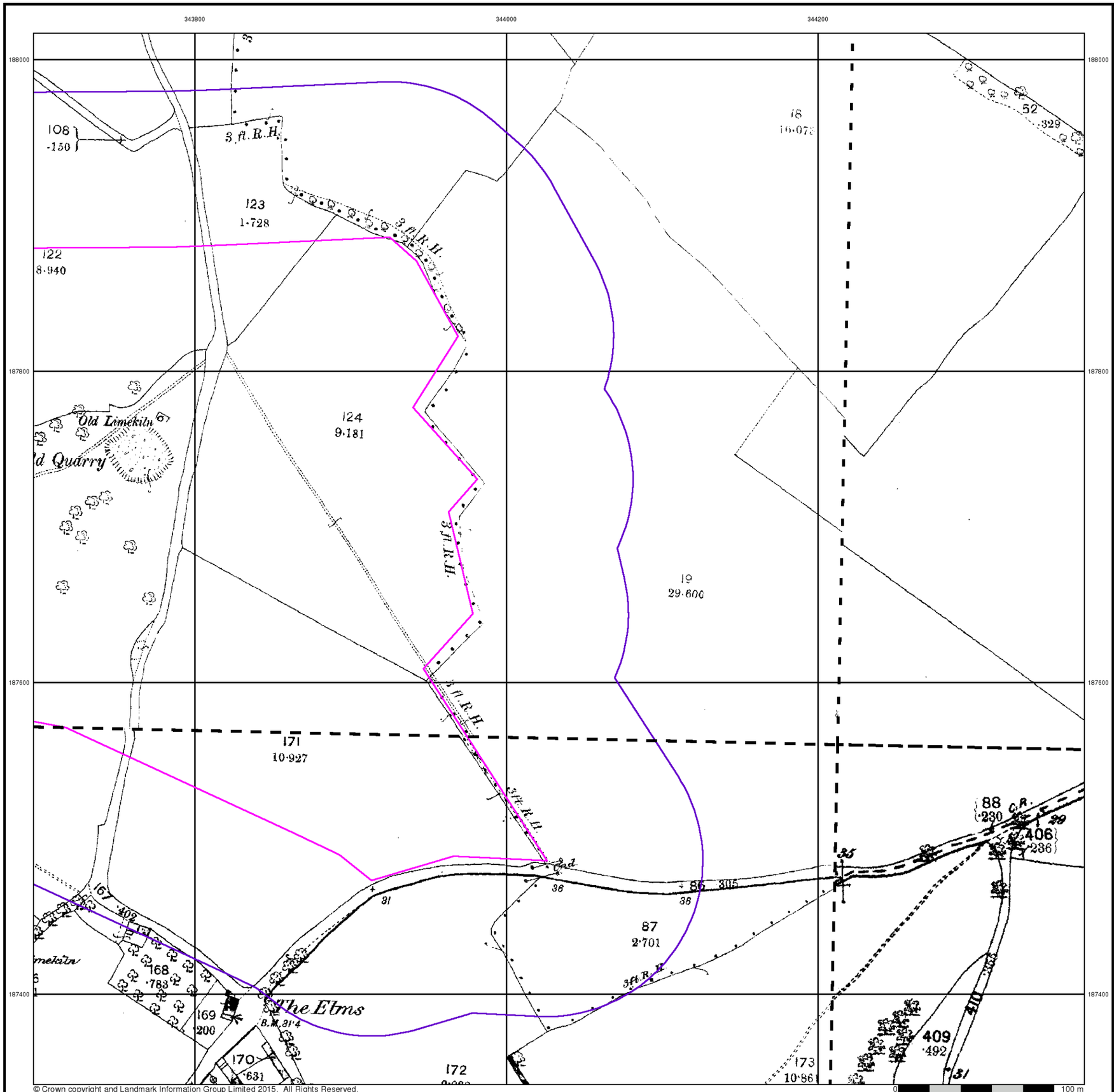


Intégral Géotechnique

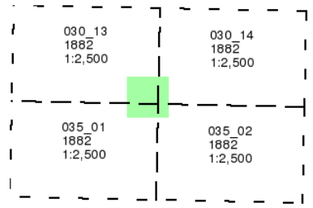
Monmouthshire

Published 1882

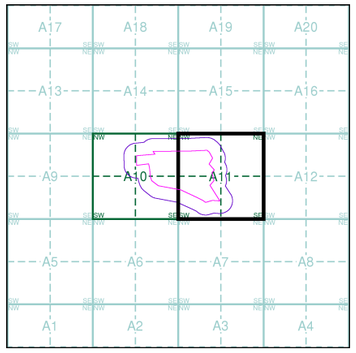
Source map scale - 1:2,500

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 A11



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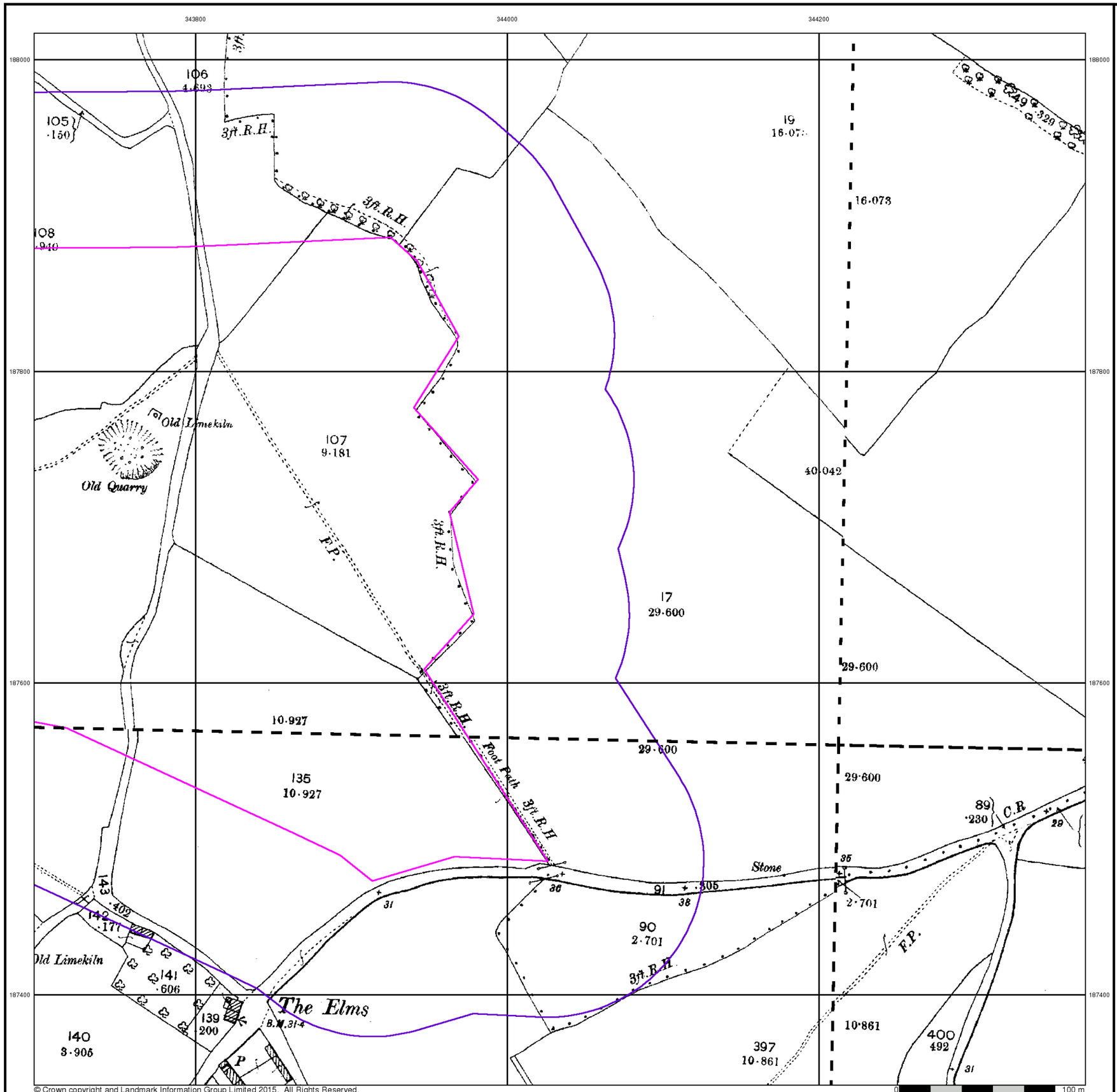


Intégral Géotechnique

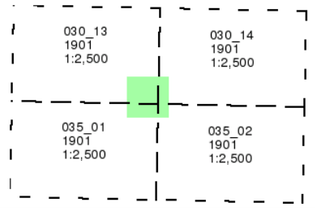
Monmouthshire

Published 1901

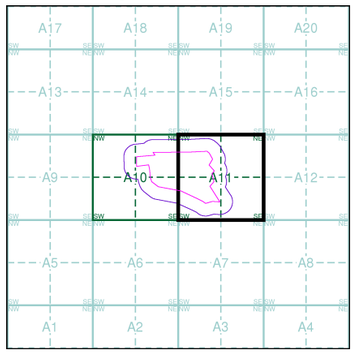
Source map scale - 1:2,500

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 A11



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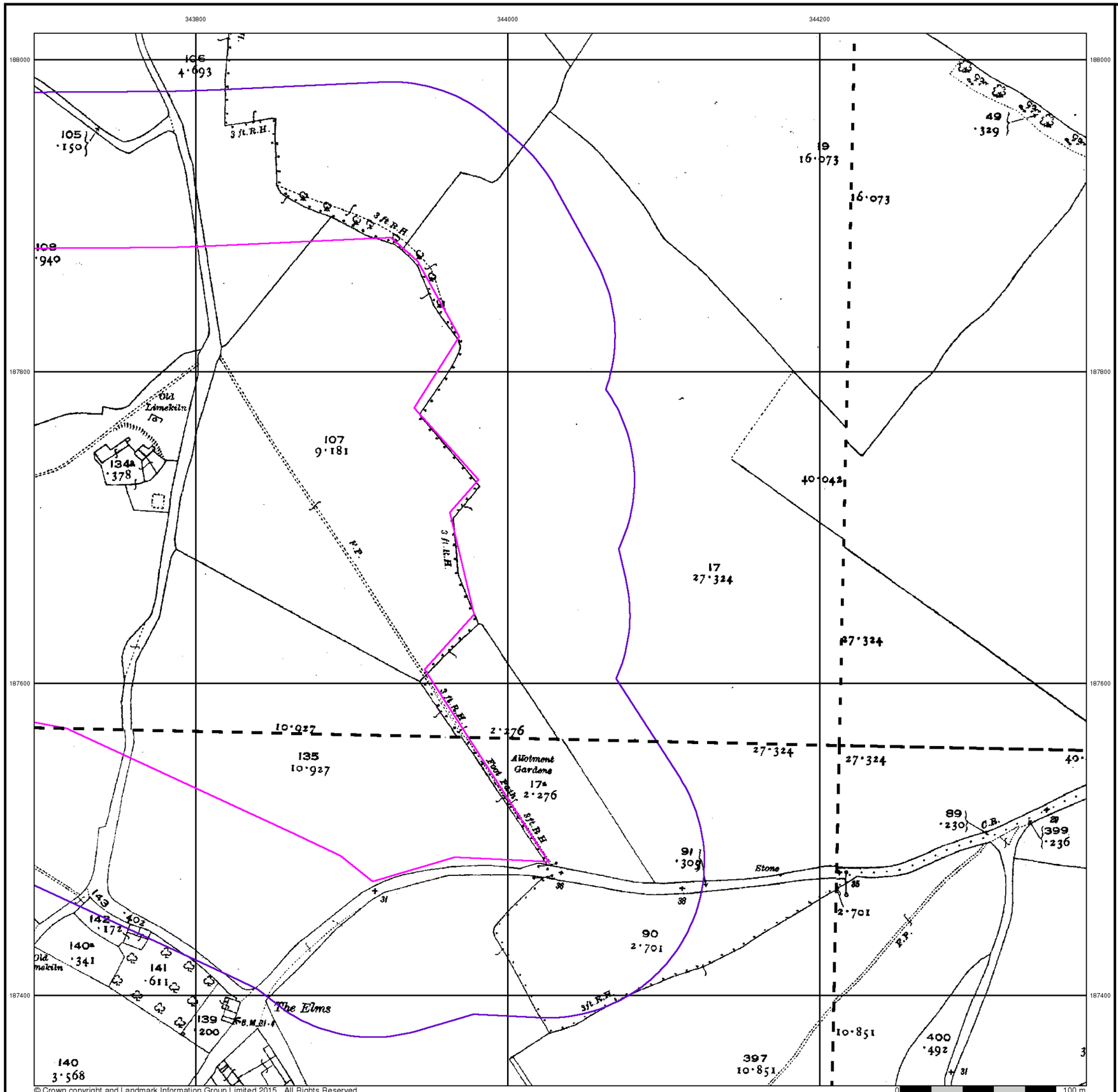


Intégral Géotechnique

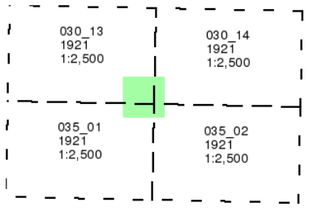
Monmouthshire

Published 1921

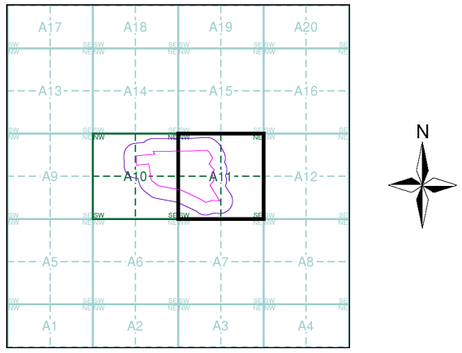
Source map scale - 1:2,500

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 A11



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Intégral Géotechnique

Ordnance Survey Plan

Published 1968

Source map scale - 1:2,500

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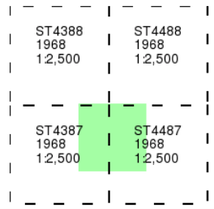
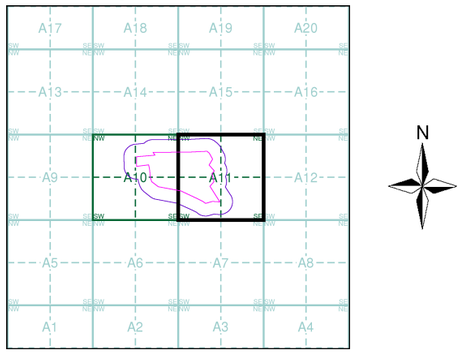
Map Name(s) and Date(s)



Historical Map - Segment A11



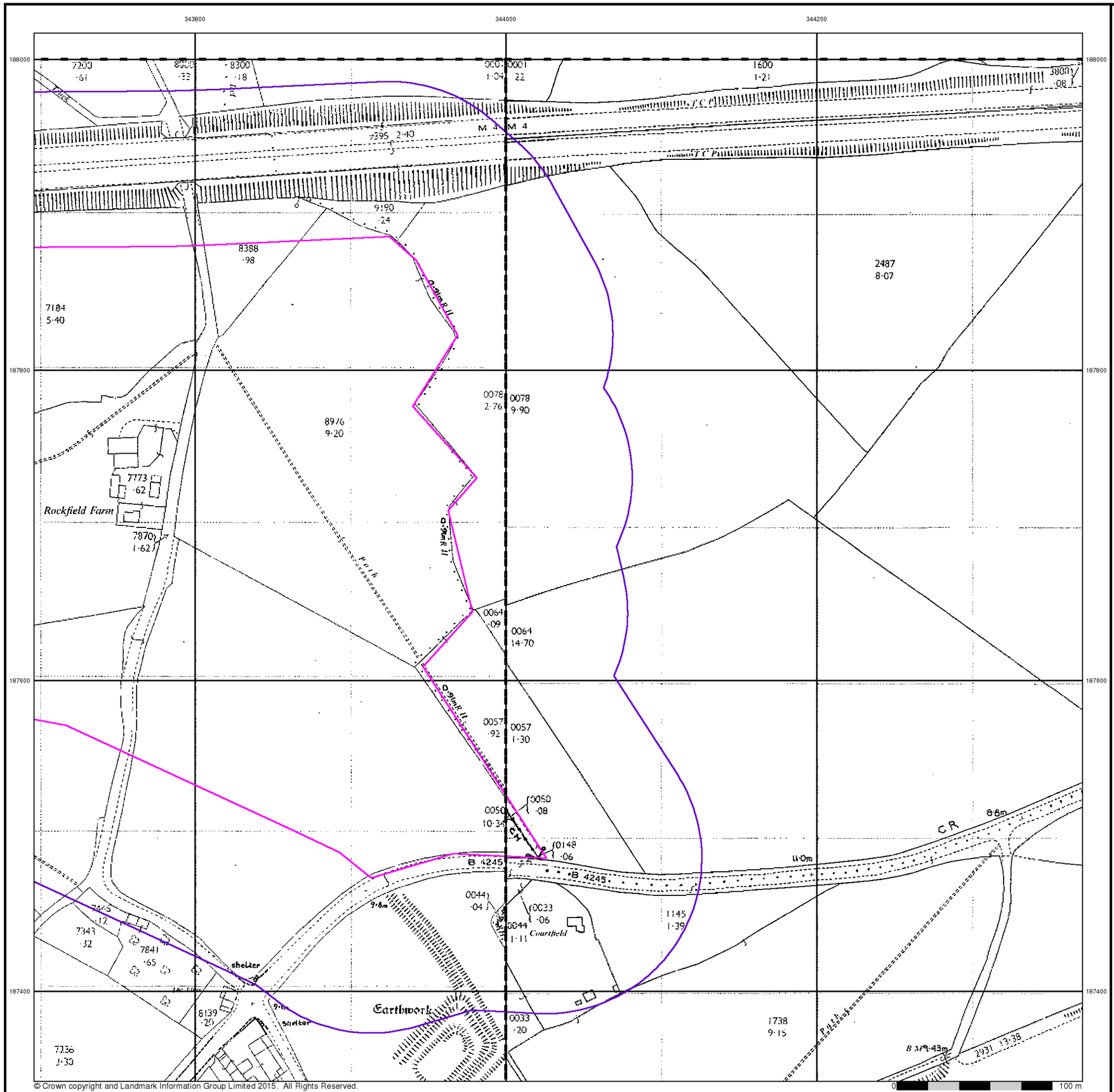
Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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



Intégral Géotechnique

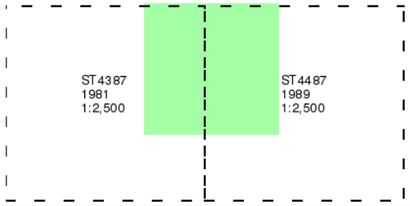
Additional SIMs

Published 1981 - 1989

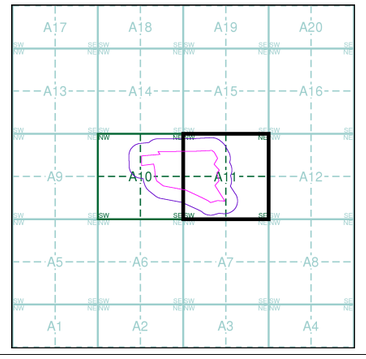
Source map scale - 1:2,500

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 A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
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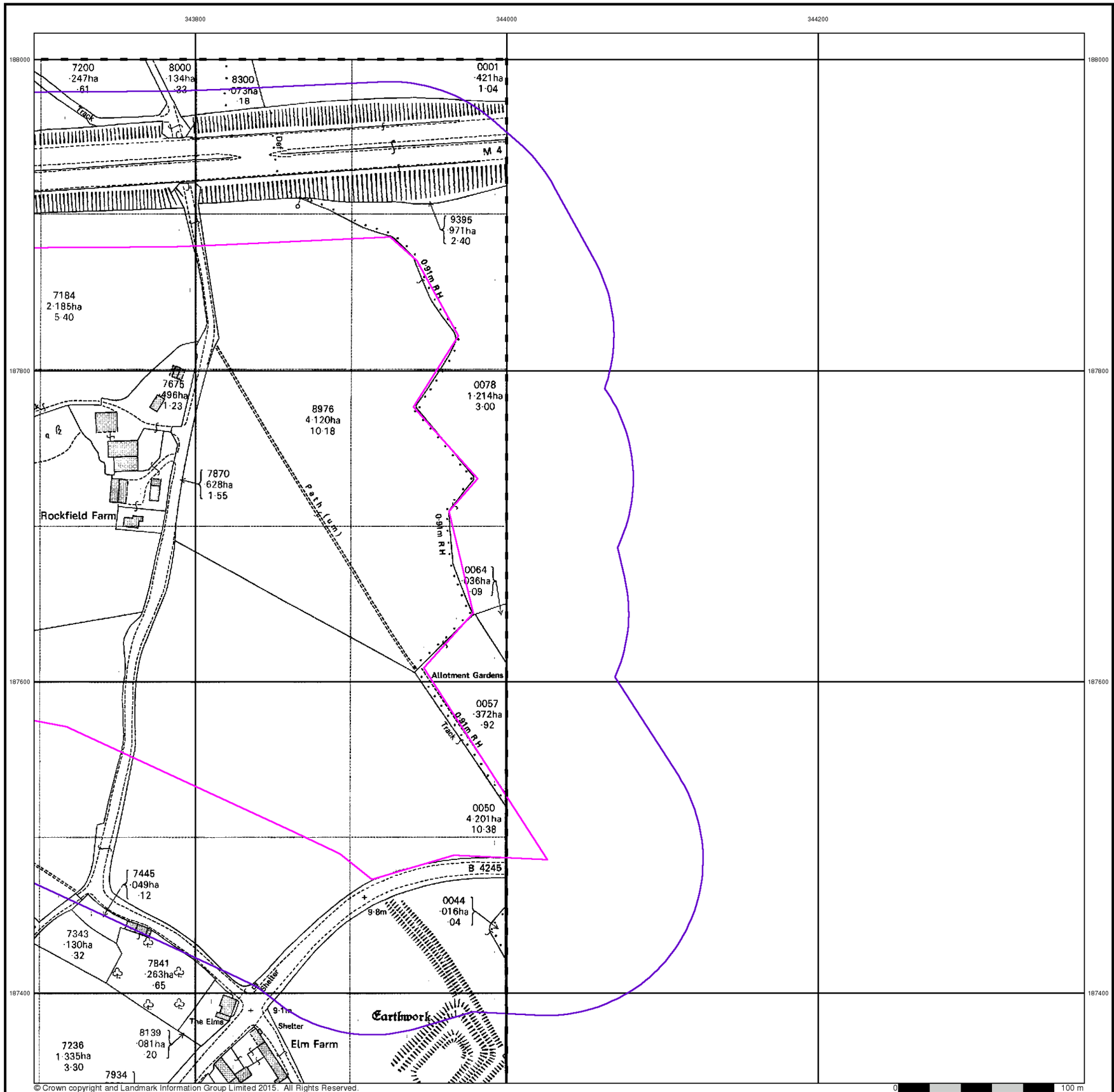


Intégral Géotechnique

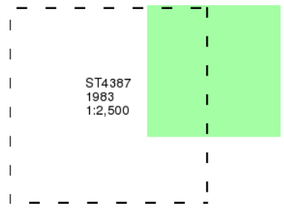
Ordnance Survey Plan

Published 1983

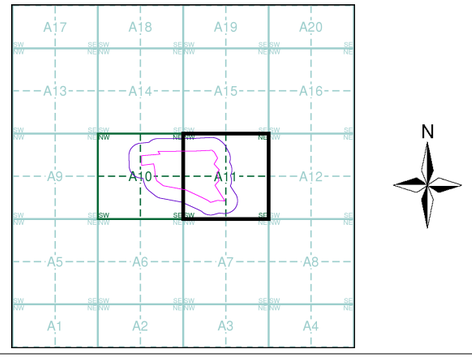
Source map scale - 1:2,500

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 A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

Landmark Information Group
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Intégral Géotechnique

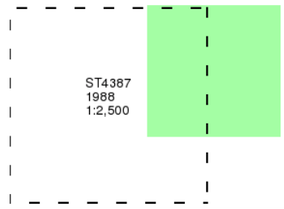
Ordnance Survey Plan

Published 1988

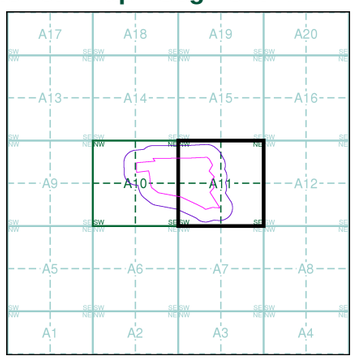
Source map scale - 1:2,500

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 A11



Order Details

Order Number:	72679722_1_1
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Slice:	A
Site Area (Ha):	16.73
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Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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Intégral Géotechnique

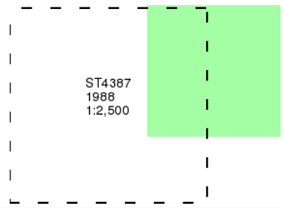
Additional SIMs

Published 1988

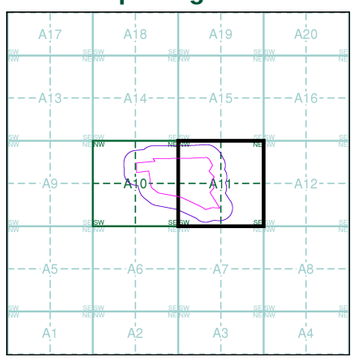
Source map scale - 1:2,500

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 A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
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Site Details

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Intégral Géotechnique

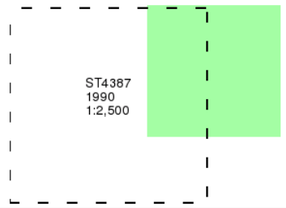
Additional SIMs

Published 1990

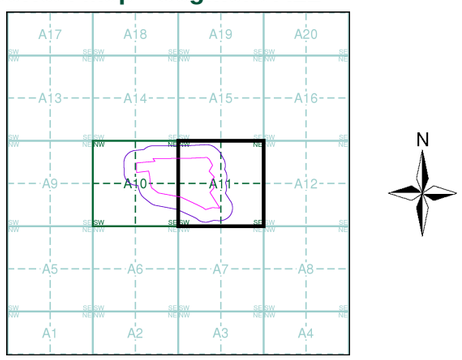
Source map scale - 1:2,500

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 A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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Intégral Géotechnique

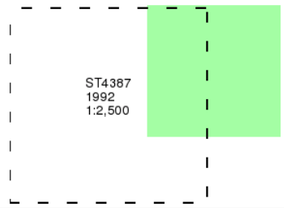
Additional SIMs

Published 1992

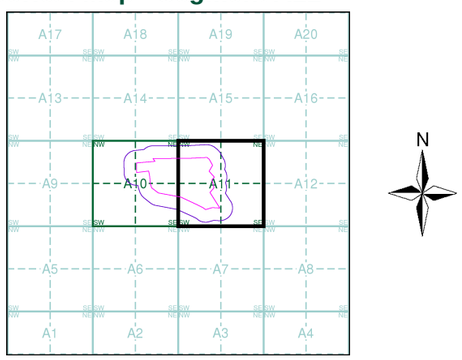
Source map scale - 1:2,500

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.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

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Slice:	A
Site Area (Ha):	16.73
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Site Details

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Intégral Géotechnique

Large-Scale National Grid Data

Published 1994

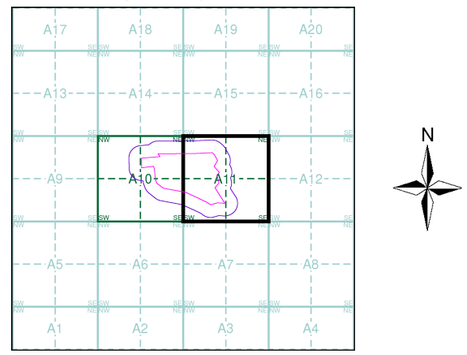
Source map scale - 1:2,500

'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)

ST4388 1994 1:2,500	ST4488 1994 1:2,500
ST4387 1994 1:2,500	ST4487 1994 1:2,500

Historical Map - Segment A11



Order Details

Order Number:	72679722_1_1
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National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
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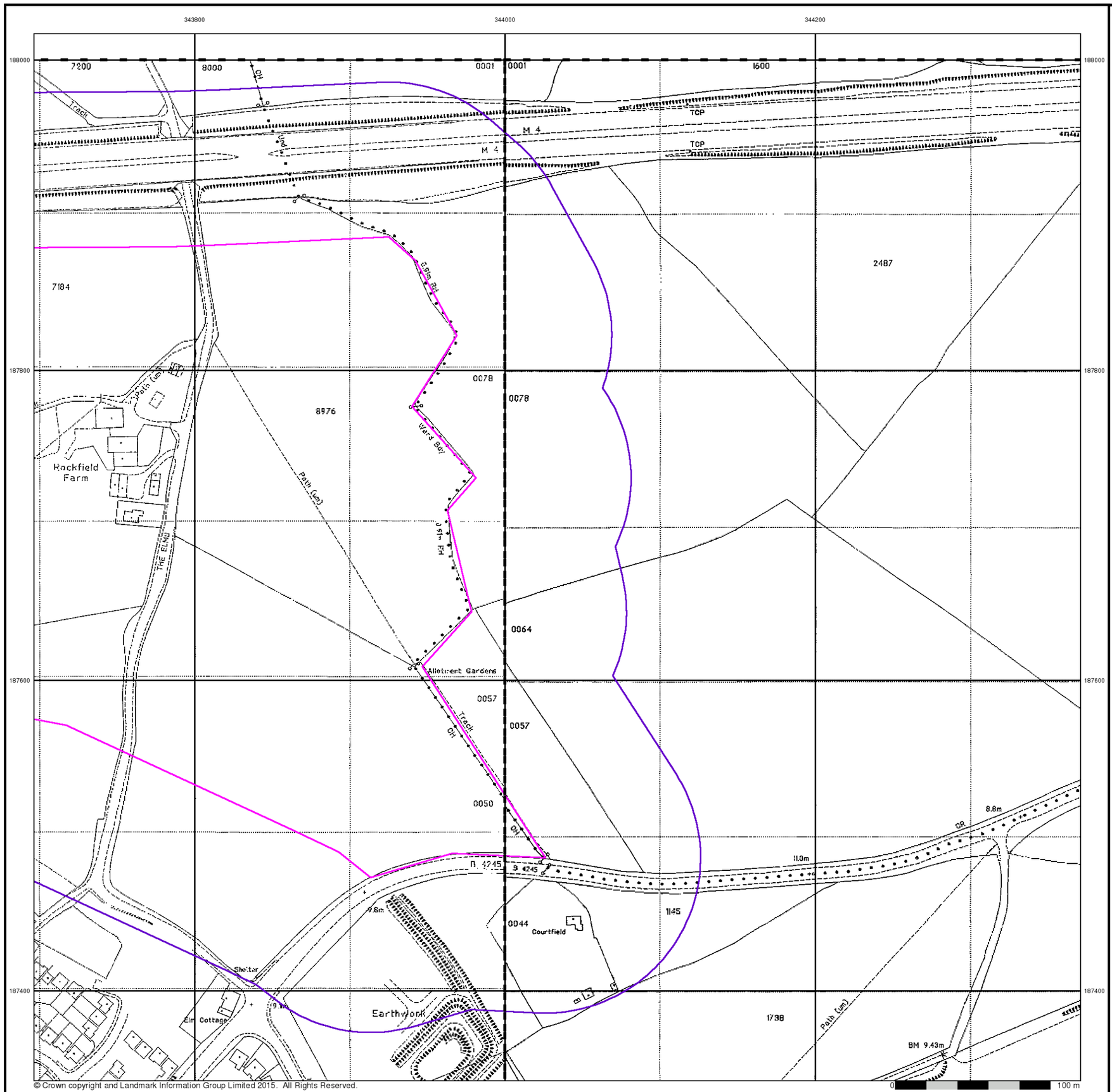

Intégral Géotechnique

Large-Scale National Grid Data

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'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.

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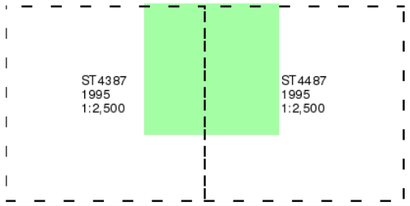
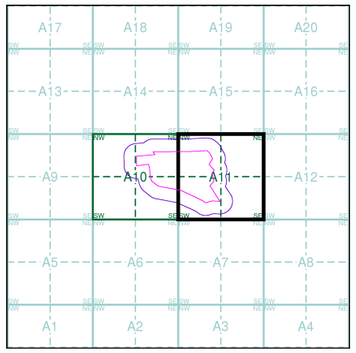


Historical Map - Segment A11



Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343720, 187710
Slice:	A
Site Area (Ha):	16.73
Search Buffer (m):	100

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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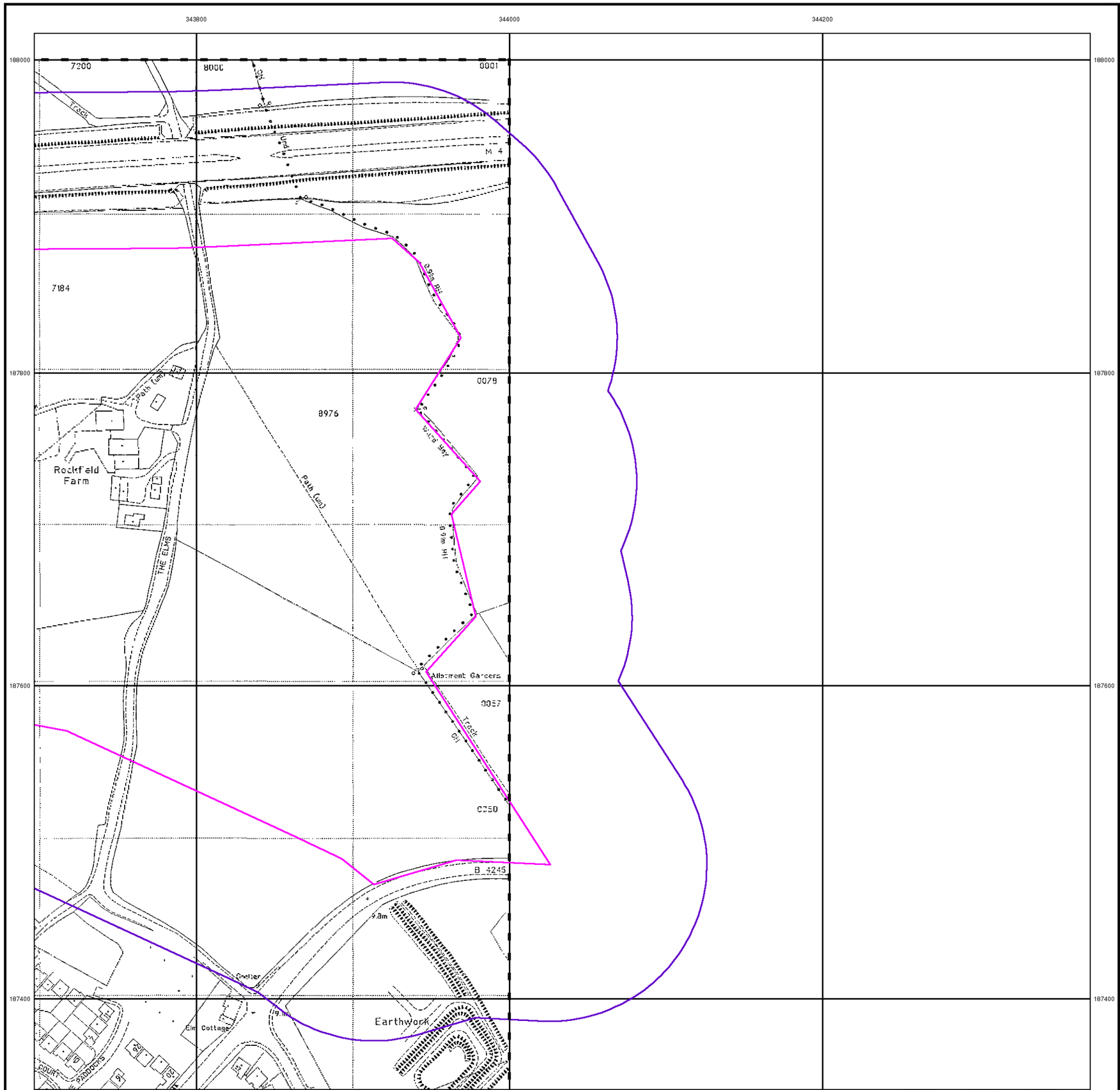

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Large-Scale National Grid Data

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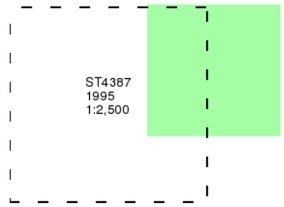
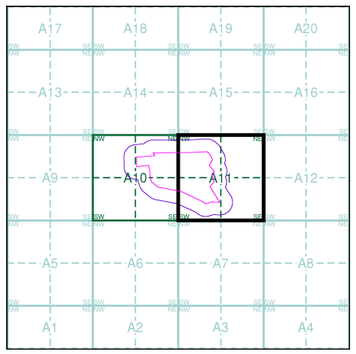


Historical Map - Segment A11



Order Details

Order Number:	72679722_1_1
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Slice:	A
Site Area (Ha):	16.73
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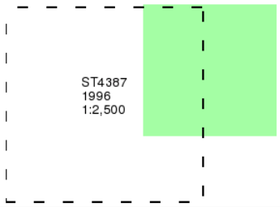
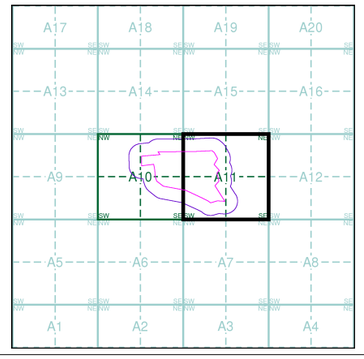


Historical Map - Segment A11



Order Details

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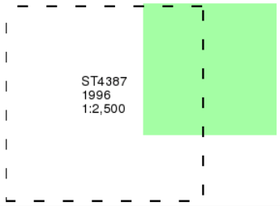
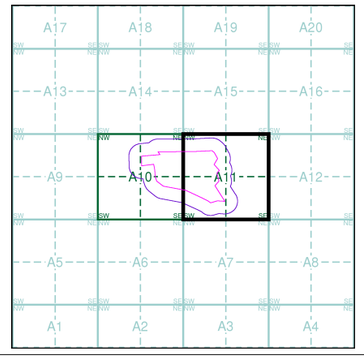


Historical Map - Segment A11



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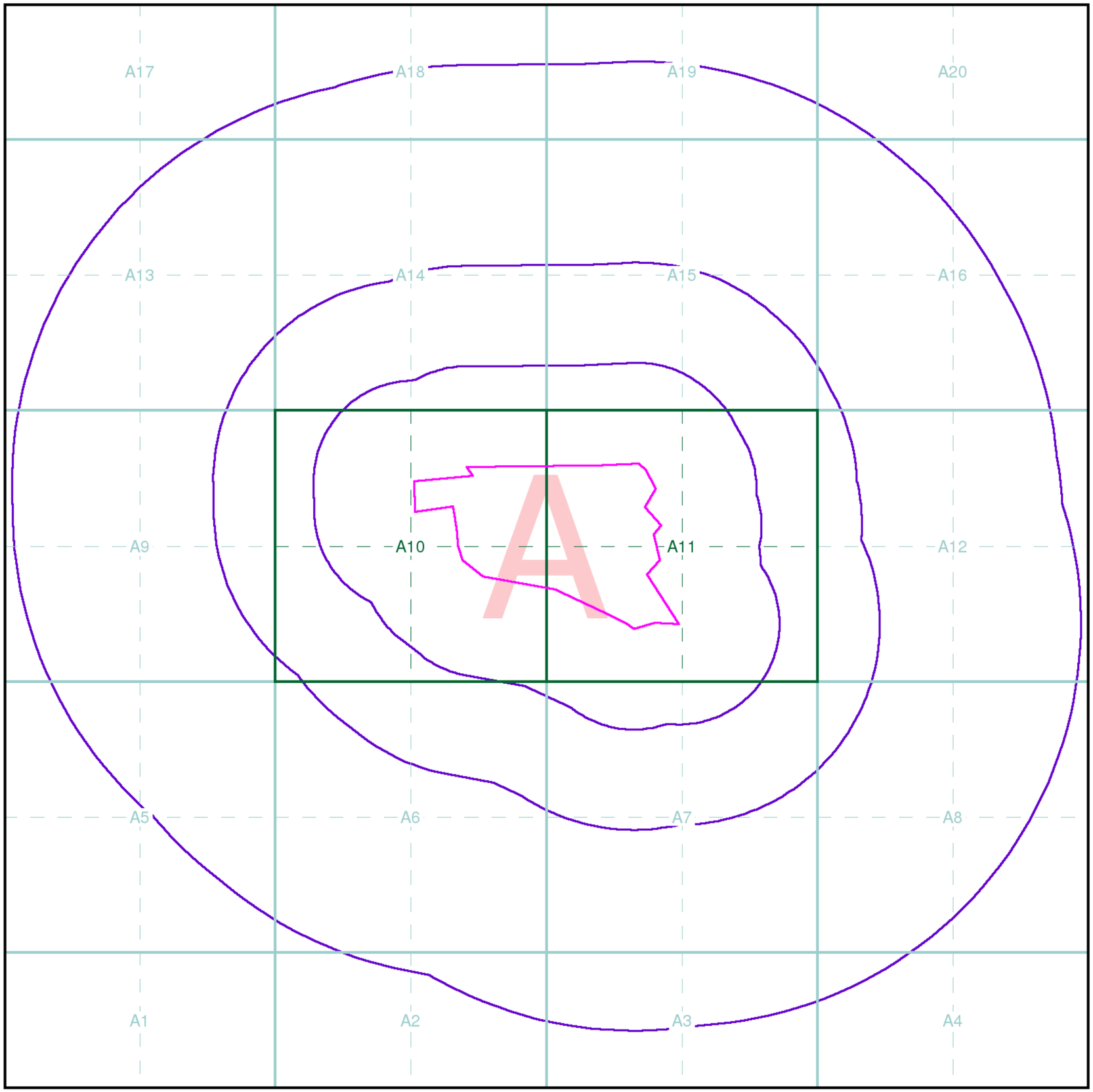

Intégral Géotechnique

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:

Ordnance Survey® Licensed Partner

British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL

Cyfoeth Naturiol Cymru Natural Resources Wales

Envirocheck reports are compiled from 136 different sources of data.

Client Details

MR H Pritchard, Integral Geotechnique, Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

Order Details

Order Number:	72679722_1_1
Customer Ref:	11631/SI
National Grid Reference:	343730, 187710
Site Area (Ha):	16.73
Search Buffer (m):	1000

Site Details

Rockfield Farm, Undy, Caldicot, NP26 3EL

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

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Web: www.envirocheck.co.uk

APPENDIX B

BGS RADON REPORT

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

GeoReports

Alison Trotman
Integral Geotechnique
7 Beddau Way
Castlegate Business Park
Caerphilly
Mid Glamorgan
CF83 2AX

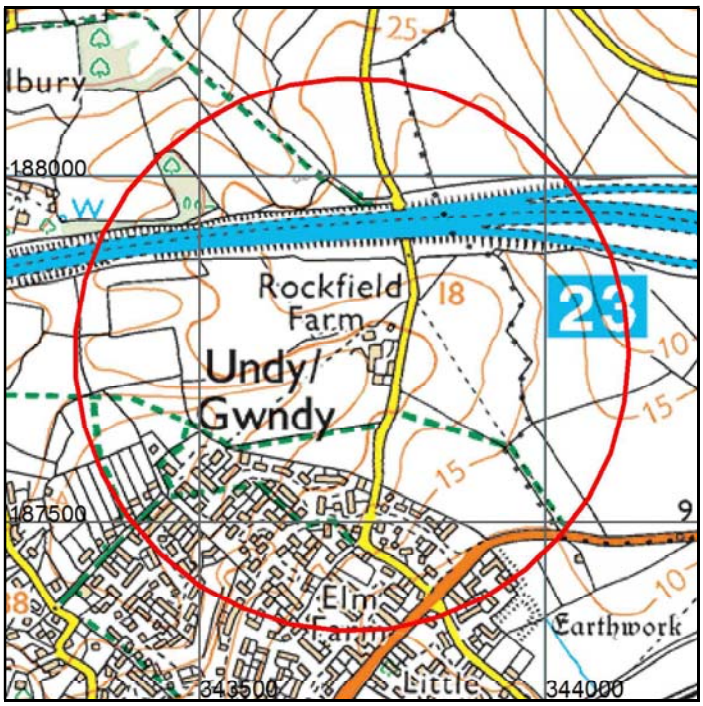
Radon Report: England and Wales

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

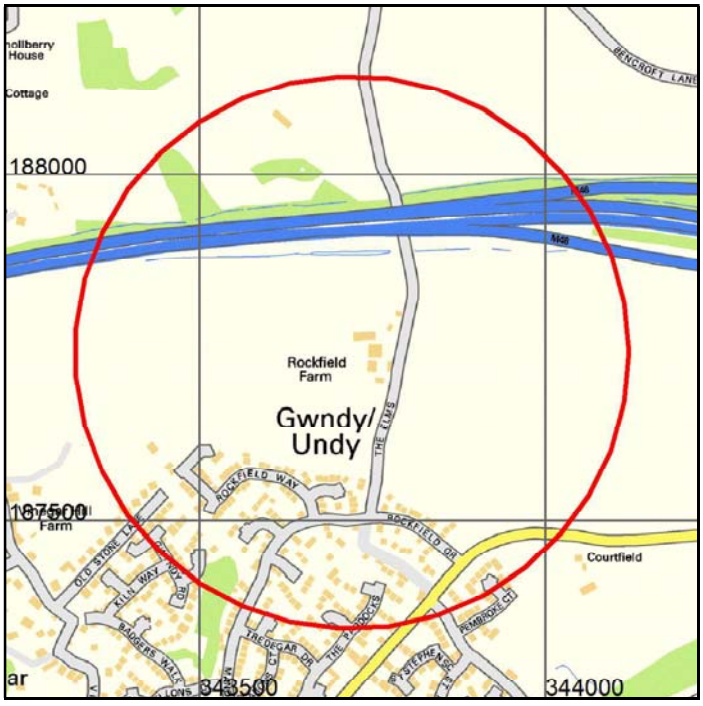
Report Id: ***GR_212296/1***

Client reference: 11631/SI

Search location



This product includes mapping data licensed from Ordnance Survey.
© Crown Copyright and/or database right 2015. Licence number 100021290 EUL
Scale: 1:10 000 (1cm = 100 m)



Contains Ordnance Survey data © Crown Copyright and database right 2015
OS Street View: Scale: 1:10 000 (1cm = 100 m)

This report describes a site located at National Grid Reference 343721, 187743. Note that for sites of irregular shape, this point may lie outside the site boundary. Where the client has submitted a site plan the assessment will be based on the area given.

Search location indicated in red

Radon Report: England and Wales

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

Requirement for radon protective measures
The determination below follows advice in *BR211 Radon: Guidance on protective measures for new buildings (2007 edition)*, which also provides guidance on what to do if the result indicates that protective measures are required.

BASIC RADON PROTECTIVE MEASURES ARE REQUIRED FOR THE REPORT AREA.

The BGS is not able to provide advice on the technical specifications of 'basic' and 'full' radon protective measures. This information is detailed in **BRE Report BR211 Radon: guidance on protective measures for new buildings** which may be purchased from **brebookshop.com.** This report offers guidance on the technical solutions that are required to satisfy Building Regulations requirements.

Technical solutions to radon protection in new build and existing dwellings in radon affected areas are available on the BRE web site at:
http://www.bre.co.uk/page.jsp?id=1626 and http://www.bre.co.uk/radon/ and in a range of technical reports available from **brebookshop.com;** Tel: 01923 664262, email: bookshop@bre.co.uk.
Summary guidance is available on the web at:
http://www.bre.co.uk/radon/protect.html.

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

Radon in existing buildings

Is this property in a radon affected area – YES

The answer to the standard enquiry on house purchase known as **CON29 Standard Enquiry of Local Authority 3.13 Radon Gas: Location of the Property in a radon Affected Area is YES** this property is in a Radon Affected Area as defined by Public Health England (PHE).

The estimated probability of the property being above the Action Level for radon is: 3-5% (INTERMEDIATE PROBABILITY).

The result informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property. The only way to determine whether it is above or below the Action Level is to carry out a radon measurement within the existing property.

Radon Affected Areas are designated by Public Health England. They advise that radon gas should be measured in all properties within Radon Affected Areas.

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

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

In radon affected homes, the problem of radon can usually be tackled with simple, effective and relatively inexpensive measures. These measures are comparable in cost to work such as damp-proofing and timber treatment. You can get practical advice about construction work to reduce radon levels from the Building Control Officer at your local council.

For further information, advice about radon, its health risks and details of how to order the radon test, please contact the PHE Radon Helpline on 01235 822622 or go online at www.ukradon.org or write to Radon Survey, Public Health England, Centre for Radiation, Chemical and Environmental Hazards, Chilton, Didcot, Oxon, OX11 0RQ, email: radon@hpa.org.uk. You can obtain an information pack from the PHE free Radon answerphone on 0800 614529

What is radon?

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

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

Radon in workplaces

The Ionising Radiation Regulations, 1999, require employers to take action when radon is present above a defined level in the workplace. Advice may be obtained from your local Health and Safety Executive Area Office or the Environmental Health Department of your local authority. The BRE publishes a guide (BR293)**: Radon in the workplace.** BRE publications may be obtained from the BRE Bookshop, Tel: 01923 664262, email: bookshop@bre.co.ukwebsite: www.brebookshop.com

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General Terms & Conditions

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

Report issued by
BGS Enquiry Service

APPENDIX C

WINDOWLESS SAMPLE BOREHOLE LOGS

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 1** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
					0.40			Firm to stiff brown sandy silty CLAY with some to gravel and fine roots.
								End of Borehole at 0.40 m
		Depth (m)	Type	Results				

0 1 2 3 4 5 6 7 8 9 10

Remarks :

Borehole dry.
Sampler refused at 0.4m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 5%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 2** Sheet 1 of 1

Location :	Client:	Coordinates :	Hole Type :
Undy	Monmouthshire County Council	- -	WS

Equipment :	Diameter of Casing :	Level :	Scale :
Dart Window Sampling Rig		-	1:50

Diameter of Boring :	Depth of Casing :	Dates	Logged By :
100mm		11/08/2015	

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
					0.40			Firm brown sandy silty CLAY with some to many gravels.
								End of Borehole at 0.40 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 0.6m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 8%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 3** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20			TOPSOIL
								Soft to firm brown sandy silty CLAY with occasional gravel.
					1.80			Soft to firm brown silty sandy gravelly CLAY with occasional gravel
					2.90			Soft becoming firm below 3.4m light brown silty sandy CLAY with some to many gravels
					3.40			End of Borehole at 3.40 m

| Depth (m) | Type | Results |

Remarks :

Borehole wet @ 2.5m.
Sampler refused at 3.5m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 6%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 4** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
					0.60			Firm brown sandy silty CLAY with some fine roots and occasional gravel.
								End of Borehole at 0.60 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 0.6m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 7%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 5** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
					0.60			Firm to stiff light brown sandy silty CLAY with some fine roots and occasional gravel.
								End of Borehole at 0.60 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 0.6m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 8%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 6** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20			TOPSOIL
								Soft to firm brown sandy silty CLAY
					1.80			
					1.90			Dense SAND and GRAVEL
								End of Borehole at 1.90 m

0 1 2 3 4 5 6 7 8 9 10

Depth (m)	Type	Results

Remarks :

Borehole dry.
Sampler refused at 1.9m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 6%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 7** Sheet 1 of 1

Location :	Client:	Coordinates :	Hole Type :
Undy	Monmouthshire County Council	- -	WS

Equipment :	Diameter of Casing :	Level :	Scale :
Dart Window Sampling Rig		-	1:50

Diameter of Boring :	Depth of Casing :	Dates	Logged By :
100mm		11/08/2015	

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			TOPSOIL
					0.30			Firm brown sandy silty CLAY
								Dense light brown SAND with many gravels
					0.80			End of Borehole at 0.80 m
		Depth (m)	Type	Results				

0 1 2 3 4 5 6 7 8 9 10

Remarks :

Borehole dry.
Sampler refused at 0.8m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 4.5%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 8** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Window Sampling Drilling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
								Firm to stiff brown sandy silty CLAY with some to many gravel and fine roots.
					1.30			End of Borehole at 1.30 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 1.3m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 5%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 9** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment :	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 12/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20			TOPSOIL
								Soft to firm brown sandy silty CLAY with some fine roots.
					2.00			Soft to firm to soft silty sandy CLAY possible water ingress. - Very soft at 2.7m depth
					2.70			Dense light brown clayey silty gravelly cobbly SAND (wet)
					3.40			End of Borehole at 3.40 m
		Depth (m)	Type	Results				

0 1 2 3 4 5 6 7 8 9 10

Remarks :

Borehole wet below 2.5m
Sampler refused at 3.4m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 4%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
RQD - Rock Quality Designation

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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 10** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 12/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20			TOPSOIL
								Soft to firm sandy silty CLAY with occasional gravel.
					1.30			
					1.40			Dense light brown SAND with many gravels.
								End of Borehole at 1.40 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 1.4m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 6%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 11** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig.	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 12/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
								Firm brown sandy silty CLAY with some to many gravel and fine roots.
					1.30			End of Borehole at 1.30 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 1.3m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 5%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
SCR - Solid Core Recovery
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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS 12**
		Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 12/08/2015	Logged By :

Well	Water Strikes	Samples & In-situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00	SPT	N=48 (2,2,2,6,10,30)				TOPSOIL
		0.00	SPT		0.20			
					0.40			Firm to stiff brown sandy silty CLAY with some to many gravel.
								End of Borehole at 0.60 m
		Depth (m)	Type	Results				

Remarks :

Borehole dry.
Sampler refused at 0.6m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 6%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
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Project Name :	Project No.:	Borehole No.:
Rockfield Road, Undy	**11631**	**WS13** Sheet 1 of 1

Location : Undy	Client: Monmouthshire County Council	Coordinates : - -	Hole Type : WS
Equipment : Dart Window Sampling Rig	Diameter of Casing :	Level : -	Scale : 1:50
Diameter of Boring : 100mm	Depth of Casing :	Dates 11/08/2015	Logged By : DPD

Well	Water Strikes	Samples & In-situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20			TOPSOIL
					0.60			Firm to stiff light brown sandy silty CLAY with some fine roots and occasional gravel.
								End of Borehole at 0.60 m

Depth (m) Type Results

Remarks :

Borehole dry.
Sampler refused at 0.6m depth.
CBR undertaken by MEXE cone probe at 0.2m depth = 5%.

Key :

D - Small disturbed sample
B - Bulk disturbed sample
ES - Environmental soil sample
SPT - Standard Penetration Test (split spoon)
CPT - Standard Penetration Test (solid cone)
W - Water sample
U - Undisturbed sample
TCR - Total Core Recovery
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Intégral Géotechnique - Continuous CPT

JOB: Rockfield Farm, Undy **Date:** August 2015

Hole Ref WS1

Depth	Blows per 75mm				SPT N
0.00-0.30	1	2	5	14	22
0.30-0.60	12	14	24 for 20		50

Hole Ref WS2

Depth	Blows per 75mm				SPT N
0.00-0.30	2	3	4	5	14
0.30-0.60	7	10	3 for 60		50

Hole Ref WS3

Depth	Blows per 75mm				SPT N
0.00-0.30	2	3	4	3	12
0.30-0.60	3	3	2	3	11
0.60-0.90	2	4	3	2	11
0.90-1.20	2	2	2	2	8
1.20-1.50	2	2	3	2	9
1.50-1.80	3	4	3	3	13
1.80-2.10	2	2	2	2	8
2.10-2.40	2	2	0	0	4
2.40-2.70	0	0	0	0	0
2.70-3.00	0	0	0	1	1
3.00-3.30	4	8	8	9	29
3.30-3.60	10	14	26 for 50		50

Hole Ref WS4

Depth	Blows per 75mm				SPT N
0.00-0.30	1	2	3	3	9
0.30-0.60	3	3	5	11	22
0.60-0.90	15	22	13 for 50		50

Hole Ref WS5

Depth	Blows per 75mm				SPT N
0.00-0.30	1	2	4	43	50

Hole Ref WS6

Depth	Blows per 75mm				SPT N
0.00-0.30	1	1	2	2	6
0.30-0.60	2	2	2	2	8
0.60-0.90	2	2	2	2	8
0.90-1.20	3	3	2	3	11
1.20-1.50	2	2	2	3	9
1.50-1.80	2	4	9	10	25
1.80-2.10	10	10	10	11	41
2.10-2.40	30	20 for 30			50

Hole Ref WS7

Depth	Blows per 75mm				SPT N
0.00-0.30	2	2	3	3	10
0.30-0.60	4	7	10	10	31
0.60-0.90	20	20	10 for 35		50

Hole Ref WS8

Depth	Blows per 75mm				SPT N
0.00-0.30	2	5	4	3	14
0.30-0.60	4	9	8	7	28
0.60-0.90	10	11	10	12	43
0.90-1.20	15	15	20		50

Intégral Géotechnique - Continuous CPT

JOB: Rockfield Farm, Undy **Date:** August 2015

Hole Ref WS9

Depth	Blows per 75mm				SPT N
0.00-0.30	2	2	2	2	8
0.30-0.60	3	3	2	2	10
0.60-0.90	2	2	1	2	7
0.90-1.20	2	1	2	2	7
1.20-1.50	2	2	2	2	8
1.50-1.80	1	1	1	1	4
1.80-2.10	2	2	2	0	6
2.10-2.40	0	0	0	0	0
2.40-2.70	0	5	7	9	21
2.70-3.00	9	10	13	10	42
3.00-3.30	20	30			50

Hole Ref WS10

Depth	Blows per 75mm				SPT N
0.00-0.30	1	1	3	3	8
0.30-0.60	2	2	2	3	9
0.60-0.90	2	1	2	2	7
0.90-1.20	2	2	2	2	8
1.20-1.50	1	1	10	24	36
1.50-1.80	25	14	11 for 20		50

Hole Ref WS11

Depth	Blows per 75mm				SPT N
0.00-0.30	2	2	2	3	9
0.30-0.60	3	2	3	2	10
0.60-0.90	2	3	2	2	9
0.90-1.20	15	25	10 for 20		50

Hole Ref WS12

Depth	Blows per 75mm				SPT N
0.00-0.30	2	6	10	30	48
0.30-0.60	40	10 for 10			50

Hole Ref WS13

Depth	Blows per 75mm				SPT N
0.00-0.30	2	3	24	30	59

Hole Ref WS14

Depth					SPT N
0.00-0.30	2	2	2	2	8
0.30-0.60	2	3	2	3	10
0.60-0.90	2	3	3	3	11
0.90-1.20	6	12	19	13 fo	50

Hole Ref WS15

Depth	Blows per 75mm				SPT N
0.00-0.30	7	3	9	26	45
0.30-0.60	30	20 for 40			50

Hole Ref WS17

Depth	Blows per 75mm				SPT N
0.00-0.30	1	3	4	3	11
0.30-0.60	3	3	3	3	12
0.60-0.90	4	5	4	3	16
0.90-1.20	4	4	4	4	16
1.20-1.50	4	3	5	4	16
1.50-1.80	5	8	10	12	35
1.80-2.10	20	24	6 for 10		50

APPENDIX D

FALLING HEAD TEST RESULTS

PERMEABILITY TEST DATA

PROJECT	**Rockfield Farm, Undy**	**JOB No.**	**11631**

TYPE	Falling			
DATE	10/08/2015	**TIME**	hrs	
BOREHOLE NUMBER	WS2	**TEST No.**	1	
Depth of borehole at start of test (mBGL) h_i	0.40	m		From top of casing
Depth of borehole at end of test (mBGL) h_e	0.40	m		From top of casing OK
Borehole diameter (m) D	0.087	m		
Piezometer diameter (m) d	0.087	m		
Filter Backfill	No			
Soil in casing (m) L	0.00	m		
L/D Ratio	4.6			
Hole in Soil below base of casing (m) L	0.40	m		
Depth of casing (mBGL) h_c	0.00	m		From top of casing
Height of casing above ground level h_{uc}	0.00	m		
Ground water level (mBGL) H_G	0.40	m		Worst-case
Water level at start of test below top of casing h_o	0.00	m		
$H_{G\ TEST}$	0.40	m		

Elapsed Time t (mins)	**t (s)**	**Depth of water below top of casing h (m)**	**Head of Water H = (H_g - h) (m)**	**Ratio H/H_0**
0	0	0.01	0.4	0.98
0.5	30	0.03	0.4	0.93
1	60	0.04	0.4	0.90
1.5	90	0.05	0.4	0.88
2	120	0.07	0.3	0.83
2.5	150	0.10	0.3	0.75
3	180	0.13	0.3	0.68
3.5	210	0.13	0.3	0.68
4	240	0.14	0.3	0.65
4.5	270	0.16	0.2	0.60
5	300	0.17	0.2	0.58
10	600	0.25	0.2	0.38
15	900	0.30	0.1	0.25
30	1800	0.40	0.0	0.00

TEST SECTION

Length L = **0.40** m

Area A = **0.1153** m^2

INTAKE FACTOR

Refer to BS 5930 Figure 7

Type **Special**

$$F = \frac{D*2.32*\pi*(L/D)}{\log_e[1.1(L/D)+((1+1.1(L/D)^2)^{0.5}]}$$

F = **1.27**

TIME LAG

T = Time from start of test when h = 0.37 h_o

See graph opposite

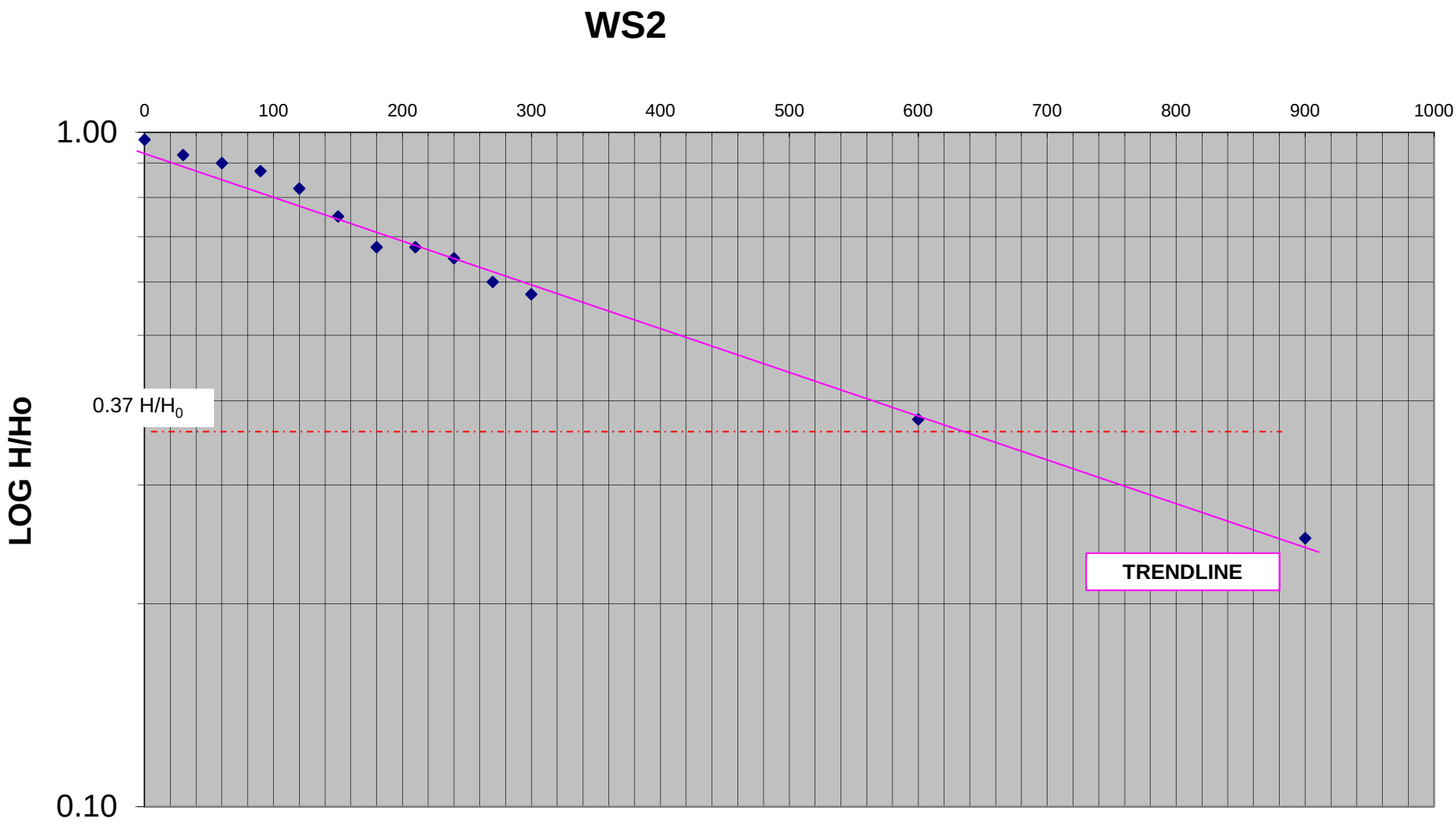
T = **640** s

PERMEABILITY

K = A / (F * T)

K = **1.42E-04** m/s

COMMENTS


WS2
0
100
200
300
400
500
600
700
800
900
1000
1.00
0.10
LOG H/Ho
0.37 H/H0
TRENDLINE

PERMEABILITY TEST DATA

PROJECT	**Rockfield Farm, Undy**	**JOB No.**	**11631**

TYPE	Falling			
DATE	10/08/2015	**TIME**	hrs	
BOREHOLE NUMBER	WS4	**TEST No.**	1	
Depth of borehole at start of test (mBGL) h_i		0.60 m		From top of casing
Depth of borehole at end of test (mBGL) h_e		0.60 m		From top of casing OK
Borehole diameter (m) D		0.087 m		
Piezometer diameter (m) d		0.087 m		
Filter Backfill		No		
Soil in casing (m) L		0.00 m		
L/D Ratio		6.9		
Hole in Soil below base of casing (m) L		0.60 m		
Depth of casing (mBGL) h_c		0.00 m		From top of casing
Height of casing above ground level h_{uc}		0.00 m		
Ground water level (mBGL) H_G		0.60 m		Worst-case
Water level at start of test below top of casing h_o		0.00 m		
	$H_{G\ TEST}$	0.60 m		

Elapsed Time t (mins)	**t (s)**	**Depth of water below top of casing h (m)**	**Head of Water H = (H_g - h) (m)**	**Ratio H/H_0**
0	0	0.01	0.6	0.98
0.5	30	0.10	0.5	0.83
1	60	0.26	0.3	0.57
1.5	90	0.34	0.3	0.43
2	120	0.36	0.2	0.40
2.5	150	0.39	0.2	0.35
3	180	0.40	0.2	0.33
3.5	210	0.40	0.2	0.33
4	240	0.41	0.2	0.32
4.5	270	0.41	0.2	0.32
5	300	0.41	0.2	0.32
7	420	0.42	0.2	0.30
15	900	0.47	0.1	0.22
60	3600	0.47	0.1	0.22

TEST SECTION

Length L = **0.60** m

Area A = **0.1699** m^2

INTAKE FACTOR

Refer to BS 5930 Figure 7

Type **Special**

$$F = \frac{D*2.32*\Pi*(L/D)}{\log_e[1.1(L/D)+((1+1.1(L/D)^2)^{0.5}]}$$

F = **1.62**

TIME LAG

T = Time from start of test when h = 0.37 h_o

See graph opposite

T = **200** s

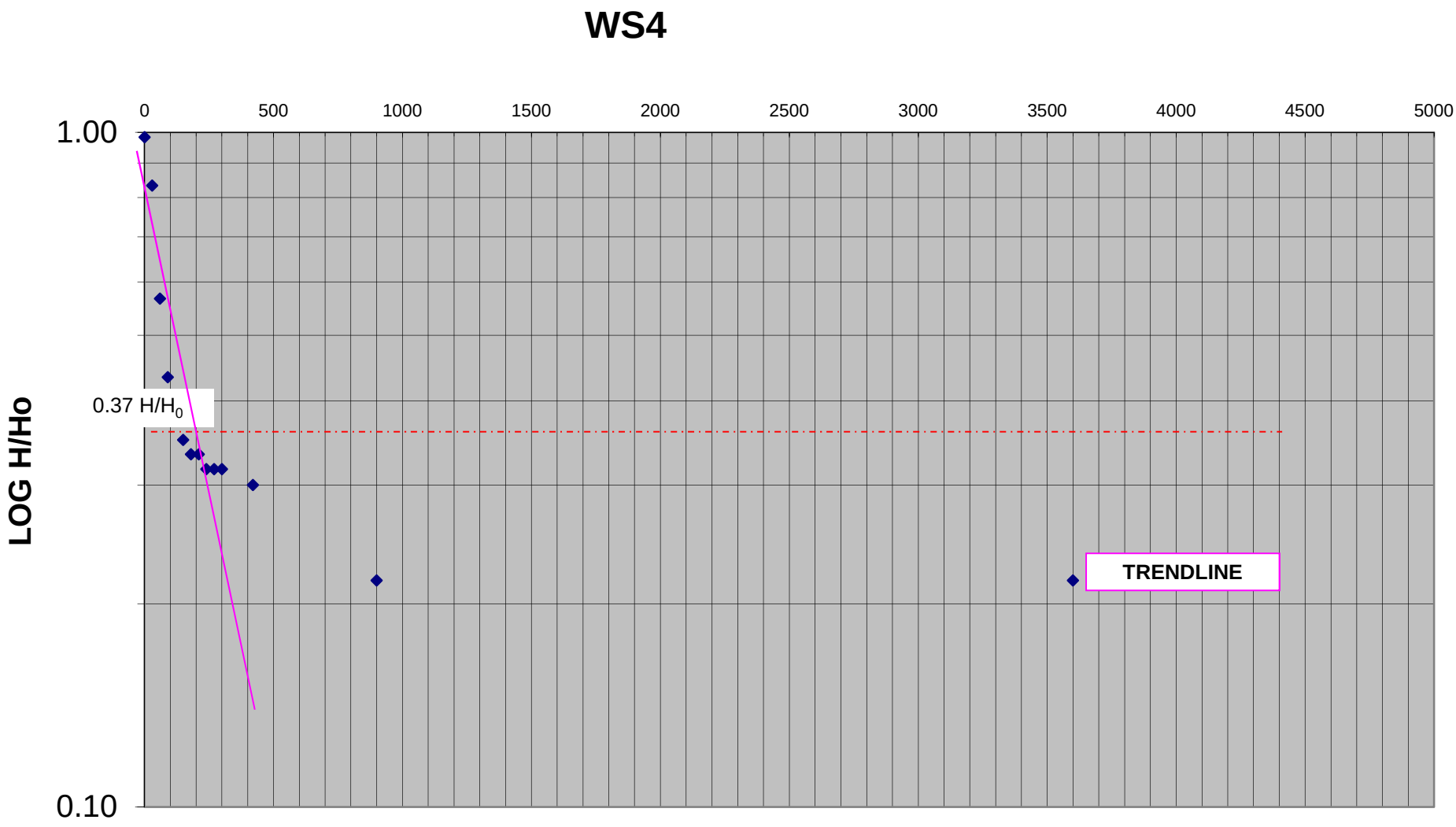
PERMEABILITY

K = A / (F * T)

K = **5.25E-04** m/s

COMMENTS

No infiltration observed after 15 minutes (0.47m depth) - calculated result only applies to soil above this depth.


WS4
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
1.00
0.10
LOG H/Ho
0.37 H/H0
TRENDLINE

PERMEABILITY TEST DATA

PROJECT	**Rockfield Farm, Undy**			**JOB No.**	**11631**
TYPE	Falling				
DATE	12/08/2015	**TIME**	hrs		
BOREHOLE NUMBER	WS5	**TEST No.**	1		
Depth of borehole at start of test (mBGL) h_i		0.60	m	From top of casing	
Depth of borehole at end of test (mBGL) h_e		0.60	m	From top of casing	
				OK	
Borehole diameter (m) D		0.101	m		
Piezometer diameter (m) d		0.101	m		
Filter Backfill		No			
Soil in casing (m) L		0.00	m		
L/D Ratio		5.9			
Hole in Soil below base of casing (m) L		0.60	m		
Depth of casing (mBGL) h_c		0.00	m	From top of casing	
Height of casing above ground level h_{uc}		0.00	m		
Ground water level (mBGL) H_G		0.60	m	Worst-case	
Water level at start of test below top of casing h_o		0.00	m		
	$H_{G\ TEST}$	0.60	m		

Elapsed Time t (mins)	t (s)	Depth of water below top of casing h (m)	Head of Water $H = (H_g - h)$ (m)	Ratio H/H_0
0	0	0.00	0.6	1.00
0.5	30	0.04	0.6	0.93
1	60	0.06	0.5	0.90
1.5	90	0.07	0.5	0.88
2	120	0.08	0.5	0.87
2.5	150	0.08	0.5	0.87
3	180	0.08	0.5	0.87
3.5	210	0.09	0.5	0.85
4	240	0.09	0.5	0.85
4.5	270	0.10	0.5	0.83
5	300	0.10	0.5	0.83
6	360	0.10	0.5	0.83
15	900	0.10	0.5	0.83
20	1200	0.11	0.5	0.82
25	1500	0.12	0.5	0.80
30	1800	0.12	0.5	0.80

TEST SECTION

Length L = **0.60** m

Area A = **0.1984** m^2

INTAKE FACTOR

Refer to BS 5930 Figure 7

Type **Special**

$$F = \frac{D*2.32*\prod*(L/D)}{\log_e[1.1(L/D)+((1+1.1(L/D)^2)^{0.5}]}$$

F = **1.71**

TIME LAG

T = Time from start of test when h = 0.37 h_o

See graph opposite

T = **N/A** s

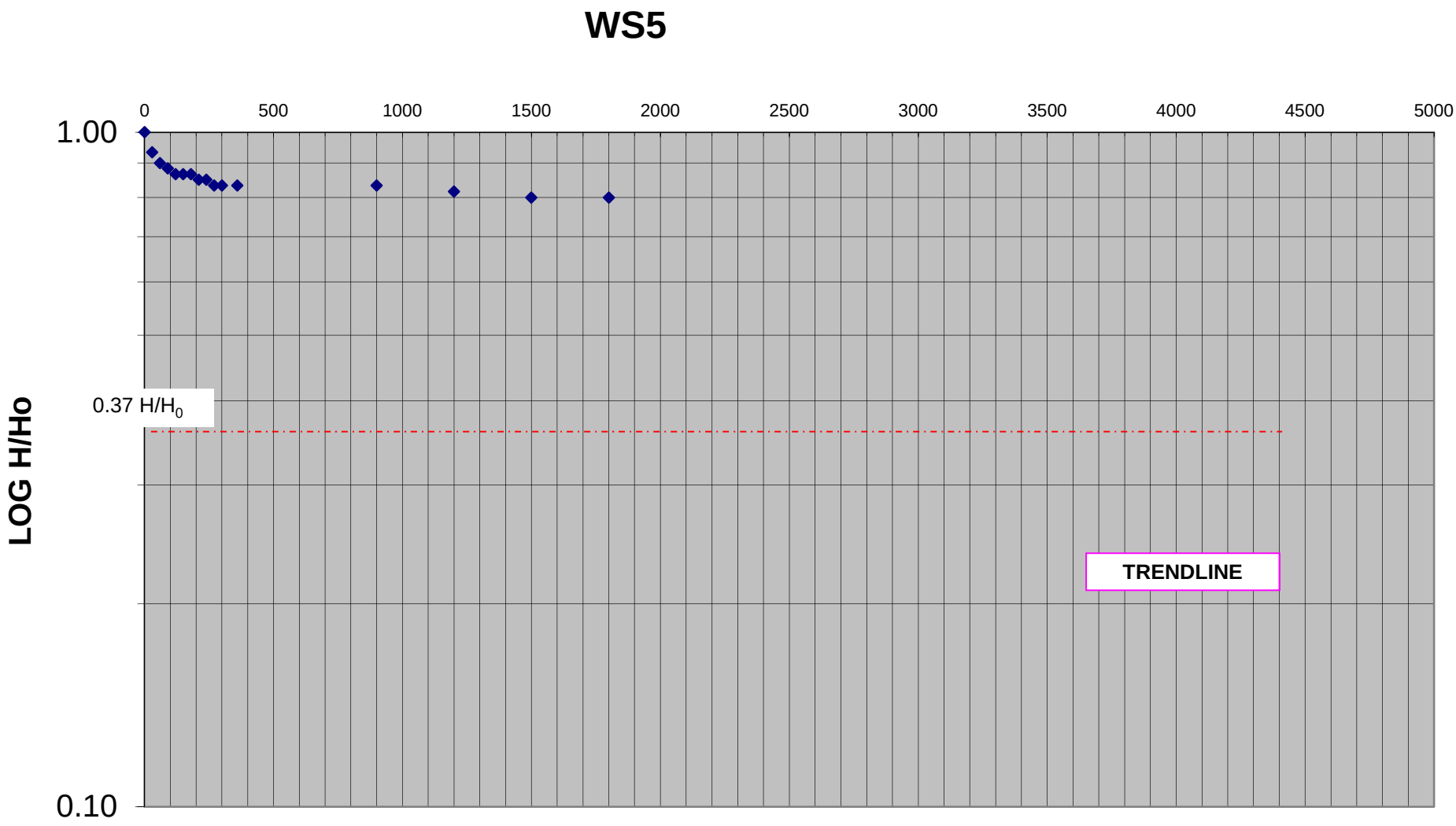
PERMEABILITY

K = A / (F * T)

K = **N/A** m/s

COMMENTS

No infiltration observed after 25 minutes (0.12m depth) - no infiltration rate could be calculated.


WS5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
1.00
0.10
LOG H/Ho
0.37 H/H0
TRENDLINE

PERMEABILITY TEST DATA

PROJECT	**Rockfield Farm, Undy**	**JOB No.**	**11631**

TYPE	Falling			
DATE	12/08/2015	**TIME**	hrs	
BOREHOLE NUMBER	WS9	**TEST No.**	1	
Depth of borehole at start of test (mBGL) h_i		3.40	m	From top of casing
Depth of borehole at end of test (mBGL) h_e		3.40	m	From top of casing OK
Borehole diameter (m) D		0.101	m	
Piezometer diameter (m) d		0.101	m	
Filter Backfill		No		
Soil in casing (m) L		0.00	m	
L/D Ratio		33.7		
Hole in Soil below base of casing (m) L		3.40	m	
Depth of casing (mBGL) h_c		0.00	m	From top of casing
Height of casing above ground level h_{uc}		0.00	m	
Ground water level (mBGL) H_G		3.40	m	Worst-case
Water level at start of test below top of casing h_o		0.00	m	
	$H_{G\ TEST}$	3.40	m	

Elapsed Time t (mins)	**t (s)**	**Depth of water below top of casing h (m)**	**Head of Water $H = (H_g - h)$ (m)**	**Ratio H/H_0**
0	0	0.00	3.4	1.00
0.5	30	3.40	0.0	0.00

TEST SECTION

Length L = **3.40** m

Area A = **1.0868** m^2

INTAKE FACTOR

Refer to BS 5930 Figure 7

Type **Special**

$$F = \frac{D*2.32*\pi*(L/D)}{\log_e[1.1(L/D)+((1+1.1(L/D)^2)^{0.5}]}$$

F = **5.79**

TIME LAG

T = Time from start of test when h = 0.37 h_o

See graph opposite

T = **N/A** s

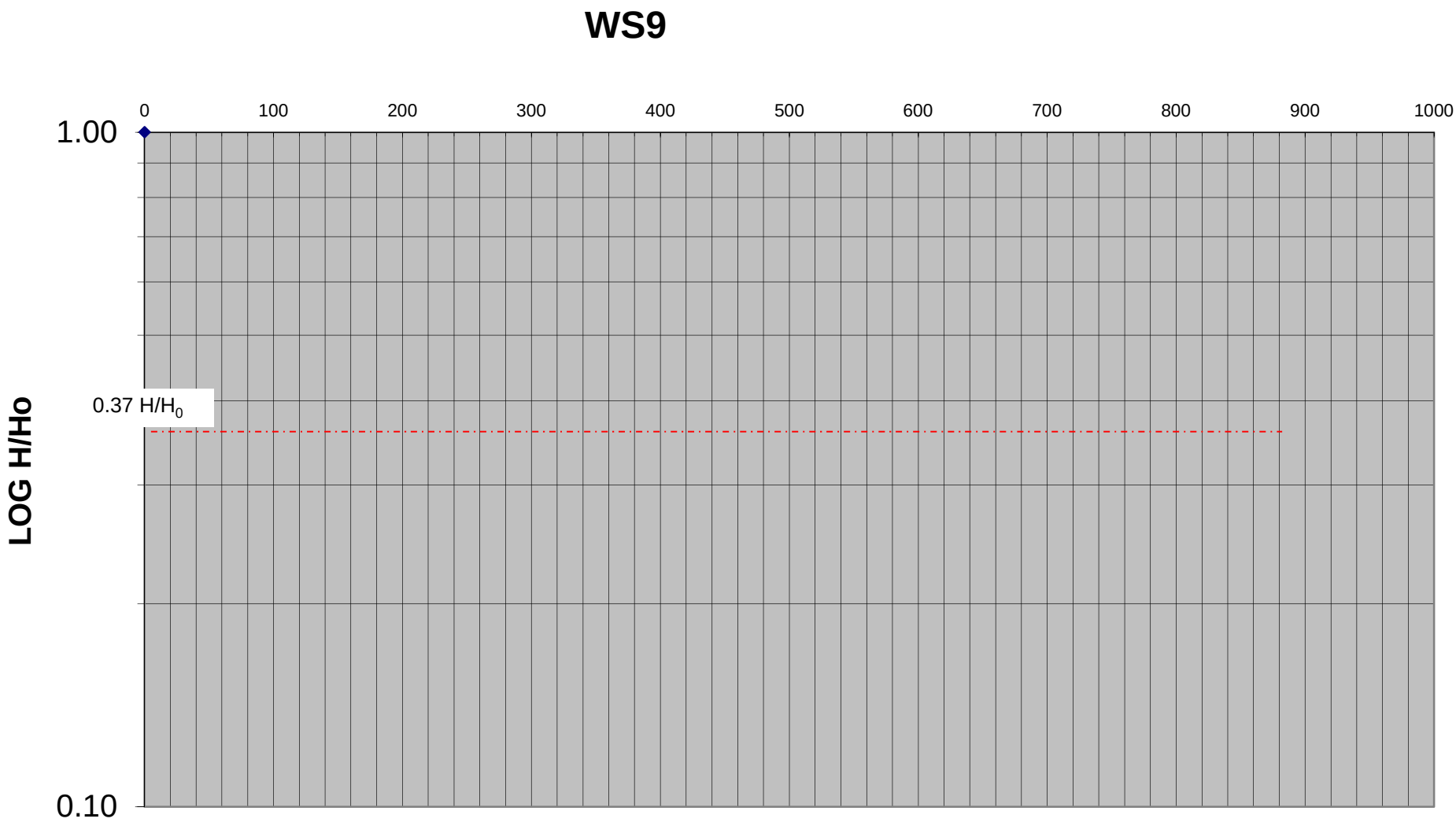
PERMEABILITY

K = A / (F * T)

K = **N/A** m/s

COMMENTS

Water drained away before any measurements could be taken - infiltration rate too rapid to calculate.
(Borehole filled using 2 x 25l water containers)


WS9
0
100
200
300
400
500
600
700
800
900
1000
1.00
0.37 H/H0
0.10
LOG H/Ho

APPENDIX E

LABORATORY CHEMICAL TEST RESULTS (SOILS)

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e: peterd@integralgeotec.com

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

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

Analytical Report Number : 15-77495

Project / Site name:	Undy	**Samples received on:**	21/08/2015
Your job number:	11631-DPD	**Samples instructed on:**	21/08/2015
Your order number:		**Analysis completed by:**	01/09/2015
Report Issue Number:	1	**Report issued on:**	01/09/2015
Samples Analysed:	4 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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

Analytical Report Number: 15-77495

Project / Site name: Undy

Lab Sample Number				477687	477688	477689	477690	
Sample Reference				WS 13 TS	WS 11	WS12	WS 8	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.10	1.10	0.20	1.10	
Date Sampled				20/08/2015	20/08/2015	20/08/2015	20/08/2015	
Time Taken				1500	1500	1500	1500	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	9.6	14	11	6.0	
Total mass of sample received	kg	0.001	NONE	0.37	0.49	0.34	0.43	
General Inorganics								
pH	pH Units	N/A	MCERTS	6.5	8.1	7.1	8.3	
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Total Sulphate as SO_4	mg/kg	50	MCERTS	1100	400	1300	580	
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.025	0.013	0.027	0.014	
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	25	13	27	14	
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.012	0.0067	0.013	0.0072	
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Total Sulphur	mg/kg	50	NONE	570	820	800	260	
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.8	< 0.1	4.3	0.2	
Loss on Ignition @ 450°C	%	0.2	MCERTS	9.4	1.3	12	1.2	
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	< 1.60	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	32	29	8.8	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.0	1.0	1.0	0.4	
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	< 0.2	3.1	< 0.2	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	0.9	0.9	0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	47	48	48	26	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	16	15	8.5	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	52	46	45	9.1	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36	32	32	9.7	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	47	47	48	24	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	120	120	130	

Analytical Report Number : 15-77495

Project / Site name: Undy

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
477687	WS 13 TS	None Supplied	0.10	Brown loam and clay with vegetation.
477688	WS 11	None Supplied	1.10	Light brown clay and sand.
477689	WS12	None Supplied	0.20	Brown loam and clay with vegetation.
477690	WS 8	None Supplied	1.10	Light brown sandy clay with gravel.

Analytical Report Number : 15-77495

Project / Site name: Undy

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX F

SUMMARY OF CHEMICAL RESULTS – TOPSOIL AND SUBSOIL

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11631
Site: Rockfield Farm, Undy
Soil Type: Topsoil and Subsoil
Soil Organic Matter: 1%

METALS AND SEMI-METALS

No.	Location	Depth (m)	Arsenic (mg/kg)	Boron (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (Elemental) (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
1	**WS 13 TS**	**0.10**	23	1.2	1.0	0.8	47	< 4.0	29	52	< 0.3	36	< 1.0	47	160
2	**WS 11**	**1.10**	32	< 0.2	1.0	0.9	48	< 4.0	16	46	< 0.3	32	1.0	47	120
3	**WS12**	**0.20**	29	3.1	1.0	0.9	48	< 4.0	15	45	< 0.3	32	< 1.0	48	120
4	**WS 8**	**1.10**	8.8	< 0.2	0.4	0.2	26	< 4.0	8.5	9.1	< 0.3	9.7	< 1.0	24	130
	Screening Criteria Value		**37.0**	**290.0**	**1.7**	**26.0**	**-**	**21.0**	**2400.0**	**200.0**	**1.2**	**180.0**	**250.0**	**410.0**	**3700.0**
	Source of Screening Criteria Value		C4SL	S4UL	S4UL	C4SL	-	C4SL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL

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SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11631
Site: Rockfield Farm, Undy
Soil Type: Topsoil and Subsoil
Soil Organic Matter: 1%

INORGANIC CHEMICALS & OTHERS

No.	Location	Depth (m)	Cyanide (mg/kg)	Loss on ignition, dried solids (%)	Moisture content at 30 C (%)	Phenol (mg/kg)	pH (pH units)	Water Soluble Sulphate (g/l)	Sulphate Total as SO4 (mg/kg)	Sulphide (mg/kg)	Total Sulphur (mg/kg)	TOC by Ignition in O2 (%)	Equivalent SOM (%)
1	**WS 13 TS**	**0.10**	< 1	9.4	9.6	< 1.0	6.5	0.025	1100	< 1.0	570	2.8	4.82
2	**WS 11**	**1.10**	< 1	1.3	14	< 1.0	8.1	0.013	400	< 1.0	820	< 0.1	<0.1
3	**WS12**	**0.20**	< 1	12	11	< 1.0	7.1	0.027	1300	< 1.0	800	4.3	7.40
4	**WS 8**	**1.10**	< 1	1.2	6.0	< 1.0	8.3	0.014	580	< 1.0	260	0.2	0.34
	Screening Criteria Value		**34.0**	-	-	**280.0**	-	-	-	-	-	-	-
	Source of Screening Criteria Value		ATRISK	-	-	S4UL	-	-	-	-	-	-	-

Intégral Géotechnique

SUMMARY OF LABORATORY SOIL TEST RESULTS

Job No.: 11631
Site: Rockfield Farm, Undy
Soil Type: Topsoil and Subsoil
Soil Organic Matter: 1%

POLYAROMATIC HYDROCARBONS (PAH)

No.	Location	Depth (m)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(ah)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(123cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
1	WS 13 TS	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.10
2	WS 11	1.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.10
3	WS12	0.20	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.10
4	WS 8	1.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.05	< 0.10	< 0.10	< 0.10	< 0.10	< 0.05	< 0.10	< 0.10
	Screening Criteria Value		210.0	170.0	2400.0	7.2	5.0	2.6	320.0	77.0	15.0	0.2	280.0	170.0	27.0	2.3	95.0	620.0
	Source of Screening Criteria Value		S4UL	S4UL	S4UL	S4UL	C4SL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL

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FIGURES

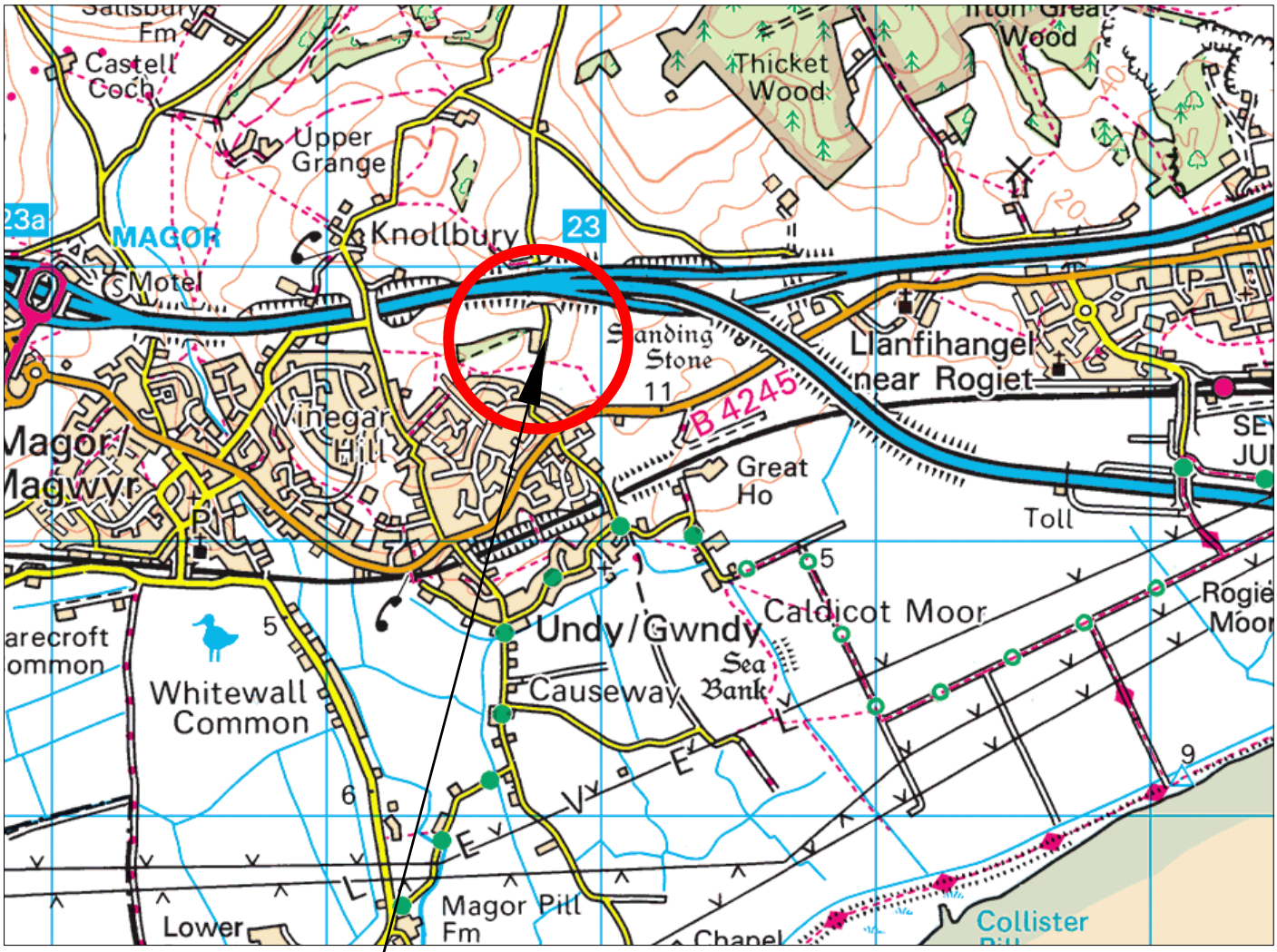

Figure 1: Site Location

Project: Rockfield Farm, Undy	Job no.: 11631/SI	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Monmouthshire County Council	Scale: 1:25,000 at A4		

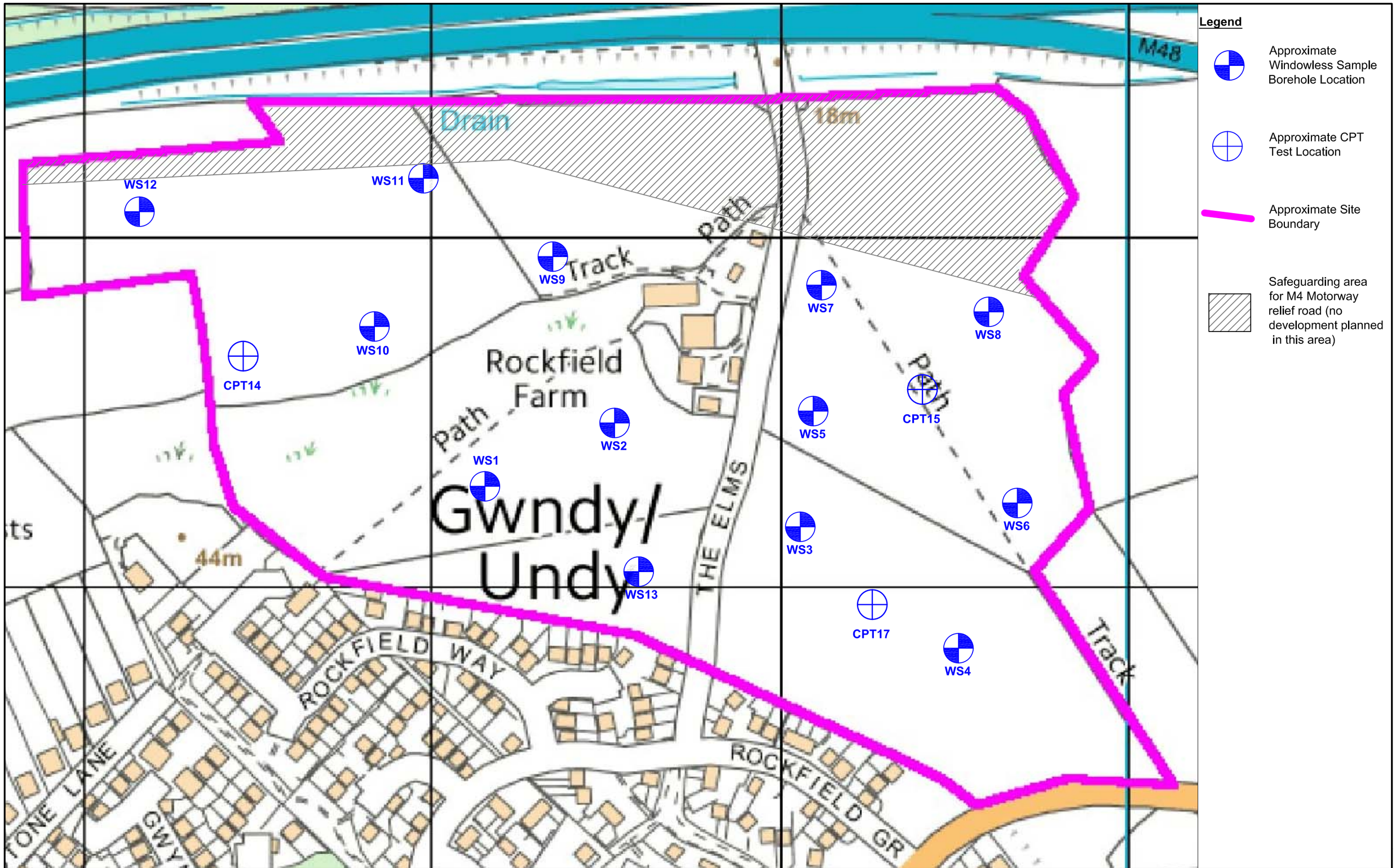

Figure 2: Site Plan

Project: Rockfield Farm, Undy	Job No.: 11631/SI	Intégral Géotechnique
Client: Monmouthshire County Council	Scale: 1:2000 at A3	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991