

**PROPOSED BATTERY STORAGE FACILITY,
LAND TO THE NORTH OF
NATIONAL GRID'S
LEGACY SUBSTATION,
WREXHAM**

**STAGE 1 GEO-ENVIRONMENTAL
ASSESSMENT**

For: Pelagic Energy / AXIS

February 2023

R2746C2-R01-v5

DOCUMENT CONTROL SHEET

Report Title: Proposed Battery Storage Facility, Legacy, Wrexham
Stage 1 Geo-Environmental Assessment

Client: Pelagic Energy / Axis

Report Reference Number: R2746C2-R01

Issue Final

Version: v5

Report Date: January 2023

Signed for Smith Grant LLP

	Name	Position	Signature	Date
Author(s)	D Wayland BSc MSc AssocCIWM MICWEM CWEM	Partner		27.02.2023
Reviewer	K Hawkins BSc MSc CEnv MIEMA MIAQM MIES	Partner		27.02.2023

Document Revision Record:

Version	Report Status	Date	Details of Revision
v1	Draft	10.06.2020	Issue to client for comment
v2	Final	01.09.2020	Minor edits: report finalised for issue
v3	Final	26.04.2021	Change of scheme to Battery Storage Facility
v4	Final	27.01.2023	Minor change to site boundary
v5	Final	27.02.2023	Minor edits following client review

This report has been prepared by Smith Grant LLP for the sole and exclusive use of Pelagic Energy & Axis P.E.D Ltd. Reasonable skill, care and diligence has been exercised within the terms of the contract with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report may be relied upon or transferred to any other parties only with the express written authorisation of Smith Grant LLP, such consent not to be unreasonably withheld or delayed. If any Third Party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty or care of skill.

Smith Grant LLP reserves the right to alter any of the foregoing information in the event of new information being disclosed or provided and in the light of changes to legislation, guidelines and responses by the statutory and regulatory authorities.

PROPOSED BATTERY STORAGE FACILITY, LEGACY, WREXHAM

STAGE 1 GEO-ENVIRONMENTAL ASSESSMENT

CONTENTS

1. Introduction
2. Planning and Legislative Context
3. Scope of Assessment and Information Sources
4. Site Location and Development Proposals
5. Development History and Current Status
6. Site Characterisation
7. Preliminary Conceptual Site Model
8. Conclusions & Recommendations

DRAWINGS

- D01 Historical Map: 1873
- D02 Historical Map: 1899
- D03 Historical Map: 1912
- D04 Historical Map: 1963
- D05 Historical Map: 1993

APPENDICES

- A General Arrangement (2658-03-03)
- B Photographic Records
- C Envirocheck Report (includes Historical Plans)
- D Coal Authority Report
- E UXB Screening Report

1. Introduction

1.1. General

1.1.1. Pelagic Energy ('PE') proposes to submit a planning application for the installation of a battery energy storage system (BESS) ('the Proposed Development') on an area of land at the Legacy 400 kV electricity sub-station, near Wrexham. The Proposed Development represents a revised layout to an extant consent for a BESS facility at the same site (under planning permission reference P/2021/0441) and would comprise 30 single stacked battery storage containers with ancillary infrastructure including 15 inverter / transformer stations, an auxiliary transformer compound, switchgear building and control room.

1.1.2. Axis, acting on behalf of PE, instructed Smith Grant LLP (SGP) to undertake a Stage 1 Geo-Environmental Assessment of the Proposed Development and to provide a report to support the planning application. The assessment has been undertaken to determine any potential constraints with regard to ground conditions and contamination that may impact the proposed future use of the Site.

1.1.3. The Proposed Development would be located within the wider curtilage of the sub-station and land owned by National Grid. The Site lies within the administrative area of Wrexham County Borough Council (WCBC).

1.2. Scope of Objectives of the Report

1.2.1. This following report describes the Stage 1 Geo-Environmental Assessment undertaken by SGP in accordance with the brief agreed with the client. The assessment has been prepared with reference to the Planning Policy Wales (PPW)¹. There are no Technical Advice Notes (TANs) which relate to contaminated land or ground stability under PPW.

1.2.2. The assessment comprised a review of third-party information on the environmental setting of the site and the site's previous and current uses with respect to potential risks to the environment or human health, and a site inspection. This report contains a qualitative risk assessment, and where appropriate makes recommendations for further investigation and remedial actions appropriate to the proposed future use of the site.

1.2.3. SGP is an environmental consultancy specialising in the risk assessment and remediation of contaminated and derelict land. The report author, Dan Wayland, Partner, is a Member of the Chartered Institute of Water and Environmental Management (CIWEM), an Associate Member of the Chartered Institute of Waste Management (CIWM) and a Chartered Water and Environmental Manager (C.WEM). The report review, K Hawkins, Partner, is a Member of the Institution of Environmental Sciences and Chartered Environmentalist.

2. Planning and Legislative Context

2.1. Planning Policy Wales and Guidance

2.1.1. The Welsh Government **Planning Policy Wales 2021** (PPW)¹ sets out the Government's planning policies for Wales and how these are expected to be applied. The policy provides general guidance to Local Authorities on taking land condition into account in planning policies and decisions. Figure 4 of the National Sustainable Placemaking Outcomes, under section 'Maximising environmental protection and limiting environment impact', states that:

'Negative environmental impacts should be avoided in the wider public interest. This means acting in the long term to respect environmental limits and operating in an integrated way so that resources and/or assets are not irreversibly damaged or depleted. The polluter pays principle applied where pollution cannot be prevented and applying the precautionary principle ensures cost effective measures to prevent environmental damage.'

2.1.2. Chapter 3 'Strategic and Spatial Choices' under PPW refers to Environmental Sustainability, and that:

*Section 3.36 – 'Ensuring resilient locational choices for infrastructure and built development, taking into account water supplies, water quality and reducing, wherever possible, air and noise pollution and environmental risks, such as those posed by flood risk, coastal change, **land contamination and instability**'.*

*Section 3.7 - 'Good design promotes environmental sustainability and contributes to the achievement of the well-being goals. Developments should seek to...prevent the generation of **waste and pollution**'.*

2.1.3. Chapter 6 'Distinctive and Natural Places' under PPW refers to the De-Risking Development and Physical Ground Conditions and Land Instability, states that:

Section 6.9.13 – 'When considering development proposals, Planning Authorities should take into account the nature, scale and extent of surface and subsurface hazards which may pose risks to human and environmental health, to ensure that:

- *New development is not undertaken without an understanding of the risks, including those associated with the previous land use, **pollution**, groundwater, flood risk, **subsidence**, landslips, rock falls, mine and landfill gas emissions and rising groundwater from abandoned mines;*

¹ Welsh Government, Planning Policy Wales, Edition 11, February 2021, <https://gov.wales/planning-policy-wales>

- *Development does not take place without appropriate remediation or precautions;*
- *Consideration is given to the potential impacts which remediation of land, including contamination might have upon the natural and historic environment*

2.1.4. Section 6.9.19. 'Where land contamination issues arise, the planning authority will require evidence of a detailed investigation and risk assessment prior to the determination of the application...'

2.1.5. No further guidance with regards to contamination or land stability is provided within the Technical Advice Notes (2-24).

2.2. Local Planning Policy and Guidance

2.2.1. The **WCBC Unitary Development Plan (UDP)**² was adopted in 2005 and sets out the strategic policies applicable to the plan area. WCBC is currently preparing a new Local Development Plan 2 (2013-2028); however, all policies in the current adopted UDP will remain effective until replaced by the new LDP.

2.2.2. A number of specific policies under the UDP relate to contaminated land, these are as follows:

- General Development Principles (Policy GDP1): All new development should ensure that development does not result in, or is subject to, flooding, soil erosion, landslides or contamination either on or off the site.
- Protection of Controlled Waters (Policy EC14): Development which would have an unacceptable adverse impact upon the capacity, flow, quality or availability of controlled waters and associated land will not be permitted.

2.3. Legislation

2.3.1. Land contamination can harm human health, groundwaters, surface waters, soils, ecosystems and property. As such it is controlled, either directly or indirectly, through a range of legislation, including, but not limited to:

- Part IIA of the Environmental Protection Act 1990: establishes a system for identifying and remediating statutorily defined 'contaminated land'; and focuses on addressing contaminated land that meets the specific legal definition and cannot be dealt with via other means, including planning;

² Wrexham County Borough Council, Unitary Development Plan, 14 February 2005

- Water Environment Regulations 2017: replaces previous legislation and outlines duties of regulators in relation to characterisation and classification of water bodies, environmental permitting, abstraction and impoundment of water;
- Building Act 1984 (United Kingdom); requires the prevention of waste, undue consumption, or contamination of water and the protection or enhancing of the environment.
- Environmental Permitting Regulations: impose provisions to prevent ground and water contamination from operations requiring an Environmental Permit to operate; and implement controls for operations relating to the treatment or handling of contaminated soils.

2.3.2. Similarly, when dealing with land that may be unstable, the planning system works alongside a number of other regimes including Building Regulations and the Coal Authority's responsibility for public safety risks arising from past coal mining activities

2.4. National Best Practice and Guidance

2.4.1. The Environment Agency (EA) **Land Contamination: Risk Management Guidance**³ provides an overarching framework for the assessment and investigation of land contamination. It replaces the previous Contaminated Land Report 11: Model Procedures for the Management of Contaminated Land 2004. This guidance is also currently used by NRW for land contamination in Wales.

2.4.2. It is designed to be used in a range of regulatory and management contexts such as voluntary remediation, planning, assessing liabilities or under the Part 2A contaminated land regime. The guidance sets out a phased approach to the assessment of land contamination and specifies requirements for reports produced as part of the process, including Preliminary Risk Assessments (PRAs) and Generic and Detailed Quantitative Risk Assessments (GQRAs and DQRAs).

2.4.3. The EA Guidance is supported by, and cross-refers to, an extensive range of additional statutory and non-statutory guidance relating to aspects such as site investigations, protection of groundwater, understanding and managing asbestos, definition of waste and the specific investigation and assessment procedures under Part IIA. Where necessary, such guidance is referred to in the following report.

³ Land Contamination: Risk Management, issued 5th June 2019, last updated 23rd December 2019, www.gov.uk

3. Scope of Assessment and Sources of Information

3.1. Scope of Assessment

3.1.1. In undertaking the assessment SGP carried out the following activities:

- site visit to view the existing site and its setting;
- review of comprehensive historical mapping information;
- review of comprehensive environmental setting information (geology, hydrology, hydrogeology, industrial land uses, mineral excavation / extraction, landfilling / waste management activities);
- review of information relating to potential unexploded ordnance (UXO);
- review of development proposals;
- development of preliminary conceptual site model (CSM) with regards to ground contamination; and,
- provision of recommendations for further investigations and mitigation, where deemed necessary.

3.1.2. The information has been used to determine i) the potential for any ground contamination to be present on or near the site due to historical and current land uses and ii) the potential for any such contamination to pose a constraint to the proposed use of the site and / or impact the surrounding environment. The information has been used to inform the risk assessment and determine any further work and or investigations that may be required to identify any remedial requirements to ensure the Site is suitable for the Proposed Development with regards to ground contamination.

3.1.3. Information has also been obtained on general expected ground conditions at the Site and stability / physical ground conditions where these may constrain the planned development are included where relevant. However, formal recommendations with regards to geotechnical considerations are not included.

3.1.4. Similarly, structural building, asbestos or ecological surveys have not been carried out, although reference is made to relevant information and SGP observations, where deemed relevant and applicable.

3.2. Sources of Information

3.2.1. The baseline data has been obtained through a desk top study and site visit. No additional survey or field work has been undertaken as part of this assessment.

3.2.2. The principal sources of information consulted in the preparation of this report include:

Table 3.1: Information Sources

Date and reference	Author and source	Purpose and information content
Topography, geology, hydrogeology and hydrology		
http://mapapps.bgs.ac.uk [Accessed May 2020]	British Geological Survey.	distribution of geological units at surface including drift and artificial deposits, faults and mineral outcrops, boreholes logs
https://www.ordnancesurvey.co.uk/osmaps/ [Accessed May 2020]	Ordnance Survey (OS), Explorer Map, 1: 10,000	general mapping information including structures, boundaries, ground features, water features etc.
http://www.ukradon.org [Accessed May 2020]	Public Health England	mapping defining radon affected areas in England & Wales
http://mapapps2.bgs.ac.uk/coalauthority/home.html [accessed May 2020]	Coal Authority	mapping defining coal mining risks
Historical data		
Satellite imagery	Various	recent historical features
Envirocheck Report Historical Mapping 243353372_1_1; May 2020 (provided in Appendix C)	Envirocheck: Landmark Information Group	historical mapping at 1:2,500, 1: 10,000 and 1: 10,560 from 1873 onwards
Information Review		
Envirocheck Report Datasheet 243353372_1_1; May 2020 (provided in Appendix C)	Envirocheck: Landmark Information Group	hydrological, waste, hazardous substances, geological, land uses, and natural stability hazards based on historical data and geological records
Coal Authority Consultants Report 51002285246001; April 2020 (provided in Appendix D)	The Coal Authority	Review of the potential site impact from past, present and future underground and opencast coal mining, mine entries, and coal mining subsidence.
BRE 211	Public Health England	guidance for the installation of radon protection measures.
https://magic.defra.gov.uk/MagicMap [Accessed May 2020]	Defra	web-based interactive map containing information on nature conservation areas, aquifer designations, source protection and nitrate vulnerable zones.
www.zeticauxo.com (provided in Appendix E)	Zetica	unexploded bomb risk mapping

3.3. Site Inspection & Investigations

3.3.1. A site inspection of accessible areas on Site and in the immediate surrounding area was undertaken by D Wayland, Partner on 29th May 2020. All parts of the Site were accessible for the walkover.

3.3.2. A photographic record of salient features is provided in Appendix B.

3.4. Previous Investigations

3.4.1. SGP has not been provided with any previous desk study or site investigation information pertaining to the Site.

3.5. Local Authority Consultation

3.5.1. SGP has consulted with the Local Authority Contaminated Land Officer regarding the Site and any information they may have with regards to contamination. A response was received on 03.06.20 which confirmed the following:

I can confirm that the Contaminated Land Team has no specific concerns in relation to contamination issues, with respect to the proposed development, and should a planning application be received we would not recommend that any contamination conditions be placed on any future planning permission that may be granted. The only industrial use identified in close proximity to the proposed development site is the adjacent electricity substation, as the proposed development is for a similar use it is not deemed disproportionate to condition on this occasion.

However, it should be noted that this is based on the information that we have available at the present time and should the Phase 1 Site Investigation Report, proposed within the Screening Request letter, find any potential contamination then we reserve the right to amend our recommendations.

4. Site Location and Development Proposals

4.1. Site Details and Location

4.1.1. The Site encompasses an area of land within the curtilage of the existing National Grid Electricity Sub-Station located at Legacy, 4.6km to the west of Wrexham as shown below in Figure 4.1.

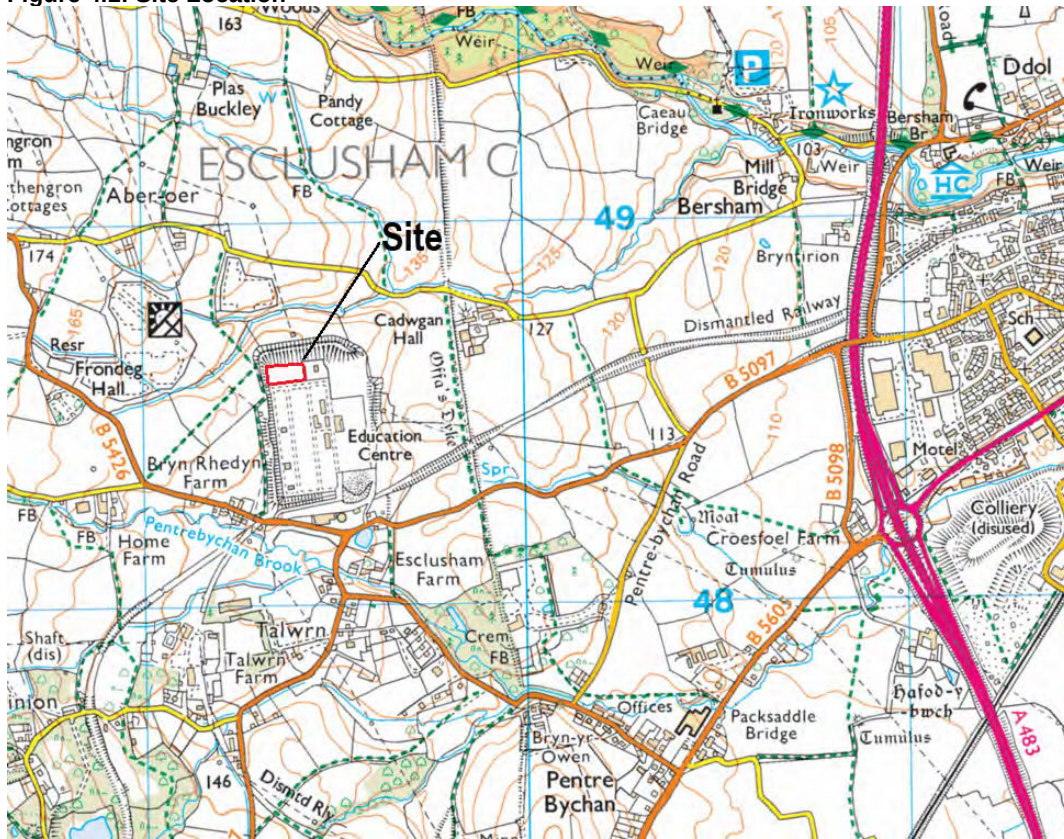
4.1.2. The sub-station lies to the north of the B5426, Bronwylfa Road. The Site itself lies within the northern part of the sub-station area with the eastern part of the site slightly encroaching into the grounds of the substation as shown in the plans reproduced in Appendix A. The Site is surrounded by a substantial woodland embankment to the north and west, while the existing sub-station complex sits adjacent to the south and east. The surrounding area beyond this is rural in nature with scattered isolated residential properties to the northwest and northeast and wider residential development along Bronwylfa Road to the southwest and southeast.

4.1.3. The Site location details are summarised below and provided in Figures 4.1 and 4.2.

Table 4.1: Site Details

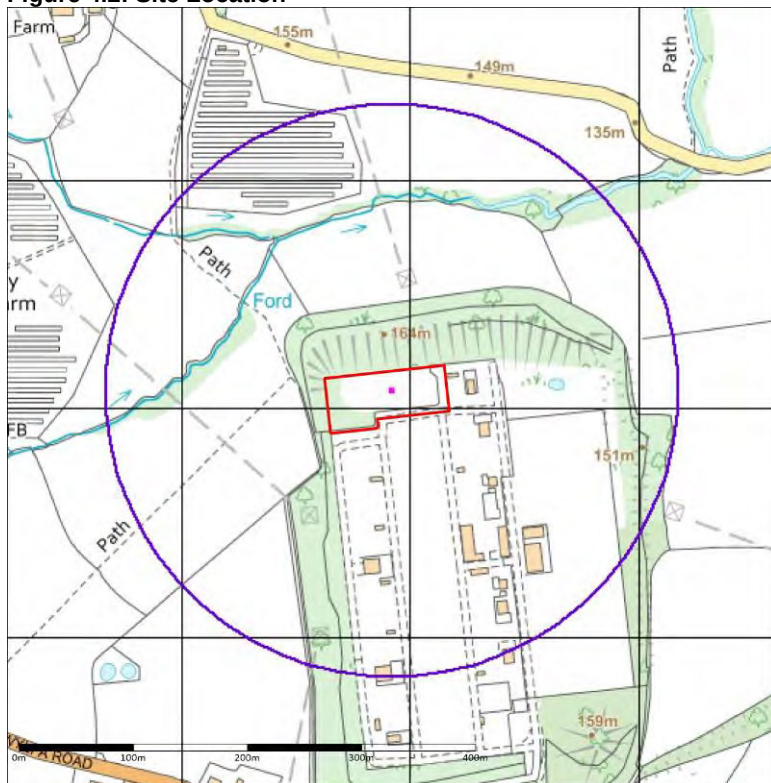
Address	Land to the north of Legacy Substation, off Bronwylfa Road, Pentre Bychan, LL14 4HY
National Grid Reference	SJ293486
Local Authority	Wrexham County Borough Council (WCBC)
Site Areas	approximately 0.45 Ha
Current Use of Sites	undeveloped scrubland / eastern part forms part of the existing substation curtilage
Proposed Use	Erection of 30 single stacked battery storage containers with 15 inverter/transformers, auxiliary transformer compound, switchgear building and control room.

Figure 4.1: Site Location



Reproduced with the permission of the Ordnance Survey @Crown Copyright Licence No. 100005799

Figure 4.2: Site Location



Reproduced with the permission of the Ordnance Survey @Crown Copyright Licence No. 100005799

4.2. Proposed Development

4.2.1. Proposals are for the construction of a battery storage facility comprising of 30 single stacked battery storage containers with ancillary infrastructure including 15 inverter / transformer stations, an auxiliary transformer compound, switchgear building and control room. the curtilage of the existing substation.

4.2.2. Details of the proposed layout are provided in Appendix A.

5. Development History and Current Status

5.1. Historical Development

5.1.1. A summary of significant features, developments and land uses shown on historical Ordnance Survey maps is provided in Table 5.1 below. Copies of selected maps are provided in Drawings D01-D05.

5.1.2. Only key features of interest are summarised below; for full details reference should be made to the complete set of historical mapping, as provided by Envirocheck (provided in Appendix C). Where key features have been observed their distance to the closest part of the respective proposed development) is made.

Table 5.1: Summary of Development History

Map	Site	Surrounds (<i>all distances are approximate</i>)
1873: 1:2,500 See Drawing D01 & 1879: 1:10,560	The site is formed by two agricultural fields. A footpath is present in the west of the site crossing in a northwest to southeast direction.	The surrounding land is predominantly undeveloped agricultural fields within the immediate and wider surrounding area. Two surface watercourses are mapped within the surrounding area, one approximately 105m to the west and a second 140m to the north. A lime kiln is located 180m to the north along the river whilst old coal shafts are mapped 180m to the southwest and a second 400m to the southeast. A possible spoil mound is located 280m to the northeast within the property of Cadwgan. Offa's Dyke is located 250m to the east and a corn mill 450m to the south within the area of Esclusham.
1899: 1:2,500 See Drawing D02 & 1900: 1:10,560	No significant change	A branch of the Great Western Railway (Legacy Colliery Branch) has been constructed approximately 335m to the south which serves the two old coal shafts. A mill race with mill pond has been constructed adjacent to the corn mill in the south.
1912: 1:2,500 See Drawing D03	No significant change.	The railway branch to the south has now extended (Rhos Branch) and continues to the east beyond Offa's Dyke. A goods yard and Legacy Station has been constructed along the railway line 320m to the south
1914-1945 1:10,560	No significant change.	No significant change.
1938: 1:10,560	No significant change.	No significant change.

1963: 1:2,500 See Drawing D04 & 1963-1964 1:10,000	The site forms an undeveloped parcel of land to the immediate north of the substation. The site's northern, western and part of the eastern boundary is formed by embankments.	The existing substation has been constructed to the immediate south with several buildings and pylons shown. Embankments surround the substation on all sides.
1974: 1:2,500	No significant change.	No significant change. <i>Limited mapping coverage of the wider surrounding area.</i>
1976-1979 1:10,000	No significant change.	The railway to the south is mapped as dismantled
1993: 1:2,500 See Drawing D05	The substation now extends to the immediate east with the easternmost part of the site falling within the curtilage of the substation but outside any of the transformers.	A building or structure feature associated with the substation has been constructed to the immediate east. <i>Limited mapping coverage to the east, west and south.</i>
2000: 1:10,000	No significant change.	No significant change
2001 Aerial Image	The site appears to be covered in vegetation. No significant change.	The substation to the immediate east and south appears to be covered in hardstanding in its entirety with several buildings, transformers and pylons shown. The perimeter of the substation appears to be occupied by vegetated mounds and trees.
2006 Satellite imagery & 1:10,000	No significant change.	A pond is present approximately 100m to the east beyond which a vegetated mound is shown.
2007 Satellite imagery	No significant change.	No significant change.
2009 Satellite imagery	No significant change.	No significant change.
2012 Satellite imagery	No significant change.	No significant change.
2016 Satellite imagery	No significant change.	No significant change. <i>Poor coverage to the east due to cloud cover</i>
2018 Satellite imagery	No significant change.	A solar farm has been constructed across several fields to the north and northwest, the closest panels of which lie approximately 140m to the north.

Note: Dates refer to dates provided on OS mapping; actual dates may differ

5.2. Present Land Condition

5.2.1. A summary of existing significant features, recent activities and land uses shown on contemporaneous aerial photography, site inspections and anecdotal evidence is provided in Table 5.2 below.

Table 5.2: Present Land Condition

Site Description	The Site currently forms a vacant parcel of grassland with some scrub species located within the wider curtilage of the existing National Grid Sub-station. The easternmost part of the site falls within part of the substation although this is outside any areas of transformers etc. The current layout is shown in Figure 3.1 and Appendix A.
Access	Access to the site is currently via the National Grid Sub-station.
Boundaries	north: open boundary onto steep woodland embankment which forms part of the wider sub-station boundary east: sub-station complex south: palisade fencing onto sub-station complex west: open boundary onto steep woodland embankment which forms part of the wider sub-station boundary with dense vegetation and mature trees
Services / Wayleaves	Service plans have not been obtained as part of this study; however, a manhole was located in the north of the site at the base of the embankment.
Rights of Way	No public footpaths are present on the Site; however, one passes to the west of the Site beyond the woodland embankment.
Structures	No above ground structures are present on the Site.
Surfaces / Vegetation	The Site is occupied by undeveloped grassland and scrub with slightly hummocky ground. Long grass and brambles were present over the site. Mature trees were present in the west whilst self-sown saplings were scattered across the main site area. Granular cover is present in the easternmost part of the site, associated with the existing substation. Exposed soils from small animal burrows were observed within the woodland embankment which forms the northern boundary, this consisted of a light brown clayey soil with angular gravel.
Contamination Sources	The Site is largely undeveloped land, originally forming agricultural land before forming a vacant parcel located between the substation and formed woodland embankment. The easternmost part of the site is located within the grounds of the existing substation but located outside any of the transformers. Made ground is unlikely to be present across the site but may be limited to reworked natural soils which were placed to form the embankment which surrounds the sub-station, presumably arising from its construction to form a natural screen, and in the east where granular surface cover associated with the substation is present. A manhole was observed in the north, made ground backfill could also be present around such utility corridors.

5.3. Historical Development Summary

5.3.1. The earliest available mapping (1873) shows the Site to have comprised several agricultural fields with a footpath in the west. Little changed occurred until the construction of the existing

substation sometime in the 1950's / 60's during which time the site remained undeveloped but situated between the substation to the south and east and a large embankment to the north and west. It is presumed the embankment was formed through the clearance and levelling of the wider site for the sub-station and associated infrastructure. By 1993 the substation had extended to the east where the easternmost part of the site encroaches on.

5.3.2. The Site appears to have remained as a vacant parcel (with exception of the easternmost part which is located within the grounds of the substation) of land within the wide sub-station since with no discernible features identified through the reviewed mapping.

5.3.3. Spot height data on Envirocheck mapping shows the northern embankment to be some 13m in height. The provenance of the material to form the embankment is unknown but is likely to predominantly be arisings generated during the construction of the substation. Observed small animal burrows within the woodland embankment during the walkover allowed inspection of the soils which consisted of light brown clay with angular gravel, typical of the superficial deposits mapped within the area.

5.3.4. The surrounding land has predominantly served as agricultural fields throughout its mapped history and with exception of the substation, no significant industrial land use or potentially contaminative activities have been identified within the immediate surrounds.

Figure 5.1: Satellite Imagery of site and surrounds



5.4. Adequacy of Information

- 5.4.1. Whilst there are some gaps in the historical map coverage it is considered that the available mapping provides adequate coverage of the Site and immediate surroundings to inform the assessment of potential ground conditions and contamination status of the Site.

6. Site Characterisation

- 6.1. The physical setting of the Site has been derived from the review of information detailed in Section 2. Key details are summarised below; for full details reference should be made to the supporting information provided in Appendix C.

Table 6.1: Environmental Setting

Setting and Topography	The Site is located approximately 1.4km to the west of Rhostyllen and lies within an area of grassland and scrub to the immediate north of the existing sub-station. The Site is relatively level and is located at an elevation of about 151m Above Ordnance Datum (AOD) as shown by spot heights on contemporary OS mapping.
Geology / Ground Conditions	BGS, historical OS mapping and site observations indicate the potential ground conditions to be: <u>Made ground:</u> BGS mapping reports the presence of made ground (artificial deposit) to the immediate north, associated with the large embankment present. It is assumed that these embankments are associated with construction arisings of the substation and given the greenfield nature of the Site prior to construction are anticipated to correspond to reworked natural soils. There is potential for the presence made ground (reworked natural soil) to be present on the site as well as localised deposits associated with backfill / pipe bedding around the observed manhole covers and any underground service corridors. Made ground is also anticipated to be present in the easternmost part of the site associated with the existing substation, however deep deposits are unlikely to be present and a currently surfaced with granular cover. <u>Superficial Deposits:</u> BGS mapping shows the site to be underlain by Devensian Till (boulder clay). <u>Bedrock:</u> BGS mapping shows the site to be underlain by Pennine Lower Coal Measures and Pennine Middle Coal Measures of mudstone, siltstone and sandstone. <u>Faults:</u> - A fault is mapped approximately 85m to the east. The fault runs in a north to south direction. <u>BGS Records</u> BGS records show there are no borehole entries on the site, however the substation and surrounding land appears to have been subject to investigation in 1946, presumably to assess the feasibility of the substation prior to construction. Borehole logs for this investigation are not available for review. A number of more recent boreholes are shown within the substation area dated

	1963 & 1994; however, these are labelled 'confidential' and cannot be viewed. The nearest available borehole records is for an entry located 0.6km to the northeast (SJ34NW271) which recorded topsoil overlaying a sandy clay to 1.3m with a very sandy gravel to the base of the borehole at 4.5m bgl.
Natural Ground Stability	The Site is in an area where risks of natural ground from collapsible, landslide, running sand and shrinking and swelling clay are all very low, and that there is no risk from compressible ground and ground dissolution.
Hydrology / Drainage	The Site is open area of rough scrubland where drainage will be predominantly through shallow infiltration. The nearest mapped surface watercourse is the River Clwydog approximately 100m to the northwest with a pond mapped approximately 100m to the east. The pond was first shown in 2006 satellite imagery, and it is assumed to relate to a balancing pond or similar for the substation. The Envirocheck report states that site is at high risk of flooding from surface waters.
Hydrogeology / Groundwater	The aquifer designations of the underlying geological units are: <u>Superficial Deposits:</u> Glacial Till: Secondary Aquifer - Undifferentiated <u>Bedrock:</u> Pennine Lower and Middle Coal Measures – Secondary A Aquifer The Site is not located in a Source Protection Zone for drinking water abstractions. Groundwater vulnerability for both the superficial and bedrock aquifers are classed as medium. There are no water abstractions within 1km of the site. Shallow groundwater is anticipated to be limited to perched water within lenses of sands and/or gravel within the Glacial Till. The presence of Glacial Till is likely to minimise connectivity with the underlying bedrock aquifer which may provide baseflow to the River Clywedog.
Excavation / Mining	The reviewed historical maps have not identified any excavation works having taken place on the site although the presence of substantial embankments constructed at the time of the substation suggests that the excavation and deposition of construction materials may have taken place. No evidence of historical mining or mineral extraction having taken place on or within the immediate surrounds of the site have been identified within the reviewed historical mapping. Two coal shafts were identified approximately 180m and 400m to the southeast and southwest of the site.

	The Site is not located within a Development High Risk Area and the Coal Authority has not identified it as located within an area of past shallow coal mine workings or probable shallow coal mine workings. The Coal Authority Report (Appendix D) confirms that the Site is not located within an area of past mining recorded, there are no probable unrecorded shallow mineworkings and there are no mine entries within 100m of the site boundary. There are no outcrops, fissures or break lines and no opencast mines or Coal Authority managed tips within 500m of the site. The Coal Authority has not received a damage notice or claim on or within 50m of the site. No licenses have been granted for future coal mining within 200m of the site boundary.
Landfill / Waste Disposal	The available information does not indicate any evidence any historical landfilling or waste disposal activities to have taken place on, or in the immediate vicinity of the Site with exception to the historical placement of construction arisings to the immediate north and west of the site. The Envirocheck report indicates that there are no registered historic or current landfills or licensed waste management facilities within 500m of the site.
Neighbouring Landuse / Sources of Contamination	Neighbouring land uses are predominantly agricultural with fields surrounding the Site with exception to the substation to the immediate south. Woodland embankments are present to the north and west and are anticipated to be arisings generated during the construction of the sub-station, however given the greenfield nature of the site prior to development, the presence of contaminants is considered unlikely. The use of the sub-station will involve the use and storage of transformer oils which may have historically contained PCBs. The substation is covered by hardstanding and transformers were situated within bunds to limit any accidental loss or spillage. There are no Contemporary Trade Directory Entries within 500m of the site
Radon	The Site lies within an area where between 3-5% of homes are estimated to be at or above the Radon Action Level. Basic radon protection measures are required in the construction of new dwellings or extensions.
UXO Risk	The UXO risk map identifies the Site as located within an area of Low Risk. There are no Luftwaffe targets within the surrounding area. A copy of the UXO risk map is provided in Appendix E.
Nature Conservation	No areas of the Site, or surrounding land within 500m, have been identified as statutory designated nature conservation sites. No invasive weeds, such as Japanese Knotweed or Himalayan Balsam were observed during the site visit, although a formal survey has not been undertaken by SGP.

7. Preliminary Conceptual Site Model

7.1. Methodology

7.1.1. Information from the desk study has been used to identify the likely source-pathway-target relationships that may exist at the Site during and following the proposed development. Principal factors that may determine potential sources of contaminants at the site, receptor vulnerability and potential pathways have been identified and each assessed in turn to derive a Conceptual Site Model (CSM).

7.2. On-Site Sources

7.2.1. The historical mapping indicates that the Site has remained undeveloped and largely unchanged from the earliest available mapping (1873) to the present day. Originally the site formed part of several agricultural fields with footpaths until the construction of the substation sometime in the 1950's / 60's when it became a vacant parcel of land situated between the substation to the south and large embankments to the north, east and west. By 1993 a minor expansion of the substation took place extending to the immediate east where part of the site falls within, although this is limited to an area of fencing and granular cover on the surrounds of the substation.

7.2.2. The embankments which were formed at the time the substation was constructed are anticipated to be associated with levelling of the site and to comprise arisings from the construction works. Given the largely greenfield history of the site, these are anticipated to consist of reworked soils of topsoil and / or clay given the mapped geology; this is consistent with the observations during the site walkover. Such reworked natural soils may also be present across the site surface. Limited made ground may be present in the east associated with the existing substation, however deep deposits are not anticipated to be present and are most likely limited to the surface granular cover.

7.2.3. Localised pockets of made ground associated with backfill material around utilities (manholes) and as pipe bedding around any utility corridors may also be present.

7.2.4. The Coal Authority Report does not report the presence of underlying coal seams and also confirms that there was no past underground mining recorded and that there are no probable unrecorded shallow workings, and no mine entries present or within 100m of the site boundary.

7.2.5. The Site lies within an area where 3-5% of homes are estimated to be at or above the Radon Action level according to the Envirocheck Report meaning that basic radon protection measures are required in any permanent buildings or extensions. The control room and battery storage units are understood to comprise of modular units (portacabins or similar) which reside on frames or legs which provide a venting void space. As these are not permanent structures, radon protection measures are therefore not required.

7.3. Off-Site Sources

7.3.1. The surrounding land has underground very little development except for the construction of the substation to the immediate south which is understood to have been constructed sometime between the 1950's / 60's and later expansion in the east by 1993. The operation of the substation will include the storage and use of transformer oil which may historically contained PCBs, however transformers are located within areas of hardstanding / bunds so the likely loss of oils is unlikely.

7.4. Potential Receptors

7.4.1. The proposed use of the Site is for industrial use with current proposals for the construction of a battery storage facility.

7.4.2. The proposed use of the Site would be considered as low sensitivity for a commercial / industrial use with respect to human health.

7.4.3. The principle vulnerable receptors with respect to potential exposure to any soil contamination that may be present for the proposed use will be:

- construction workers who may be exposed to contaminants during preparatory and construction / refurbishment works;
- future site users and site visitors;
- future maintenance workers;
- buildings / structures;
- controlled waters: underlying aquifers.

7.5. Human Health Risk Assessment

7.5.1. The potential for significant contamination to be present that may pose an acute risk to construction workers during the development is considered very low. Similarly, future site workers are unlikely to be exposed to materials with the potential to cause acute health impacts.

7.5.2. Made ground is anticipated to be limited to the presence of reworked natural soils (topsoil and / or Glacial Till) associated with the formed embankments. Discreet deposits of made ground associated with backfill and pipe bedding could be present around underground service corridors where present and to the east which falls within the grounds of the substation. The presence of contaminants within such materials if present are considered unlikely to exceed commercial assessment criteria values. The potential for any direct exposure of future site users to any contamination present in shallow soils, such as through ingestion and dermal exposure, is therefore negligible.

7.5.3. No sources of ground gas have been identified with no landfills within 500m of the site, no evidence from the reviewed mapping of any infilled pits, ponds or excavation and the Coal Authority confirm no underlying coal seams, no past mining recorded and no probable unrecorded shallow workings.

7.5.4. The Site lies within an area where 3-5% of homes are estimated to be at or above the Radon Action level.

7.5.5. The long-term risk to future site users is considered very low / negligible based on the absence of any likely contaminants present and the development proposals.

7.6. Property Risk Assessment

7.6.1. The potential for chemical attack on construction materials (polymers) by possible localised soil contaminants is considered to be low. High sulphate containing soils with the potential for aggressive conditions to certain classes of concrete are unlikely but should be confirmed.

7.7. Controlled Waters Risk Assessment

7.7.1. The Site is in an area of moderate sensitivity as far as groundwater is concerned with unproductive Glacial Till (undifferentiated) overlying a Secondary A aquifer within the lower and middle Pennine Coal Measures. The widespread mapped cover of Glacial Till across the site will limit the migration of any mobile contaminants, the risk to the underlying bedrock aquifer is therefore considered to be very low.

7.7.2. The nearest surface watercourse is the River Clywedog located approximately 100m to the northwest. The watercourse is at a distance where any impact from the site is unlikely.

7.7.3. No contamination sources with the potential to impact controlled waters has been identified, however it is recognised that there is potential during the construction phase where run-off and track-out may occur if environmental controls are inadequate.

7.8. Preliminary Conceptual Site Model (CSM)

7.8.1. The preliminary CSM has been derived for the site using the information described above, describing the potential contamination sources, pathways and receptors and is summarised below in Table 5.1:

Table 7.1: Preliminary Conceptual Site Model

Receptor	Source / Contaminant	Pathway / Exposure	Pollutant Linkage (in absence of mitigation)	Further Works
1. humans – construction workers / future maintenance workers	metals / metalloids / asbestos / PAHs / heavy hydrocarbons	dermal contact / ingestion / inhalation – short term exposure	Negligible – Re-worked natural soils may be present at the surface or limited to existing service corridors. Limited made ground in west associated with existing granular surface cover of substation. No source of potential contamination identified elsewhere.	No Further Works Required.
2. humans – future site visitors / workers	metals / metalloids / asbestos / PAHs / heavy hydrocarbons	dermal contact / ingestion / inhalation	Negligible – Potential made ground limited to re-worked natural soils, soils around existing service corridors and limited extent in east associated with existing granular surface cover of substation which located outside area of substation infrastructure. Development proposals for widespread hardstanding / stone surfacing	No Further Works Required.
	ground gas (methane, carbon dioxide)	accumulation within voids, confined spaces and service runs to toxic concentrations	Negligible – No significant sources of ground gas have been identified.	No Further Works Required.
	radon gas from natural ground		Low likelihood – 3-5% of homes are estimated to be at or above the Action level.	Basic radon protection measures are required in all permanent buildings and extensions
	VOC vapours from soil / groundwater sources		Negligible – No sources of vapour contamination identified on site. Substation to south and east likely to use and storage transformer oil however widespread hardstanding, containment structures and underlying Glacial Till would retard any migration.	No Further Works Required.
3. humans – adjacent site users	metals / metalloids / asbestos / PAHs / heavy hydrocarbons	windblown / dermal contact / ingestion / inhalation	Negligible – Re-worked natural soils may be present at the surface or limited to existing service corridors. No source of potential contamination identified elsewhere.	No Further Works Required.

Receptor	Source / Contaminant	Pathway / Exposure	Pollutant Linkage (in absence of mitigation)	Further Works
4. property / services	ground gas (methane)	accumulation within voids, confined spaces and service runs to flammable concentrations	Negligible – No significant sources of ground gas have been identified.	No Further Works Required.
	pH, sulphate	chemical attack of buried concrete and plastic materials	Low Likelihood – Soils containing elevated sulphate are not anticipated but cannot be ruled out.	Inclusion of pH and soluble sulphate analysis of foundation bearing strata. <i>mitigated through provision of sulphate resistant concrete</i>
4. vegetation / landscaping	leachable metals / metalloids may be present within made ground / natural soils	plant uptake	Negligible – No new additional area of soft areas under current development proposals.	No Further Works Required.
5. ecosystems / protected species & habitats n/a – no ecosystems / protected habitats in immediate vicinity				
6. surface waters	leachable metals / metalloids / PAHs / hydrocarbons	migration via shallow groundwater / surface water run-off.	Negligible – No source of potential contamination identified. Receptors at a significant distance where any impact is considered unlikely	No Further Works Required.
7. groundwater – Secondary Undifferentiated (Glacial Till)	leachable metals / metalloids / PAHs / hydrocarbons	migration via saturated zone	Negligible – No source of potential contamination identified.	No Further Works Required.
7. groundwater – Principal / Secondary A aquifer within Bedrock	leachable metals / metalloids / PAHs / hydrocarbons	migration via saturated zone	Negligible – No source of potential contamination identified. Widespread cover of Glacial Till will provide additional protection to the underlying aquifer	No Further Works Required.

7.9. Additional Considerations

Ground Stability – Natural Hazards

- 7.9.1. The Site is located within an area where natural soils are classed as posing very low to no hazard of landslides, collapsible ground, running sand, compressible ground or shrinking and swelling clay hazards.

UXO Risk Assessment

- 7.9.2. The UXO screening assessment has identified the Site as being located in an area of low risk with regard to potential unexploded ordnance. No further assessment of potential UXO risk is deemed necessary.

Mining Risk Assessment

- 7.9.3. The Coal Authority report confirms that the site is not located within a Development High Risk Area or within an area of past shallow coal mineworkings or probable shallow coal mine workings. There are no mine entries within 100m of the site boundary and there are no outcrops, fissures or breaklines, or faults although a fault is mapped approximately 85m to the east.

8. Conclusions and Recommendations

8.1. Conclusions

- 8.1.1. The historical mapping indicates that the Site has remained largely unchanged throughout its mapped history, originally forming part of several fields (1873) up until the construction of the existing substation sometime in the 1950's / 60's. During this time, it remained a vacant parcel of land situated between the sub-station to the south and later the east, and large embankments to the north and west. The embankments were constructed at the same time of the substation and it is assumed comprise arisings from the levelling of the Site for development that have been used to form an environmental screen around the sub-station. Given the greenfield nature of the substation site prior to construction, the embankment is anticipated to comprise of reworked natural soils.
- 8.1.2. The surrounding land has predominantly served as agricultural fields from the earliest available mapping up until the present day with exception of the substation to the immediate south.
- 8.1.3. Ground conditions are mapped as Glacial Till across the Site although a layer of topsoil is likely to be present beneath the vegetated surface. Given the formation of the large embankment which is raised some 13m from the Site's ground level, the presence of some reworked natural soils associated with its formation may also be present on the site surface. Observations of exposed soils from small animal burrows in the embankment confirmed a clay soil with angular gravel, typical of the mapped superficial deposits.
- 8.1.4. A manhole was observed in the north of the main site (at the base of the embankment). Whilst the Proposed Development would have no impact on these manholes, localised deposits of made ground associated with pipe bedding may be present within these locations.
- 8.1.5. Limited made ground may also be present in the east associated with the existing substation, however this likely to be limited to the observed granular cover.
- 8.1.6. No sources of on-site contamination have been identified which could pose a risk to human health, the environment or pose a significant constraint to the proposed development of the Site.

- 8.1.7. The surrounding land has been predominantly agricultural with no identified off-site sources of contamination which could migrate onto the Site. The substation to the south is likely to involve the use and storage of transformer oils, however given the widespread hardstanding at the substation, the containment structures in place, the low mobility of such a contaminant and the underlying Glacial Till then migration of any contaminants onto the site is considered highly unlikely.
- 8.1.8. No landfills have been identified within 500m of the site. The Coal Authority have confirmed the absence of underlying coal measures, recorded past mining and no probable unrecorded shallow mine workings; no mine entries are present within 100m of the site boundary.
- 8.1.9. The Site is located within an area where 3-5% of homes lie above the Radon Action Level; basic radon protection measures are required in new permanent buildings or extensions. The control room, switchgear units and battery containers are to comprise of modular units (portacabins or similar) which reside on frames or legs which provide a venting void space. As these are not permanent structures, radon protection measures are therefore not required and the venting space between the floor of the unit and ground level will provide ventilation in any case.
- 8.1.10. The proposed use of the Site for a battery storage facility is considered to be of low sensitivity. The operational area of the Site will be covered by hardstanding or stone surfacing in its entirety. Considering the proposed development, the history of the Site and the absence of significant contaminants, the risk to human health is very low / negligible.
- 8.1.11. Based on the available information, no particular constraints to the Proposed Development with regards to ground contamination have been identified and it is concluded that the Site is suitable for the proposed use with regards to ground contamination.

8.2. Recommendations

- 8.2.1. No further investigations or assessment with regards to contaminated land is considered necessary based on the findings of this report subject to regulatory approval.
- 8.2.2. It is recommended that a geotechnical investigation is carried out to confirm the shallow ground conditions and bearing capacity of the underlying stratum to inform the design of the development. Such an investigation should also involve the collection of foundation bearing strata for pH and soluble sulphate to determine aggressive conditions in accordance with BRE SD1⁴

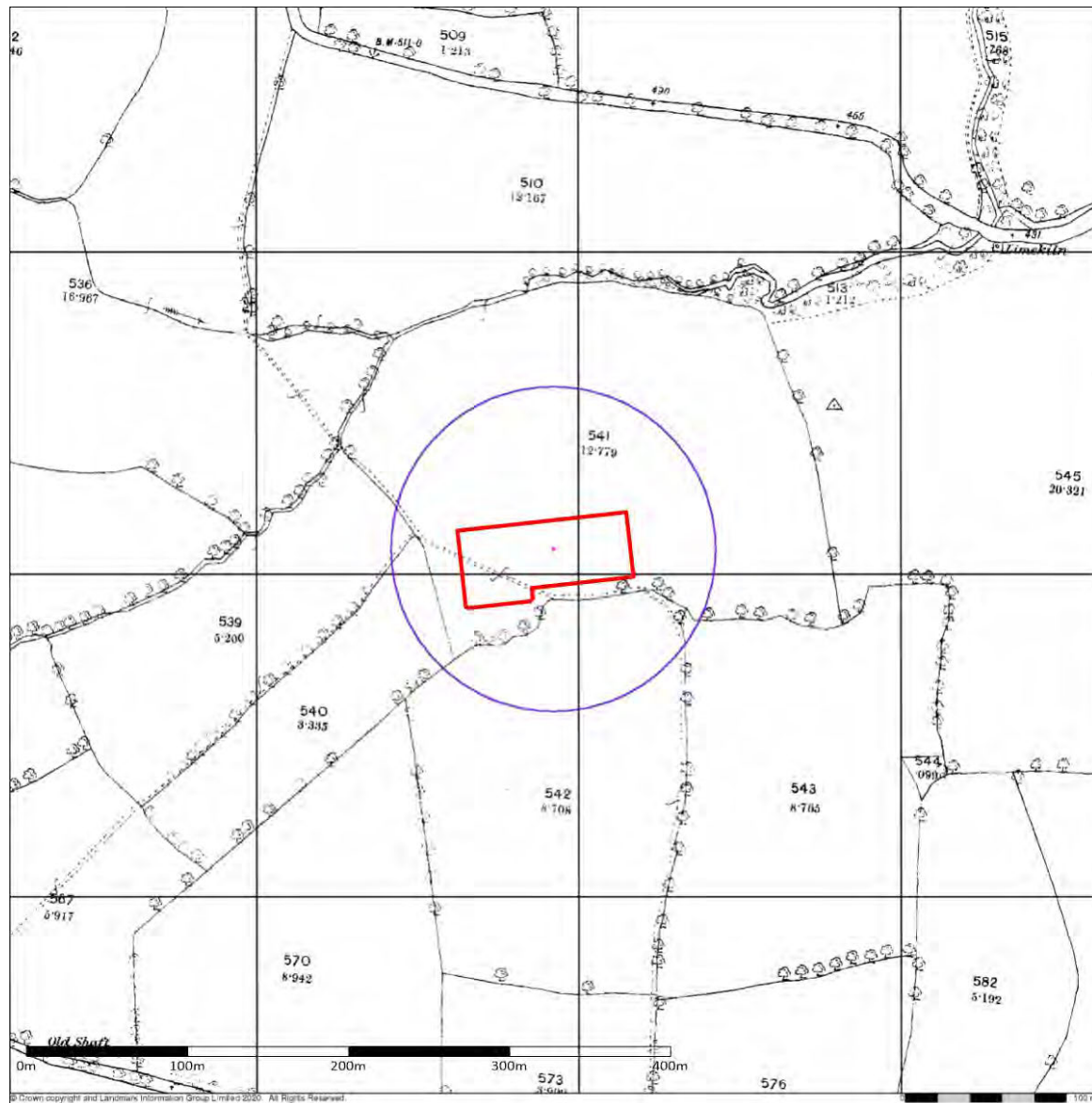
⁴ BRE – Special Digest 1 (SD1). Concrete in Aggressive Ground (2005)

8.3. Limitations

8.3.1. This report has been prepared by SGP for the sole and exclusive use of Axis P.E.D Ltd and their client Pelagic Energy. Reasonable skill, care and diligence has been exercised within the budget available, and in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in undertaking the assessment and preparing this report, it is possible that other ground conditions and contamination as yet undetected may exist. Reliance on the findings of this report must therefore be limited accordingly. Such reliance must be based on the whole report and not on extracts which may lead to incomplete or incorrect conclusions when taken out of context.

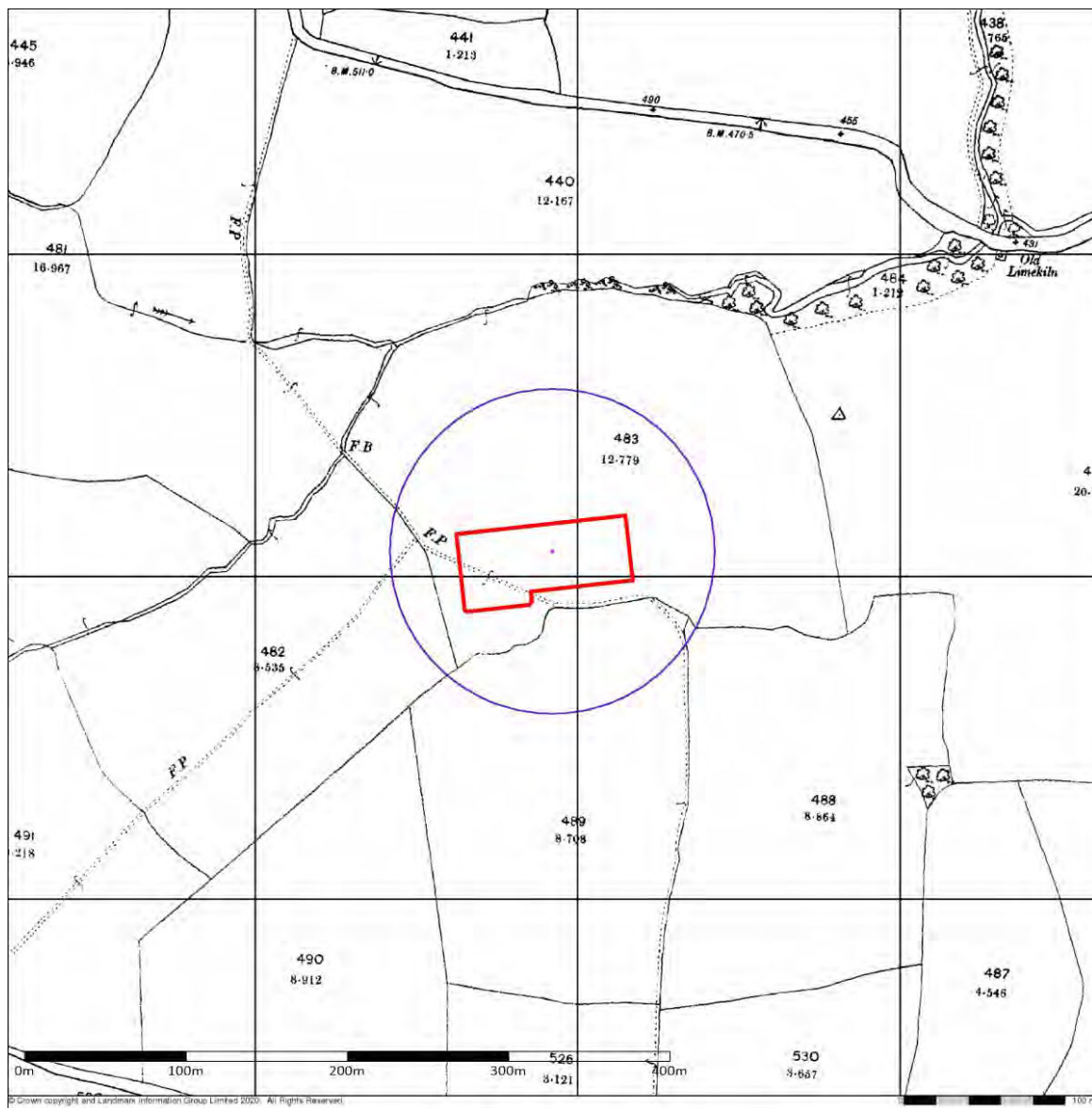
8.3.2. SGP reserves the right to alter any of the foregoing information in the event of new information being disclosed or provided and in the light of changes to legislation, guidelines and responses by the statutory and regulatory authorities.

DRAWINGS



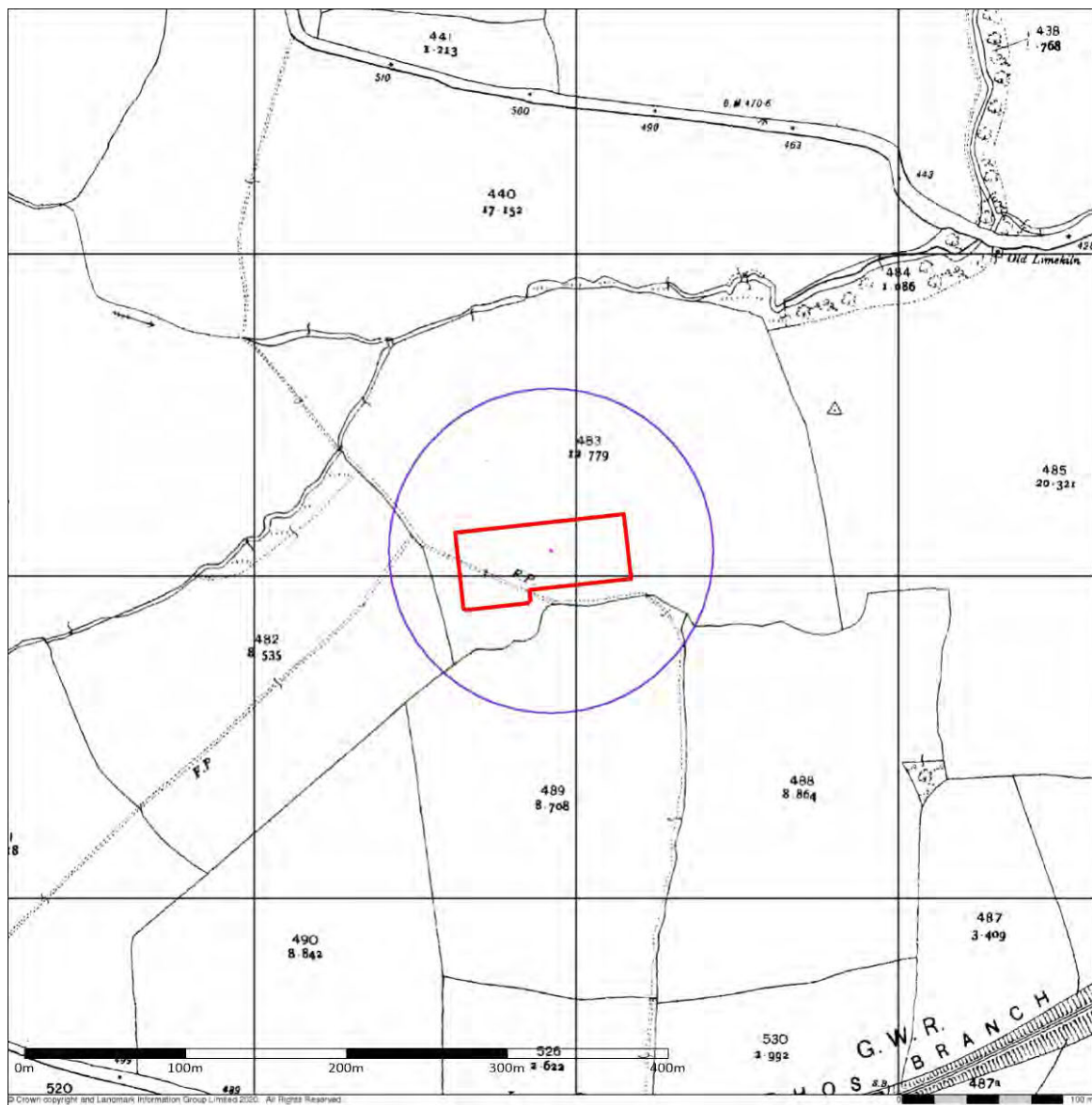
Ordnance Survey: © Crown copyright. All rights reserved. Licence number 100005799

D01: Historical Map – 1873 (1:10,560 scale)



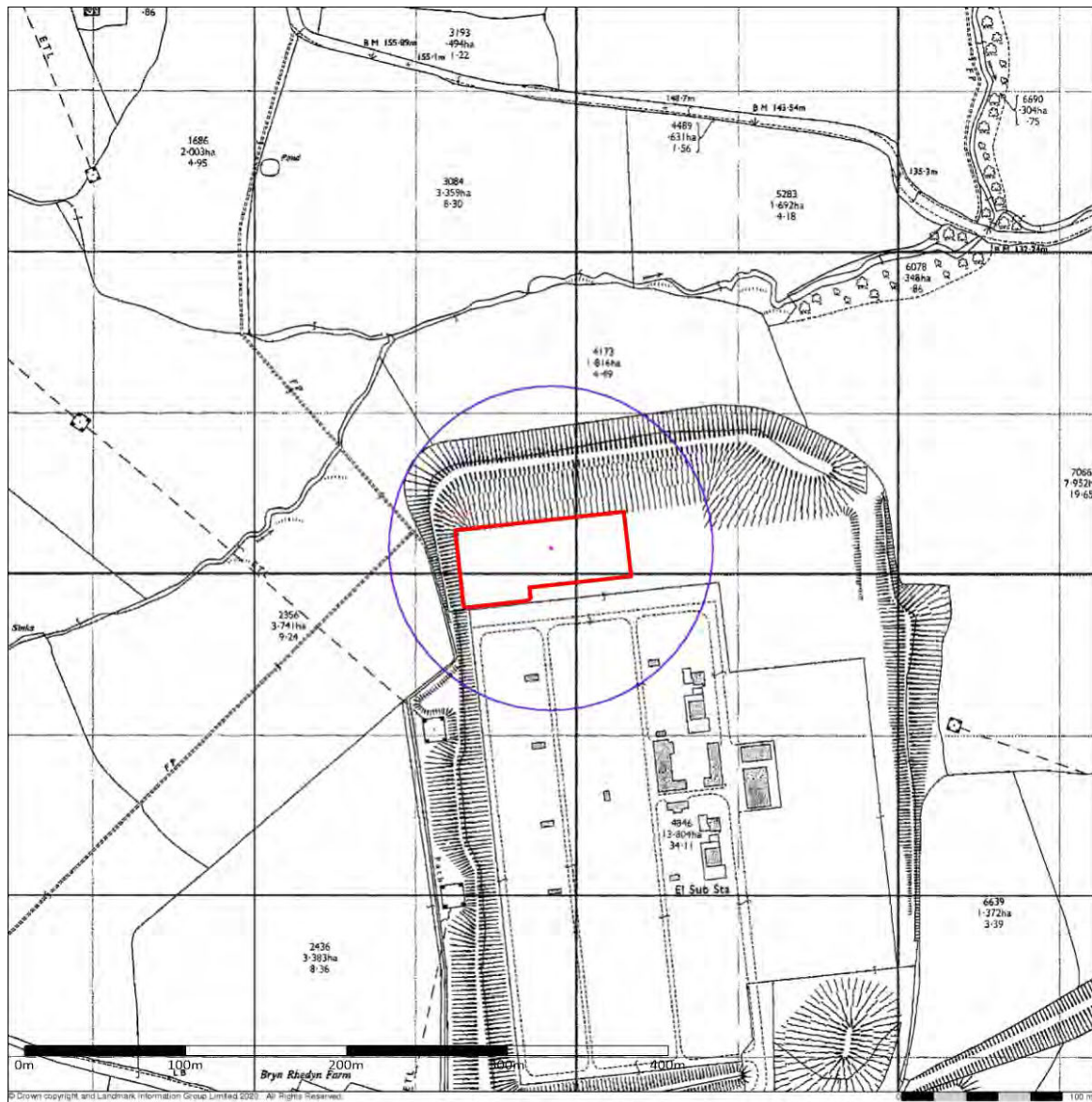
Ordnance Survey: © Crown copyright. All rights reserved. Licence number 100005799

D02: Historical Map – 1899 (1:2,500 scale)



Ordnance Survey: © Crown copyright. All rights reserved. Licence number 100005799

D03: Historical Map – 1912 (1:2,500 scale)



Ordnance Survey: © Crown copyright. All rights reserved. Licence number 100005799

D04: Historical Map – 1963 (1:2,500 scale)



Ordnance Survey: © Crown copyright. All rights reserved. Licence number 100005799

D05: Historical Map –1993 (1:2,500 scale)

APPENDIX A

Proposed Layout

APPENDIX B

Photographic Record

1.



Western view along the site's northern boundary

2.



South-eastern view across the main site. Site covered by generally level ground with some minor undulations and vegetation cover with some trees

3.



Southern view across the main site with National Grid substation present in the background

4.



Main site's southern boundary formed by palisade fence of substation

5.



Embankment (background) forms the site's northern boundary

6.



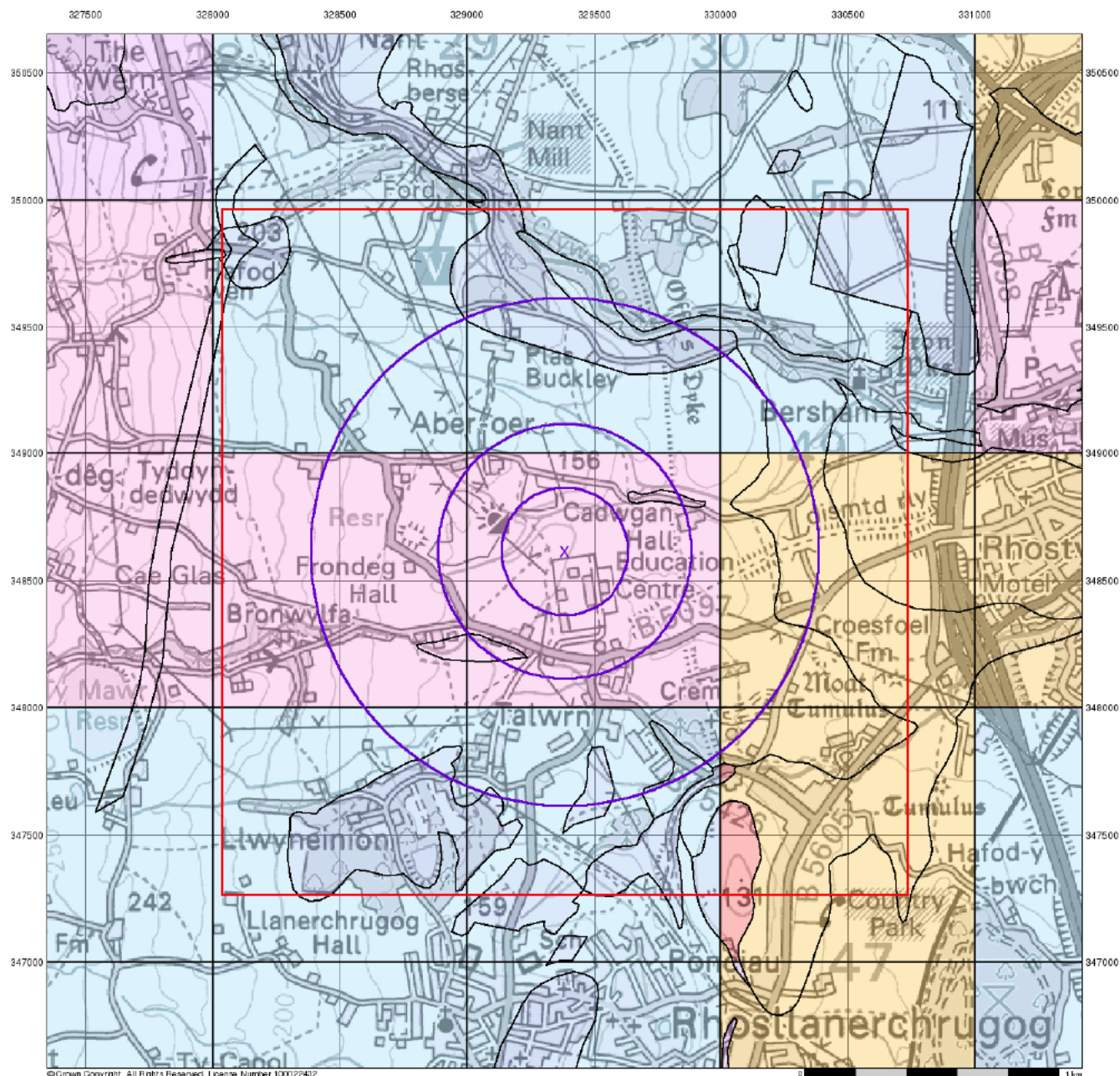
Woodland embankment with dense vegetation and mature trees forms the site's western boundary

7.  Manhole present in the north of the main site at the bottom of the embankment	8.  View of the site from the top of the embankment to the north
9.  Western view across the top of the embankment	10.  Exposed soils in the embankment from small animal burrows shows natural clay soils with angular gravel
11.  Eastern view along substation (off-site)	12.  Manholes present around the substation perimeter

to the east	
13.  Land to the east (beyond part of substation which forms eastern boundary) with dense vegetation	14.  Pond located approximately 100m to the east

APPENDIX C

Envirocheck Report (including Historical Maps)



© Crown Copyright. All Rights Reserved. License Number 100022432

Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Groundwater Vulnerability

General

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

Agency and Hydrological

Bedrock Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

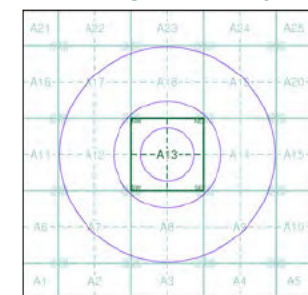
Superficial Aquifers

- High Vulnerability, Principal Aquifer
- High Vulnerability, Secondary Aquifer
- Medium Vulnerability, Principal Aquifer
- Medium Vulnerability, Secondary Aquifer
- Low Vulnerability, Principal Aquifer
- Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

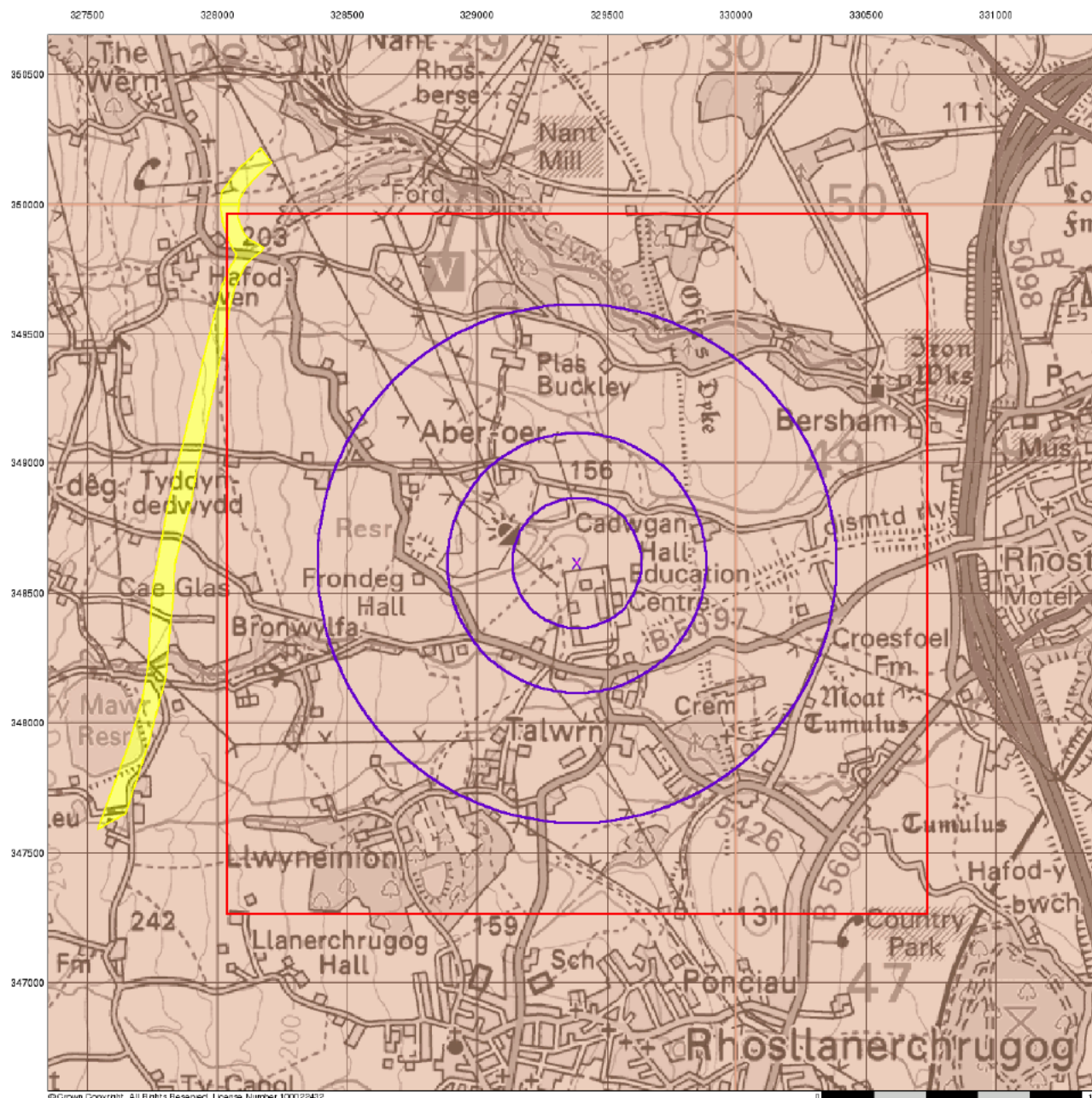
Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark
 INFORMATION GROUP

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



© Crown Copyright. All Rights Reserved. License Number 100022432

Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Bedrock Aquifer Designation

General

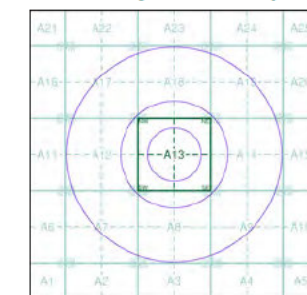
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Site
- Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

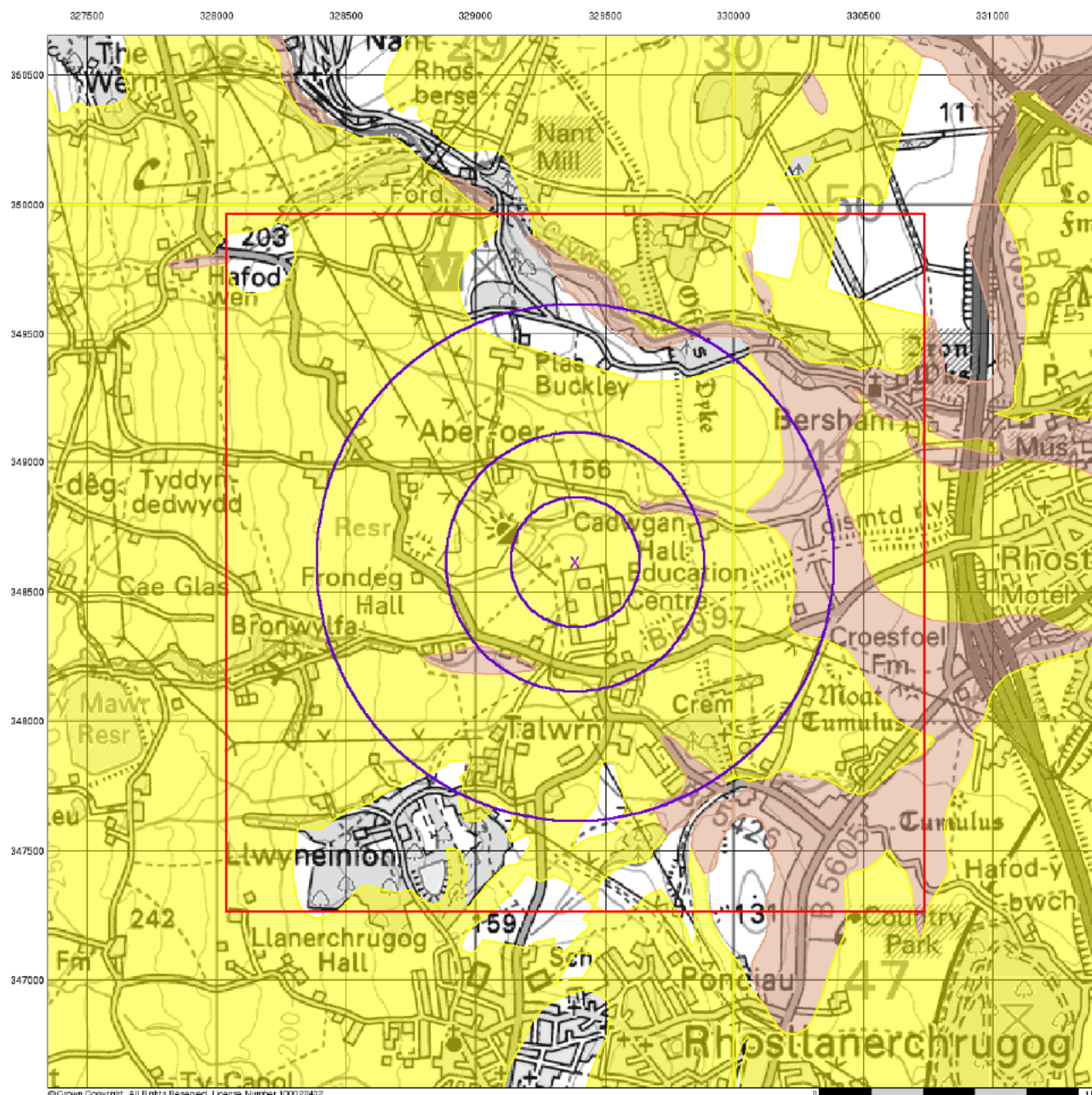
Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark[®]
 LANDMARK INFORMATION GROUP

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



Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Superficial Aquifer Designation

General

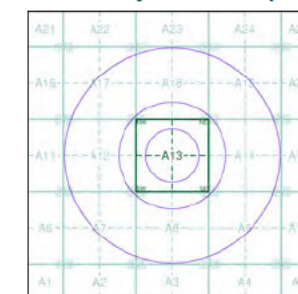
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

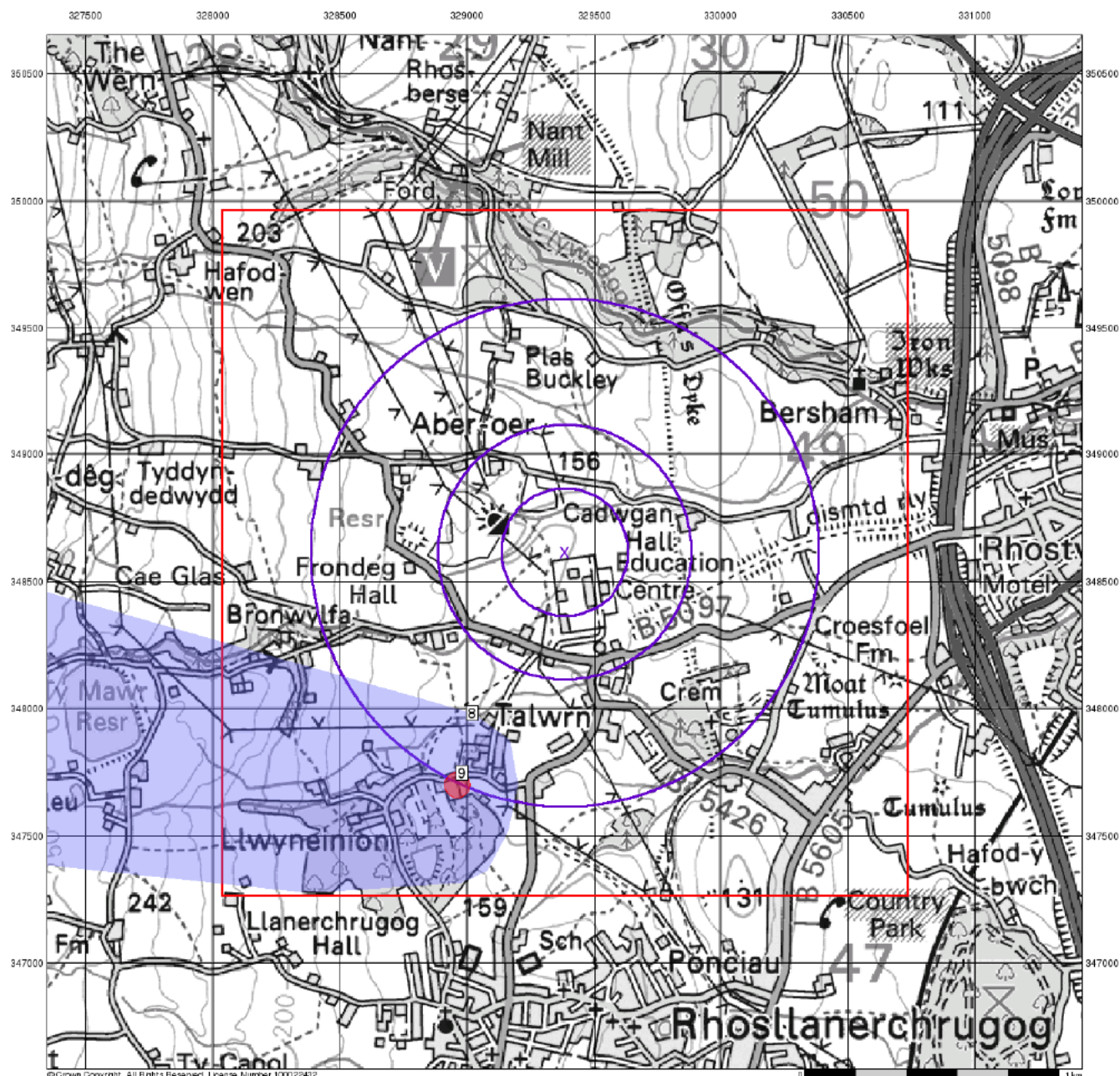
Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark[®]
 LANDMARK INFORMATION GROUP

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



© Crown Copyright. All Rights Reserved. License Number 100022432

Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Source Protection Zones

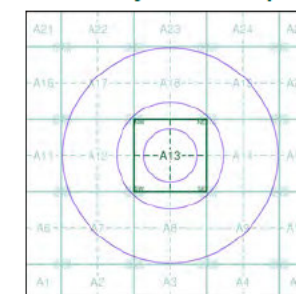
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



Order Details

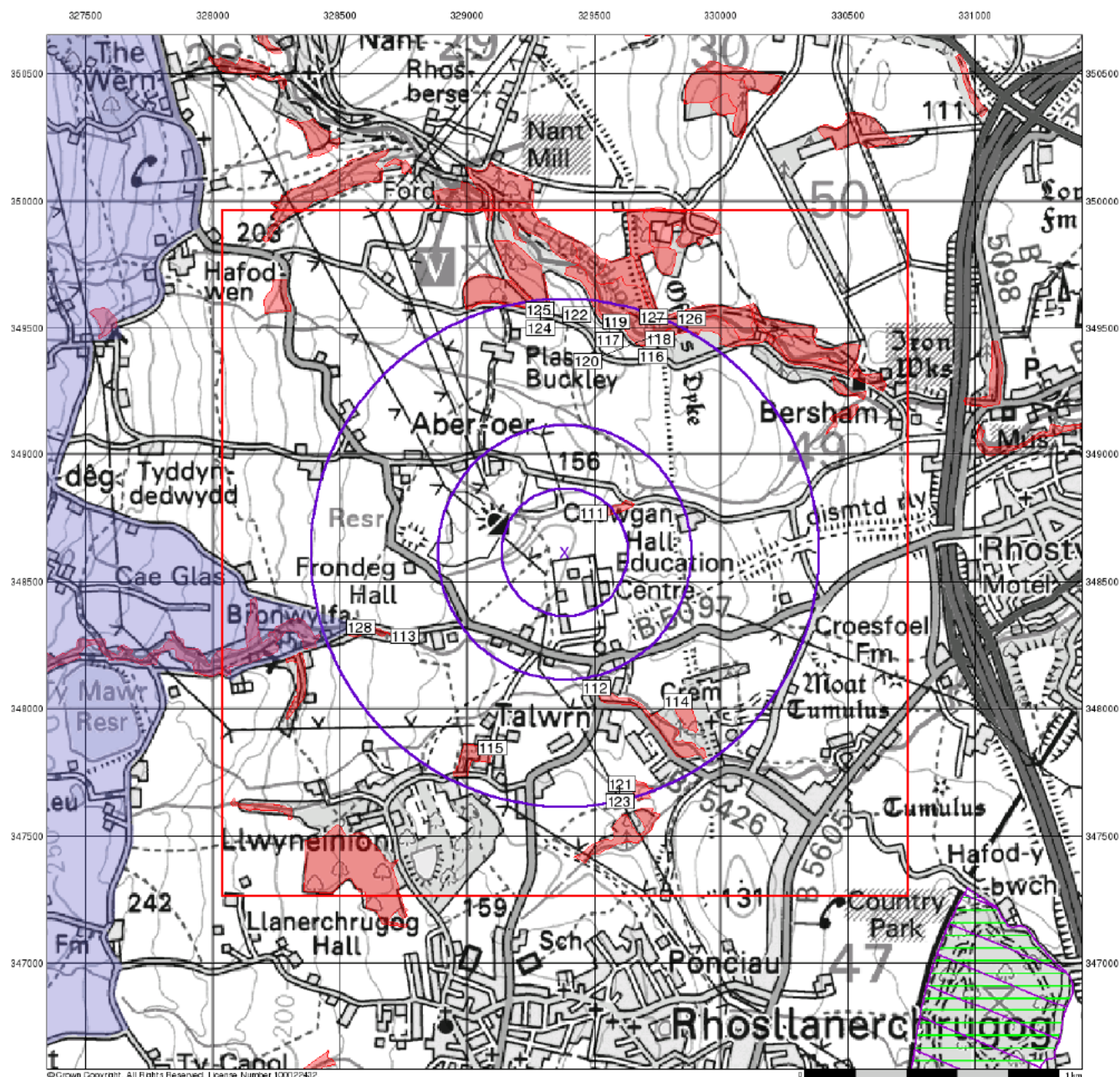
Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark
 INFORMATION GROUP

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



Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Sensitive Land Uses

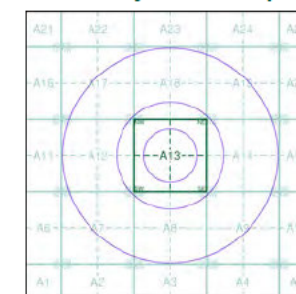
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



Order Details

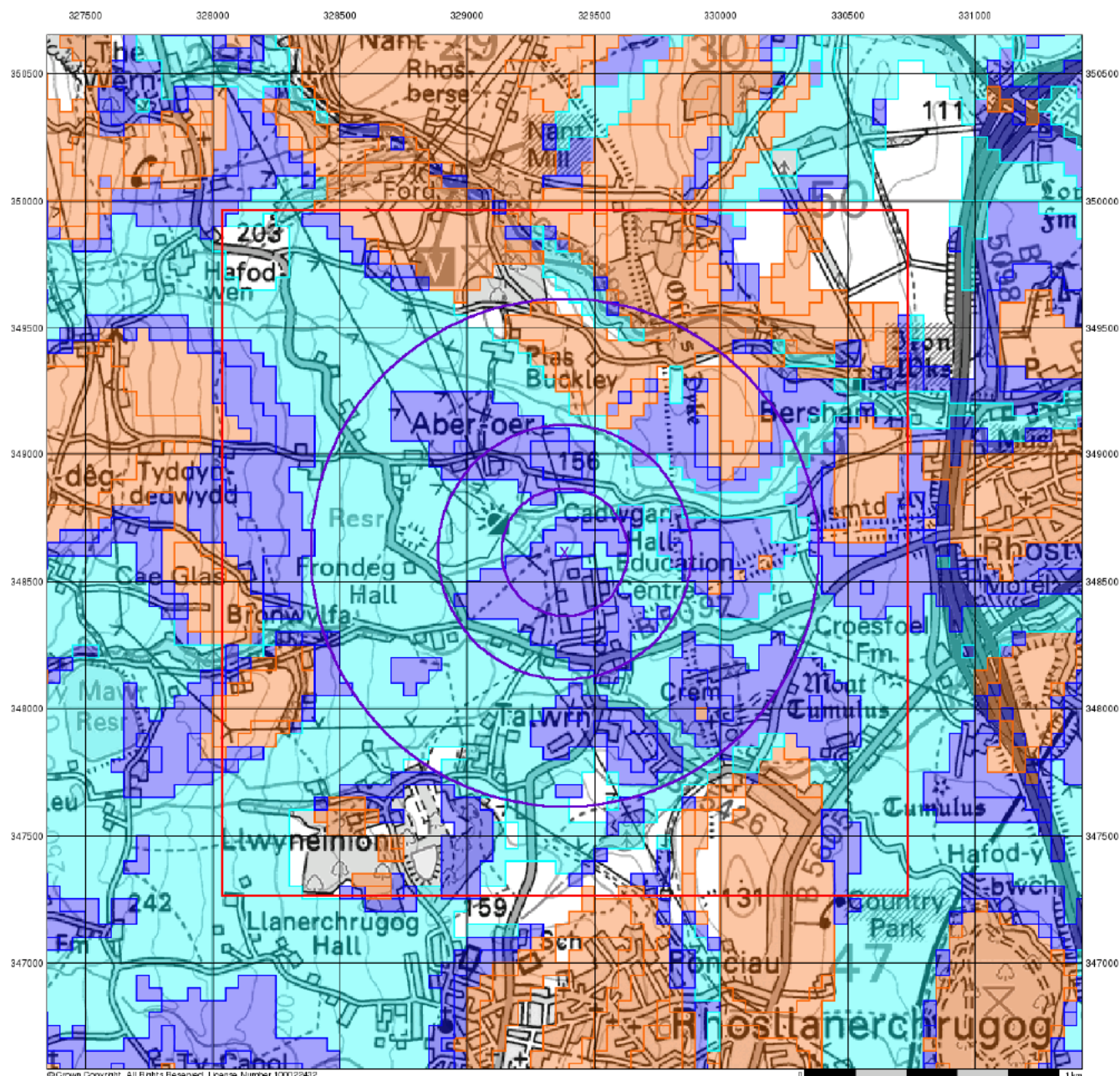
Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark[®]
 LANDMARK INFORMATION GROUP

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



© Crown Copyright. All Rights Reserved. License Number 100022432

Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

BGS Flood GFS Data

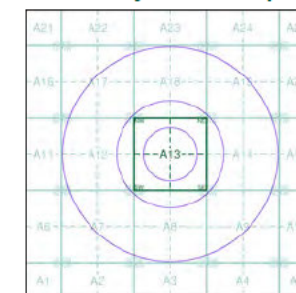
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 243353372_1_1
 Customer Ref: R2746C2
 National Grid Reference: 329380, 348620
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark
 LANDMARK INFORMATION GROUP

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

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

243353372_1_1

Customer Reference:

R2746C2

National Grid Reference:

329380, 348620

Slice:

A

Site Area (Ha):

0.01

Search Buffer (m):

1000

Site Details:

Site at 329380, 348620

Client Details:

Mr D Wayland
Smith Grant Partnership
Station House
Station Road
Ruabon
Wrexham
LL14 6DL

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	17
Hazardous Substances	-
Geological	18
Industrial Land Use	22
Sensitive Land Use	24
Data Currency	26
Data Suppliers	31
Useful Contacts	32

Introduction

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

Copyright Notice

© Landmark Information Group Limited 2020. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, the Environment Agency/Natural Resources Wales and Natural England, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer. A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report. © Environment Agency & United Kingdom Research and Innovation 2020. © Natural Resources Wales & United Kingdom Research and Innovation 2020.

Natural England Copyright Notice

Site of Special Scientific Interest, National Nature Reserve, Ramsar, Special Protection Area, Special Conservation Area, Marine Nature Reserve data (derived from Ordnance Survey 1:10000 raster) is provided by, and used with the permission of, Natural England who retain the copyright and Intellectual Property Rights for the data.

Scottish Natural Heritage Copyright

Contains SNH information licensed under the Open Government Licence v3 0.

Ove Arup Copyright Notice

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Peter Brett Associates Copyright Notice

The cavity data presented has been extracted from the PBA enhanced version of the original DEFRA national cavity databases. PBA/DEFRA retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by PBA. In no event shall PBA/DEFRA or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Natural Resources Wales Copyright Notice

Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right. Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Some features of this information are based on digital spatial data licensed from the Centre for Ecology & Hydrology © NERC (CEH). Defra, Met Office and DARD Rivers Agency © Crown copyright. © Cranfield University. © James Hutton Institute. Contains OS data © Crown copyright and database right 2020. Land & Property Services © Crown copyright and database right.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			3	10
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4				1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 5		Yes		
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 5				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 5				(*4)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 6	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Source Protection Zones	pg 6				2
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 6		6	17	60

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 17				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 17	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 17				1
Potentially Infilled Land (Non-Water)	pg 17				1
Potentially Infilled Land (Water)	pg 17				2
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 18	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 18	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 20			1	1
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 20	Yes	n/a	n/a	n/a
Mining Instability	pg 20	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 20	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 20		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 21	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 21	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 21	Yes		n/a	n/a
Radon Potential - Radon Affected Areas	pg 21	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 21	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 22				3
Fuel Station Entries					
Points of Interest - Commercial Services					
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 22			3	5
Points of Interest - Public Infrastructure	pg 22			2	11
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 24		1		16
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty	pg 25				1
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	0	1	329384 348616
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	16	1	329384 348600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (E)	68	1	329450 348600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	107	1	329450 348700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	188	1	329350 348800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (SE)	245	1	329500 348400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	255	1	329600 348750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (N)	285	1	329384 348900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	366	1	329750 348616
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	418	1	329800 348650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (SE)	425	1	329750 348400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	428	1	329650 348950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	471	1	329850 348550
1	Discharge Consents Operator: The National Grid Company Plc Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: Legacy 132/400kv Substation Wrexh, Wrexham Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: CM0029201 Permit Version: 1 Effective Date: 18th June 1965 Issued Date: 18th June 1965 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Pentrebychan Brook Status: Effective Positional Accuracy: Located by supplier to within 100m	A13SE (SE)	327	2	329600 348370

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	Discharge Consents Operator: H. Pritchard (Gresford) Ltd. Property Type: Domestic Property (Single) Location: Land Adjacent To Min Y Cored, Bronwylfa Road, Rhostyllen, Wrexham, Wales, LI14 4hy Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0440201 Permit Version: 1 Effective Date: 1st March 2006 Issued Date: 17th January 2006 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Pentrebychan Brook Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	442	2	329210 348210
3	Discharge Consents Operator: Mr L E Davies Property Type: Undefined Or Other Location: Legacy Station House Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0048101 Permit Version: 1 Effective Date: 26th February 1968 Issued Date: 26th February 1968 Revocation Date: 23rd February 1995 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Pentrebychan Brook Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A8NW (S)	444	2	329300 348180
4	Discharge Consents Operator: Company Secretary Property Type: Water Treatment Works Location: Legacy Wtw Bronwylfa Road Legacy Ne, Bronwylfa Road, Legacy, Near Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0108601 Permit Version: 2 Effective Date: 28th August 1991 Issued Date: 28th August 1991 Revocation Date: 5th February 1995 Discharge Type: Trade Effluent Discharge: Not Supplied Environment: Receiving Water: Pentrebychan Brook Status: Authorisation revoked Positional Accuracy: Located by supplier to within 10m	A8NE (S)	600	2	329610 348060
4	Discharge Consents Operator: Company Secretary Property Type: Water Treatment Works Location: Legacy Wtw Bronwylfa Road Legacy Ne, Bronwylfa Road, Legacy, Near Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0108601 Permit Version: 1 Effective Date: 1st January 1967 Issued Date: 29th March 1965 Revocation Date: 27th August 1991 Discharge Type: Trade Effluent Discharge: Not Supplied Environment: Receiving Water: Pentrebychan Brook Status: Authorisation revoked Positional Accuracy: Located by supplier to within 10m	A8NE (S)	600	2	329610 348060

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Discharge Consents Operator: National Grid Plc Property Type: Production & Distribution Of Electricity Location: Legacy Substation, Bronwylfa Road, Pentre Bychan, Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: Not Supplied Reference: Cg0430401 Permit Version: 1 Effective Date: 17th December 2004 Issued Date: 17th December 2004 Revocation Date: 1st August 2010 Discharge Type: Trade Discharges - Site Drainage (Contam Surface Water, Not Tips) Discharge: Freshwater Stream/River Environment: Receiving Water: Pentre Bychan Brook Status: Revoked under EPR 2010 Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	630	2	329650 348045
4	Discharge Consents Operator: Hafren Dyfrdwy Cyfyngedig Property Type: Water Treatment Works Location: Legacy Water Treatment Works, Brownwylfa Road, Legacy, Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0108601 Permit Version: 5 Effective Date: 4th January 2019 Issued Date: 20th December 2018 Revocation Date: Not Supplied Discharge Type: Sewerage And Trade Discharge - Process Water Discharge: Freshwater Stream/River Environment: Receiving Water: Pentrebychan Brook Status: Effective Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	632	2	329651 348043
4	Discharge Consents Operator: Company Secretary Property Type: Water Treatment Works Location: Legacy Wtw Bronwylfa Road Legacy Ne, Bronwylfa Road, Legacy, Near Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: Cm0108601 Permit Version: 4 Effective Date: 30th April 2003 Issued Date: 29th April 2003 Revocation Date: Not Supplied Discharge Type: Sewerage And Trade Discharge - Process Water Discharge: Freshwater Stream/River Environment: Receiving Water: Pentrebychan Brook Status: Effective Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	632	2	329651 348043
4	Discharge Consents Operator: Company Secretary Property Type: Water Treatment Works Location: Legacy Wtw Bronwylfa Road Legacy Ne, Bronwylfa Road, Legacy, Near Wrexham, LI14 4hy Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0108601 Permit Version: 3 Effective Date: 6th February 1995 Issued Date: 6th February 1995 Revocation Date: 30th April 2003 Discharge Type: Trade Discharges - Process Effluent - Water Company (Wtw) Discharge: Not Supplied Environment: Receiving Water: Pentrebychan Brook Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	632	2	329651 348043

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Discharge Consents Operator: Mr & Mrs A & D E Morris Property Type: Domestic Property (Single) Location: Esclusham Hall Legacy Wrexham Authority: Natural Resources Wales Catchment Area: River Dee Reference: CM0232001 Permit Version: 2 Effective Date: 21st June 1993 Issued Date: 21st June 1993 Revocation Date: Not Supplied Discharge Type: Unspecified Discharge: Freshwater Stream/River Environment: Receiving Water: Pentrebychan Brook Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	644	2	329650 348030
4	Discharge Consents Operator: Mr & Mrs A & D E Morris Property Type: Domestic Property (Single) Location: Esclusham Hall Legacy Wrexham Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0232001 Permit Version: 1 Effective Date: 26th November 1990 Issued Date: 26th November 1990 Revocation Date: 20th June 1993 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Pentrebychan Brook Status: Authorisation revoked Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	644	2	329650 348030
5	Discharge Consents Operator: The National Grid Company Plc Property Type: SUB-STATION/ELECTRICITY/GAS/AIR CONDITIONING SUPPLY Location: Legacy 132/400kv Substation Wrexh, Wrexham Authority: Natural Resources Wales Catchment Area: BLACK BROOK (CLYWEDOG) Reference: CM0036201 Permit Version: 1 Effective Date: 8th August 1966 Issued Date: 8th August 1966 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Pentrebychan Brook Status: Effective Positional Accuracy: Located by supplier to within 100m	A8NE (S)	606	2	329600 348050
6	Discharge Consents Operator: National Grid Company Plc Property Type: Other Transport Location: Wrexham Legacy Depot & Garage Authority: Natural Resources Wales Catchment Area: River Dee Reference: Cm0083001 Permit Version: 1 Effective Date: 13th July 1977 Issued Date: 13th July 1977 Revocation Date: 5th April 1995 Discharge Type: Unspecified Discharge: Not Supplied Environment: Receiving Water: Trib. Of Pentrebychan Brook Status: Consent expired Positional Accuracy: Located by supplier to within 10m	A8SW (S)	940	2	329100 347720
7	Local Authority Pollution Prevention and Controls Name: Pentrebychan Crematorium Location: Pentrebychan, WREXHAM, Clwyd, LL14 4EP Authority: Wrexham County Borough Council, Environmental Health Department Permit Reference: WCBC/PG5/2/PC(v3) Dated: 14th July 1993 Process Type: Local Authority Air Pollution Control Description: PG5/2 Crematoria Status: Authorised Positional Accuracy: Automatically positioned to the address	A9SW (SE)	895	3	329964 347935

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Nearest Surface Water Feature	A13NE (E)	139	-	329523 348620
	River Quality Name: Clywedog GQA Grade: River Quality A Reach: Conf.Black Bk.Erddig Pk-Conf.Trib. Estimated Distance (km): 5.3 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A19NW (N)	932	4	329730 349481
	Water Abstractions Operator: Dee Valley Water Plc Licence Number: 24/67/7/0037 Permit Version: 100 Location: Talwrn Borehole Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Talwrn Borehole Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	1010	2	328960 347700
	Water Abstractions Operator: Hafren Dyfrdwy Cyfyngedig Licence Number: 24/67/7/0037 Permit Version: Not Supplied Location: Underground Strata At Talwrn Nr Rhosllanerchrugog, Llwyneinion Road, Legacy, Rhosyllen, Rhosllanerchrugog, Wrexham, LI14 4et Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct 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: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	1010	2	328960 347700
	Water Abstractions Operator: Dee Valley Water Plc Licence Number: 24/67/7/0036 Permit Version: 100 Location: Ty Mawrreservoir Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Ty Mawrreservoir Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th August 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1846	2	327670 347931

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Hafren Dyfrdwy Cyfyngedig Licence Number: 24/67/7/0036 Permit Version: Not Supplied Location: Abstraction From Points 'K' - Ty Mawr Res And 'L' - Cae Llwyd Res, Ty Mawr Reservoir, Cae Llwyd Reservoir, LI14 1uj Authority: Natural Resources Wales Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1846	2	327670 347931
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: >10m Superficial Recharge: Low	A13NE (NE)	0	2	329384 348616
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	2	329384 348616
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (NE)	0	2	329384 348616
8	Source Protection Zones Name: Not Supplied Source: Natural Resources Wales Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A7NE (SW)	730	2	329021 347983
9	Source Protection Zones Name: Not Supplied Source: Natural Resources Wales Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A7SE (SW)	960	2	328981 347745
	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				
10	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 324.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	146	5	329253 348679

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 185.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (N)	157	5	329345 348767
12	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 97.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	164	5	329286 348746
13	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 220.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NE (NE)	181	5	329466 348776
14	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	235	5	329193 348751
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 51.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	236	5	329191 348751
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	283	5	329143 348762
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 339.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NW (NW)	288	5	329138 348764
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NE (NE)	329	5	329649 348810
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 150.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13SW (W)	337	5	329053 348559

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13SW (W)	337	5	329053 348559
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NE (NE)	338	5	329656 348816
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 401.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NE (NE)	347	5	329660 348826
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 144.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A13NE (NE)	348	5	329661 348825
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 110.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NE (S)	383	5	329447 348238
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 808.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A8NW (SW)	431	5	329173 348241
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.4 Watercourse Level: Underground Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A8NW (S)	432	5	329270 348199
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 278.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A8NW (S)	435	5	329277 348195
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 12.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NE (W)	437	5	328949 348648

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 248.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NE (W)	447	5	328940 348656
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14NW (NE)	467	5	329798 348831
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1051.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14NW (NE)	470	5	329802 348831
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 428.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18SE (N)	496	5	329456 349106
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 517.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18SE (N)	502	5	329464 349111
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 131.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NE (S)	520	5	329463 348102
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 439.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A8NE (S)	520	5	329463 348102
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 238.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	568	5	329264 348061
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 11.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	569	5	329347 348049

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	570	5	329324 348049
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	570	5	329333 348049
40	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 540.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A14SW (SE)	572	5	329873 348319
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 45.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (S)	574	5	329337 348044
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 391.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17SE (NW)	602	5	328887 348954
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 36.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (SW)	674	5	329117 347997
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 78.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NE (W)	682	5	328710 348719
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 169.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NE (W)	682	5	328710 348719
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 336.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NW (W)	693	5	328692 348643

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8NW (SW)	707	5	329095 347971
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18SW (NW)	723	5	329108 349283
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 142.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18SW (NW)	727	5	329102 349285
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A7NE (SW)	783	5	328954 347962
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 176.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NW (W)	803	5	328621 348862
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 299.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17NE (NW)	803	5	328968 349302
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 61.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17NE (NW)	803	5	328968 349302
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 150.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12SW (W)	808	5	328593 348456
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 86.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12SW (W)	808	5	328593 348456

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 577.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SE (S)	811	5	329428 347807
57	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 49.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A9SW (SE)	812	5	329824 347933
58	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	825	5	329378 347791
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 173.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	826	5	329371 347790
60	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 140.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A7SE (SW)	843	5	329019 347857
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 268.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A9SW (SE)	844	5	329826 347897
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 79.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NW (N)	855	5	329167 349442
63	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A12SW (W)	855	5	328588 348305
64	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17NE (NW)	855	5	328966 349361

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 39.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A12SW (W)	857	5	328586 348305
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 53.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12SW (W)	857	5	328586 348307
67	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 245.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A7SE (SW)	859	5	328888 347915
68	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 386.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17NE (NW)	859	5	328967 349366
69	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 141.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12SW (W)	881	5	328548 348341
70	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A12SW (W)	889	5	328551 348309
71	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 592.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pentrebychan Brook Catchment Name: Dee Primacy: 1	A12SW (W)	891	5	328547 348312
72	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 512.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Clywedog Catchment Name: Dee Primacy: 1	A18NE (N)	893	5	329674 349460
73	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 200.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	895	5	329874 349365

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 148.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A18NW (N)	905	5	329093 349472
75	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 72.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	920	5	329224 347710
76	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 42.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	920	5	329224 347710
77	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 57.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	936	5	329182 347702
78	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 111.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A7SE (SW)	946	5	329004 347751
79	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 23.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	948	5	329106 347710
80	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 51.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (NE)	953	5	329760 349491
81	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 417.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12NW (W)	957	5	328457 348849
82	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 69.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Afon Clywedog Catchment Name: Dee Primacy: 1	A19NW (NE)	961	5	329778 349492

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (N)	976	5	329749 349520
84	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 17.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (N)	979	5	329747 349524
85	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 10.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	986	5	329182 347651
86	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 233.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A17SW (NW)	987	5	328520 349092
87	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 321.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A19NW (N)	993	5	329743 349541
88	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 536.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	996	5	329180 347642
89	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 265.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A8SW (S)	996	5	329180 347642
90	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 64.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 1	A12SW (W)	998	5	328414 348384
91	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 2	A19NW (NE)	999	5	329849 349499

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 228.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Dee Primacy: 2	A19NW (NE)	999	5	329849 349499

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	Historical Landfill Sites Licence Holder: Not Supplied Location: Llwyneinion Name: Llwyneinion Old Refuse Tip No.2 Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD14255 First Input Date: 31st December 1939 Last Input Date: 31st December 1961 Specified Waste: Deposited Waste included Commercial and Household Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 6955/0039 BGS Ref: Not Supplied Other Ref: Not Supplied	A7NE (SW)	777	2	328965 347962
	Local Authority Landfill Coverage Name: Wrexham County Borough Council - Has supplied landfill data		0	6	329384 348616
94	Local Authority Recorded Landfill Sites Location: Llwyneinion Old Refuse Tip 2, Llwyneinion, Wrexham Reference: 6955/0039 Authority: Wrexham County Borough Council Last Reported Status: Closed Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A7NE (SW)	775	6	328964 347965
95	Potentially Infilled Land (Non-Water) Bearing Ref: SW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A7SE (SW)	887	-	328961 347836
96	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1963	A8SE (S)	735	-	329462 347885
97	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1938	A8SE (S)	960	-	329604 347682

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Lower Coal Measures Formation And South Wales Lower Coal Measures Formation (Undifferentiated)	A13NE (NE)	0	1	329384 348616
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel 15 - 30 mg/kg Concentration:	A13NE (NE)	0	1	329384 348616
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A13SE (S)	116	1	329384 348500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel <15 mg/kg Concentration:	A12NE (W)	385	1	329000 348616
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel 15 - 30 mg/kg Concentration:	A12SE (SW)	505	1	329000 348289
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel <15 mg/kg Concentration:	A8NE (S)	616	1	329384 348000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel 15 - 30 mg/kg Concentration:	A14NW (E)	682	1	330041 348799

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: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A9NW (SE)	753	1	329734 347949
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A8SE (S)	780	1	329490 347843
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A14SE (E)	856	1	330218 348422
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A7SE (SW)	870	1	328975 347848
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A18NE (N)	877	1	329661 349447
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: 100 - 200 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A18NE (N)	926	1	329579 349520

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: Rural Soil and Sediment Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <100 mg/kg Nickel 15 - 30 mg/kg Concentration:	A17SW (NW)	965	1	328500 349000
98	BGS Recorded Mineral Sites Site Name: Talwrn Lodge Location: Bersham, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 184992 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Not Available Geology: ! Commodity: Lead Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	449	1	329628 348239
99	BGS Recorded Mineral Sites Site Name: Talwrn Pumping Station Location: Rhosllanerchrugog, Wrexham, Denbighshire Source: British Geological Survey, National Geoscience Information Service Reference: 184993 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Lower Coal Measures Formation And Pennine Middle Coal Measures Formation (Undifferentiated) Commodity: Coal - Deep Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	990	1	328784 347829
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (NE)	0	7	329384 348616
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (NE)	0	-	329384 348616
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	20	1	329381 348635
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	107	1	329321 348530
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616

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	A13NE (NE)	0	1	329384 348616
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	136	1	329430 348743
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	187	1	329333 348795
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	217	1	329444 348824
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	329384 348616

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
100	Contemporary Trade Directory Entries Name: Clean & Green Ltd Location: Woodpecker Cottage, Talwrn Road, Rhosyllen, Wrexham, Clwyd, LL14 4ES Classification: Cleaning Materials & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (S)	596	-	329599 348060
101	Contemporary Trade Directory Entries Name: Gavin Jones Body Repairs Location: Talwrn Road, Rhosyllen, Wrexham, Clwyd, LL14 4ER Classification: Car Body Repairs Status: Active Positional Accuracy: Manually positioned within the geographical locality	A8SE (S)	748	-	329405 347868
102	Contemporary Trade Directory Entries Name: Pentre Bychan Crematorium Location: Pentre Bychan Road, Pentre Bychan, Wrexham, Clwyd, LL14 4EP Classification: Cemeteries & Crematoria Status: Active Positional Accuracy: Automatically positioned to the address	A9SW (SE)	895	-	329964 347935
103	Points of Interest - Manufacturing and Production Name: Bronwylfa Reservoir - Solar Photovoltaics (DECC) Location: E/O Bronwylfa Reservoir, Aberoer Road, Aberoer, Wrexham, LL14 4LG Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to address or location	A12NE (W)	413	8	328999 348762
104	Points of Interest - Manufacturing and Production Name: Shaft Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	441	8	329623 348245
104	Points of Interest - Manufacturing and Production Name: Shaft Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A8NE (SE)	448	8	329627 348240
105	Points of Interest - Manufacturing and Production Name: J H Morris Location: Cadwgan Hall, Bersham, Wrexham, LL14 4LH Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A14NW (E)	514	8	329888 348715
106	Points of Interest - Manufacturing and Production Name: Works Location: LL14 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	654	8	329118 348019
106	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	658	8	329110 348018
107	Points of Interest - Manufacturing and Production Name: Shaft (disused) Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to address or location	A7SE (SW)	983	8	328789 347834
107	Points of Interest - Manufacturing and Production Name: Shaft (Disused) Location: LL14 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	998	8	328778 347823
108	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	447	8	329215 348203

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
108	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8NW (S)	449	8	329219 348199
109	Points of Interest - Public Infrastructure Name: Weirs Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	746	8	329737 347959
109	Points of Interest - Public Infrastructure Name: Weirs Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	746	8	329747 347964
109	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	817	8	329817 347923
109	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	818	8	329810 347918
109	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	844	8	329810 347887
109	Points of Interest - Public Infrastructure Name: Weir Location: LL14 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	845	8	329803 347882
110	Points of Interest - Public Infrastructure Name: Crematorium Location: LL14 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A9SW (SE)	893	8	329968 347940
110	Points of Interest - Public Infrastructure Name: Wrexham Cemetery & Crematorium Location: Pentre Bychan Road, Pentre Bychan, Wrexham, LL14 4EP Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A9SW (SE)	895	8	329963 347934
110	Points of Interest - Public Infrastructure Name: Wrexham Crematorium Location: Pentre Bychan Road, Pentre Bychan, Wrexham, LL14 4EP Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A9SW (SE)	895	8	329964 347935
110	Points of Interest - Public Infrastructure Name: Wrexham Crematorium Location: Pentre Bychan Road, Pentre Bychan, Wrexham, LL14 4EP Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A9SW (SE)	895	8	329964 347935
110	Points of Interest - Public Infrastructure Name: Pentre Bychan Crematorium Location: Pentre Bychan Road, Pentre Bychan, Wrexham, LL14 4EP Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to address or location	A9SW (SE)	895	8	329964 347935

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
111	Ancient Woodland Name: Not Supplied Reference: 31891 Area(m ²): 5037.11 Type: Ancient and Semi-Natural Woodland	A13NE (NE)	189	2	329496 348768
112	Ancient Woodland Name: Not Supplied Reference: 31884 Area(m ²): 18996.87 Type: Ancient and Semi-Natural Woodland	A8NE (S)	548	2	329506 348081
113	Ancient Woodland Name: Not Supplied Reference: 31888 Area(m ²): 3812.63 Type: Ancient and Semi-Natural Woodland	A12SE (SW)	712	2	328753 348287
114	Ancient Woodland Name: Not Supplied Reference: 31883 Area(m ²): 7490.9 Type: Ancient and Semi-Natural Woodland	A9NW (SE)	739	2	329832 348028
115	Ancient Woodland Name: Not Supplied Reference: 36794 Area(m ²): 10029.13 Type: Restored Ancient Woodland Site	A8SW (S)	822	2	329099 347845
116	Ancient Woodland Name: Not Supplied Reference: 27370 Area(m ²): 12198.45 Type: Ancient and Semi-Natural Woodland	A18NE (N)	870	2	329677 349434
117	Ancient Woodland Name: Not Supplied Reference: 44057 Area(m ²): 8750.89 Type: Plantation on Ancient Woodland	A18NE (N)	921	2	329560 349519
118	Ancient Woodland Name: Not Supplied Reference: 44697 Area(m ²): 2253.19 Type: Plantation on Ancient Woodland	A19NW (NE)	924	2	329762 349458
119	Ancient Woodland Name: Not Supplied Reference: 45171 Area(m ²): 36368.75 Type: Plantation on Ancient Woodland	A18NE (N)	932	2	329589 349525
120	Ancient Woodland Name: Not Supplied Reference: 28402 Area(m ²): 25384.63 Type: Ancient and Semi-Natural Woodland	A19NW (NE)	937	2	329755 349475
121	Ancient Woodland Name: Not Supplied Reference: 31882 Area(m ²): 1084.43 Type: Ancient and Semi-Natural Woodland	A8SE (S)	939	2	329608 347704
122	Ancient Woodland Name: Not Supplied Reference: 29693 Area(m ²): 27707.99 Type: Restored Ancient Woodland Site	A18NW (N)	941	2	329319 349553
123	Ancient Woodland Name: Not Supplied Reference: 28399 Area(m ²): 4083.8 Type: Ancient and Semi-Natural Woodland	A8SE (S)	943	2	329602 347699
124	Ancient Woodland Name: Not Supplied Reference: 36796 Area(m ²): 2560.91 Type: Restored Ancient Woodland Site	A18NW (N)	956	2	329286 349566

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	Ancient Woodland Name: Not Supplied Reference: 29692 Area(m ²): 23390.88 Type: Restored Ancient Woodland Site	A18NW (N)	961	2	329283 349571
126	Ancient Woodland Name: Not Supplied Reference: 36797 Area(m ²): 18121.59 Type: Restored Ancient Woodland Site	A19NW (N)	990	2	329744 349538
127	Ancient Woodland Name: Not Supplied Reference: 29694 Area(m ²): 16608.75 Type: Restored Ancient Woodland Site	A19NW (N)	993	2	329737 349543
128	Areas of Outstanding Natural Beauty Name: Bryniau Clwyd A Dyffryn Dyfrdwy/Clwydian Range And Dee Valley Multiple Areas: N Total Area (m2): 389277308.58 Designation Date: 22nd November 2011 Source: Natural Resources Wales	A12SW (W)	859	2	328579 348319

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Flintshire Council - Environmental Health Department Wrexham County Borough Council - Public Protection Department Denbighshire County Council - Public Protection Department	April 2014 April 2016 January 2015	Annual Rolling Update Annually Annual Rolling Update
Discharge Consents Natural Resources Wales Environment Agency - Welsh Region	April 2020 August 2014	Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Welsh Region	March 2013	Annual Rolling Update
Integrated Pollution Controls Environment Agency - Welsh Region	October 2008	Variable
Integrated Pollution Prevention And Control Environment Agency - Welsh Region Natural Resources Wales	April 2020 April 2020	Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control Wrexham County Borough Council - Environmental Health Department Flintshire Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 April 2016 March 2013	Variable Variable Variable
Local Authority Pollution Prevention and Controls Wrexham County Borough Council - Environmental Health Department Flintshire Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 April 2016 December 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Wrexham County Borough Council - Environmental Health Department Flintshire Council - Environmental Health Department Denbighshire County Council - Environmental Health Department	April 2014 April 2016 December 2014	Variable Variable Variable
Nearest Surface Water Feature Ordnance Survey	April 2020	
Pollution Incidents to Controlled Waters Environment Agency - Welsh Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Prosecutions Relating to Controlled Waters Environment Agency - Welsh Region Natural Resources Wales	March 2013 March 2013	Annual Rolling Update Annual Rolling Update
Registered Radioactive Substances Natural Resources Wales Environment Agency - Welsh Region	January 2015 June 2016	Annually
River Quality Environment Agency - Head Office	November 2001	Not Applicable
Substantiated Pollution Incident Register Environment Agency Wales - North Area Natural Resources Wales	April 2020 April 2020	Quarterly Quarterly
Water Abstractions Environment Agency - Welsh Region Natural Resources Wales	April 2020 April 2020	Quarterly Quarterly
Water Industry Act Referrals Natural Resources Wales Environment Agency - Welsh Region	April 2020 October 2017	Quarterly Quarterly
Groundwater Vulnerability Map Natural Resources Wales	June 2018	As notified

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

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Natural Resources Wales	July 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Welsh Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency Wales - North Area Natural Resources Wales	November 2019 November 2019	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency Wales - North Area Natural Resources Wales	April 2020 April 2020	Quarterly Quarterly
Local Authority Landfill Coverage Denbighshire County Council - Environmental Health Department Flintshire Council - Environmental Health Department Wrexham County Borough Council	May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Wrexham County Borough Council Denbighshire County Council - Environmental Health Department Flintshire Council - Environmental Health Department	June 2003 May 2000 May 2000	Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency Wales - North Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency Wales - North Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency Wales - North Area	March 2003	Not Applicable
Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Denbighshire County Council - Planning Department Wrexham County Borough Council - Planning Department Flintshire Council	February 2016 February 2016 January 2016	Variable Variable Variable
Planning Hazardous Substance Consents Denbighshire County Council - Planning Department Wrexham County Borough Council - Planning Department Flintshire Council	February 2016 February 2016 January 2016	Variable Variable Variable

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	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	January 2020	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2020	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	March 2020	Quarterly
Points of Interest - Education and Health PointX	March 2020	Quarterly
Points of Interest - Manufacturing and Production PointX	March 2020	Quarterly
Points of Interest - Public Infrastructure PointX	March 2020	Quarterly
Points of Interest - Recreational and Environmental PointX	March 2020	Quarterly
Underground Electrical Cables National Grid	October 2019	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural Resources Wales	August 2018	Bi-Annually
Areas of Adopted Green Belt Denbighshire County Council Flintshire Council Wrexham County Borough Council	February 2020 February 2020 February 2020	As notified As notified As notified
Areas of Unadopted Green Belt Denbighshire County Council Flintshire Council Wrexham County Borough Council	February 2020 February 2020 February 2020	As notified As notified As notified
Areas of Outstanding Natural Beauty Natural Resources Wales	June 2019	Bi-Annually
Environmentally Sensitive Areas The National Assembly for Wales - GI Services (Department of Planning & Countryside)	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Denbighshire County Council Flintshire Council Wrexham County Borough Council	August 2018 August 2018 August 2018	Bi-Annually Bi-Annually Bi-Annually
Marine Nature Reserves Natural Resources Wales	August 2018	Bi-Annually
National Nature Reserves Natural Resources Wales	June 2019	Bi-Annually
National Parks Natural Resources Wales	August 2018	Annually
Nitrate Vulnerable Zones Natural Resources Wales The National Assembly for Wales - GI Services (Department of Planning & Countryside)	July 2019 October 2005	Bi-Annually
Ramsar Sites Natural Resources Wales	July 2019	Bi-Annually
Sites of Special Scientific Interest Natural Resources Wales	March 2020	Bi-Annually
Special Areas of Conservation Natural Resources Wales	August 2018	Bi-Annually
Special Protection Areas Natural Resources Wales	August 2018	Bi-Annually

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	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Natural Resources Wales Ty Cambria, 29 Newport Road, Cardiff, CF24 0TP	Telephone: 0300 065 3000 Email: enquiries@naturalresourceswales.gov.uk
3	Wrexham County Borough Council - Environmental Health Department Crown Buildings, P O Box 1297, Wrexham, Clwyd, LL13 8ZE	Telephone: 01978 297038 Fax: 01978 292502 Website: www.wrexham.gov.uk
4	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	Wrexham County Borough Council Lampet Street, Guildhall, Wrexham, Clwyd, LL11 1WL	Telephone: 01978 292000 Fax: 01978 292502 Website: www.wrexham.gov.uk
7	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

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		
	Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Fenced Minor Roads		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				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	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		Glasshouse		
	Sloping Masonry		Pylon		Electricity Transmission Line
			Pole		
	Cutting		Embankment		
	Road Under		Road Over		Level Crossing
	Foot Bridge				
	Standard Gauge Multiple Track		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				
	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
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	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

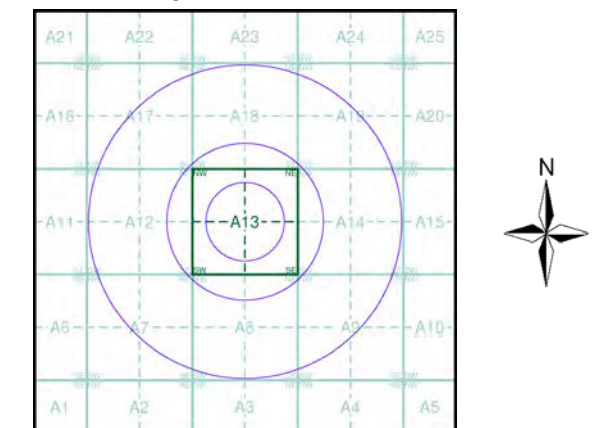
Envirocheck[®]

LANDMARK INFORMATION GROUP[®]

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Denbighshire	1:10,560	1879	2
Denbighshire	1:10,560	1900	3
Denbighshire	1:10,560	1914 - 1915	4
Denbighshire	1:10,560	1938	5
Denbighshire	1:10,560	1938 - 1954	6
Denbighshire	1:10,560	1954	7
Ordnance Survey Plan	1:10,000	1963 - 1964	8
Ordnance Survey Plan	1:10,000	1976 - 1979	9
Ordnance Survey Plan	1:10,000	1993	10
10K Raster Mapping	1:10,000	2000	11
10K Raster Mapping	1:10,000	2006	12
VectorMap Local	1:10,000	2020	13

Historical Map - Slice A



Order Details

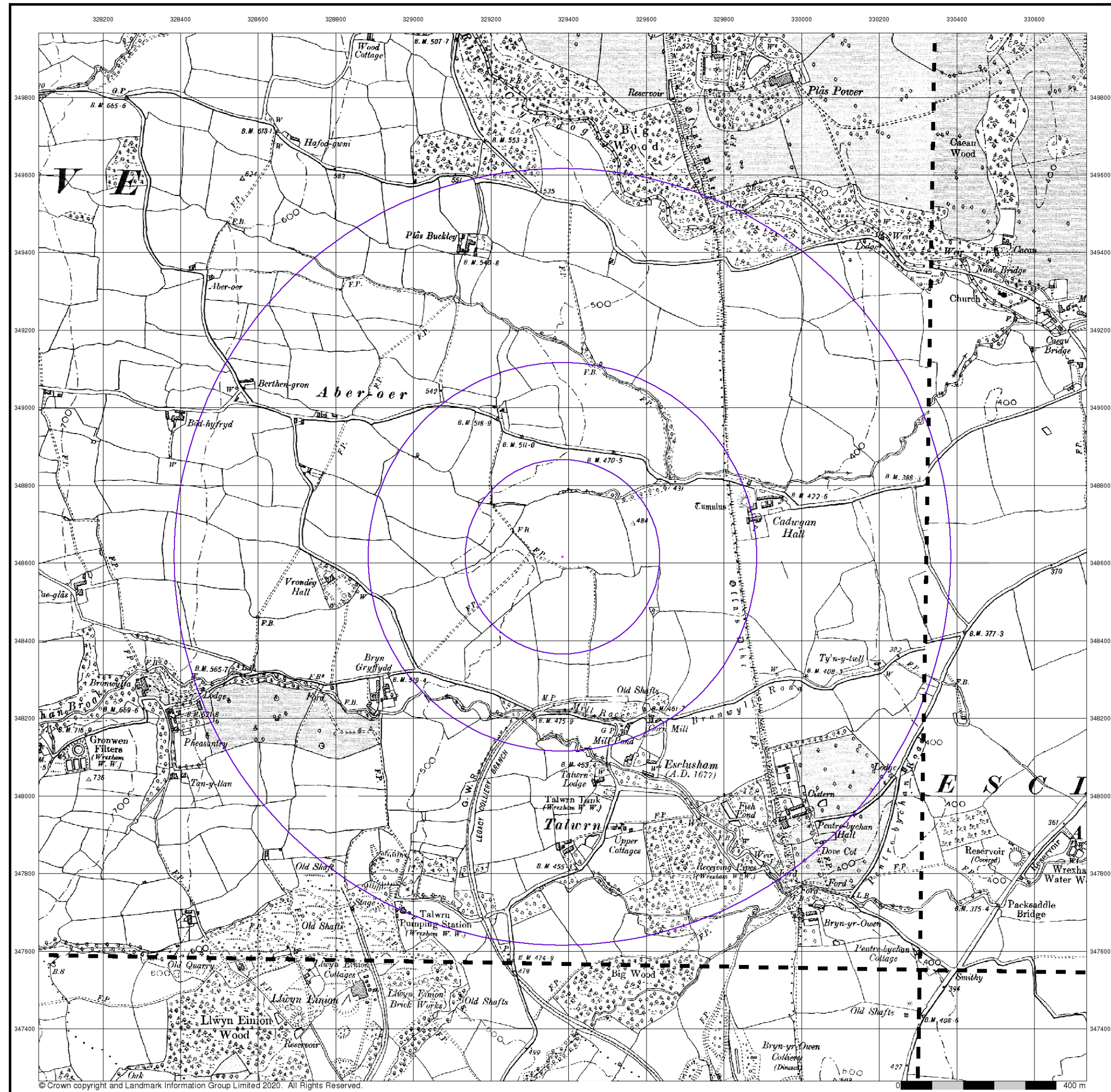
Order Number: 243353372_1_1
Customer Ref: R2746C2
National Grid Reference: 329380, 348620
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Site at 329380, 348620

Landmark
INFORMATION GROUP

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



Denbighshire

Published 1900

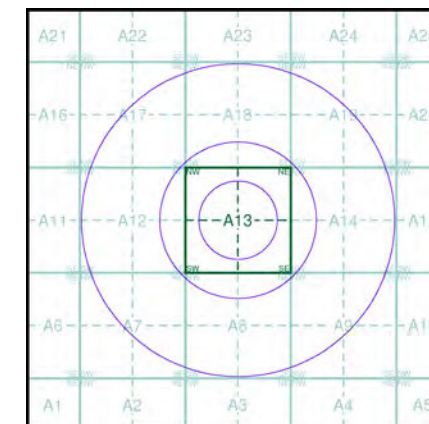
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

028SW 1900 1:10,560	028SE 1900 1:10,560
035NW 1900 1:10,560	035NE 1900 1:10,560

Historical Map - Slice A



Order Details

Order Number: 243353372_1_1
Customer Ref: R2746C2
National Grid Reference: 329380, 348620
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Site at 329380, 348620