Powys

Cyngor Castell-nedd Port Talbot
Neath Port Talbot Council

Llywodraeth Cymru
Welsh Government

A Global Centre of Rail Excellence in Wales

Environmental statement volume II: appendices

September 2020



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Scoping Opinion

Reference No: P2019/5455

NEATH PORT TALBOT COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL CASTELL-NEDD PORT TALBOT

TOWN AND COUNTRY PLANNING ACT 1990
THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (WALES) REGULATIONS 2017

SCOPING OPINION

Name and address of the applicant

Arup - Damian Barry
4 Pierhead Street
Capital
Waterside
Cardiff
CF10 4QP

DATE REGISTERED:	27 September 2019
APPLICATION NO:	P2019/5455
LOCATION:	Land At And Surrounding The Nant Helen Open Cast Coal Site, Powys And Onllwyn Distribution Centre, Neath Port Talbot
PROPOSAL:	Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length); New buildings including Test Platform/Station, Control Building, Research and Development Centre; Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings; Winch-propelled facility for testing of track and track systems; Carriage Wash facility; plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries).

THE NEATH PORT TALBOT COUNTY BOROUGH COUNCIL AS THE LOCAL PLANNING AUTHORITY IN PURSUANCE OF ITS POWER UNDER THE ABOVE MENTIONED ACT AND REGULATIONS HEREBY ADOPTS THE FOLLOWING SCOPING OPINION SUBJECT TO ANY COMMENTS BELOW:

Reference No: P2019/5455

The Environmental Impact Assessment required to be submitted in respect of the above proposal should cover the matters referred to in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, together with addressing all those matters raised in the formal Scoping Report attached to and comprising part of this decision.

Signed: 
Nicola Pearce – Head of Planning & Public Protection
Date: 20 November 2019

NEATH PORT TALBOT COUNCIL AND POWYS COUNTY COUNCIL
JOINT SCOPING REPORT

NPT App. No:	P2019/5455
Powys CC App. No:	19/1619/SC
Location:	Land at and surrounding the Nant Helen Open Cast Coal Site, Powys, and Onllwyn Distribution Centre, Neath Port Talbot.
Description of Development:	Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length); New buildings including Test Platform/Station, Control Building, Research and Development Centre; Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings; Winch-propelled facility for testing of track and track systems; Carriage Wash facility; plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries).

BACKGROUND

The project is considered to be Environmental Impact Assessment (EIA) development as defined by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, ('the EIA Regulations') and accordingly the proposed planning application will require an accompanying Environmental Statement (ES) to be prepared in accordance with the EIA Regulations.

The application site lies within the Dulais Valley and straddles the Neath Port Talbot and Powys administrative border. This Scoping Opinion is therefore prepared jointly by Neath Port Talbot Council (NPT) and Powys County Council (PCC).

Appropriate consultation on the scope of the proposed Environmental Statement to accompany the application has been undertaken independently by both NPT and PCC, with responses referred to (wherever practicable) under that Authority. The Opinion, however, draws upon all consultation responses and the assessment of officers from each respective Authority to provide a single authoritative Opinion on behalf of both LPAs as befits an assessment of such a significant cross-boundary application proposal.

DESCRIPTION OF SITE AND SURROUNDINGS

The application site comprises land at and surrounding the existing Nant Helen Open Cast Coal Site (OCCS), Powys, and Onllwyn Washery Distribution Centre, Neath Port Talbot, as identified on the plan below (Figure 1).

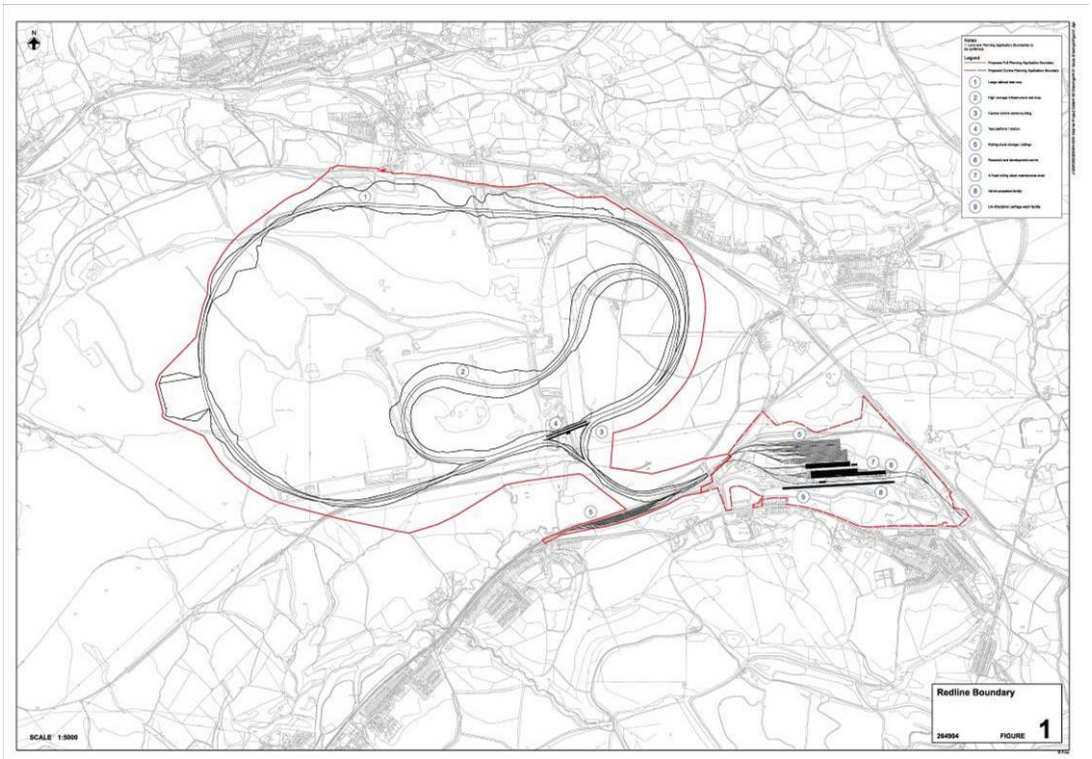

Figure 1: Extent of Proposed Application Site

The site lies within the Dulais Valley straddling the Neath Port Talbot and Powys administrative boundaries, with the Brecon Beacons National Park Authority boundary located to the north.

The proposed site is approximately 483ha in size, which is (proposed to be) split between the full application area (429ha) and the outline application area (54ha) (see details of 'hybrid' nature of proposal below).

The Nant Helen OCCS covers an area of some 345 hectares and is located approximately 200m east of Penrhos; 350m south east of Cae'r-bont; 350m south of Caehopkin; 750m south of Abercrave; 725m west of Coelbren; 900m north-west of Onllwyn and 650m north of Seven Sisters. The site has been extensively worked as an open cast coal mine and consists of restored land, overburden mounds, coal stocking areas, barrel wash and plant maintenance areas, site office facilities and a void which is currently being mined. The site is currently being mined by Celtic Energy, although mining operations will cease in 2021, at which point Celtic Energy will be required to restore the land in accordance with regulatory requirements and agreements with Powys County Council.

The north and west of the working area is covered by woodland, whereas the land to the south and east is open upland common land forming part of Mynydd-Y-Drum. A significant part of the OCCS (184 hectares) also falls

within the Mynydd-y-Drum Common. The SUSTRANS National Cycle Route 43 Celtic Trail East follows the northern and western boundary of the site.

The opencast void has moved in a westerly direction during the operation of the Nant Helen series of sites, which began operations in 1986. The current void is located at the western end of the development within the area of Nant Helen Remainder. The overburden storage mounds are to the east of the void with the coal preparation plant, stocking area, offices and workshops located further to the east.

Access to the existing site is gained from the A4221 at Coelbren, along a 1.2km access road which heads west before turning south towards the office/workshop area. There is also an internal haul road link which runs south from the office/workshop area before turning east towards Onllwyn Washery.

The site itself, apart from the section of internal haul road to Onllwyn Washery, is within Powys but much of the land to the south of the site is within Neath Port Talbot.

The Onlwyn Washery / Distribution Centre site is a preparation and washery facility, receiving and distributing coal associated with Celtic's opencast sites by a mixture of road and rail.

BRIEF DESCRIPTION OF PROPOSAL

The Scoping Request relates to the proposed development of a rail testing and storage facility, to be known as the Global Centre of Rail Excellence (GCRE).

Development would include: -

- Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length);
- New Buildings including Test Platform/Station, Control Building, Research and Development Centre;
- Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings;
- Winch-propelled facility for testing of track and track systems;
- Carriage Wash facility;
- Ancillary development including land reformation, landscaping, infrastructure works and access

It is proposed that a *hybrid* planning application would be submitted, with a full application made for the testing facility and ancillary development with the storage facility (located on the existing washery site) being proposed in outline only at this stage.

The submissions[1] indicate that the development will incorporate the following elements: -

Scheme Component [x] refers to features on Figure 1	Description
[1] Large railroad test loop [2] High tonnage infrastructure test loop	Electrified high speed outer rail testing loop (6.9 km), electrified low speed inner rail testing loop (4.5 km) and control building. The outer loop would extend around the perimeter of the open cast mine and an appropriate scheme of earthworks would be delivered (as part of the restoration strategy being carried out by Celtic Energy) in order to achieve the required gradients for the test track facility. The outer loop would enable the testing of moderate and higher- speed passenger trains up to a maximum 110 mph. The inner loop would enable testing of rail infrastructure and equipment, such as the track, structures (like bridges and tunnels), platforms and signalling, power or communications equipment.
[3] Central control building	A multi-storey control building would be provided from which testing activities are managed. The building would also act as a hub for site personnel. Both loops would link with the existing branch line to the south. It is anticipated rolling stock would be delivered for testing using this link because it provides the most efficient mode of transport. Rolling stock may also be delivered via the strategic road network, depending on need and type.
[6] Research and development centre	The centre would provide opportunities for research and development, conferencing, storage, maintenance and decommissioning of rolling stock and network infrastructure.

[1] Table 3 – Project Components

Scheme Component [x] refers to features on Figure 1	Description
[7] 4-road rolling stock maintenance shed [5] Rolling stock storage/sidings	The centre would have rail links with both testing loops and the existing branch line to the south west. This would facilitate the internal movement of rolling stock for testing and would also link with the wider site and testing loop control centre via internal access roads for use by operational personnel. The centre would provide buildings for up to 400 rolling stock vehicles shared between cold storage (without electricity supply) and warm storage (with electricity supply), buildings with two rail sidings for decommissioning rolling stock and buildings with four rail sidings for maintaining rolling stock as well as stationary testing. There would also be 10 rail sidings branching off the existing rail freight line to help manage incoming rolling stock for testing.
[8] Mechanical low speed linear rail testing track [9] Uni- directional carriage wash facility	The track would be 555 metres long and 15m wide and used for mechanical pulley-driven rolling stock, as opposed to the self- propelled rolling stock that would operate on the rail testing loops at the open cast mine. To be housed within a building or within an acoustically designed boundary enclosure.
Associated development	Across the site this will include land reformation, utilities infrastructure, access roads, car parking, drainage and landscaping.
Site Access	The existing access to the site via the A4109 would be upgraded and a network of internal roads created so that operational personnel could access the centre and the wider site associated with the control building and rail testing loops.

EIA SCOPING OPINION

The application has been submitted as a Scoping Opinion request under Regulation 14 of the Town & Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

The Scoping of an EIA by which the main significant effects are identified is a procedure which sets out the context of the Environmental Impact Assessment (EIA).

The applicants 'Environmental Scoping Report' (September 2019) can be viewed in full on the NPT Planning Register or Powys CC Register and includes details of the following issues which are proposed to be addressed in the Environmental Statement:

- Socio Economic
- Noise and Vibration
- Air Quality
- Traffic and Transport
- Hydrology and Flooding
- Ground Conditions
- Biodiversity
- Cultural Heritage
- Landscape and Visual
- Health and Wellbeing
- Climate Change
- Major Accidents and Disasters ; and
- Cumulative Effects

PLANNING HISTORY

The Nant Helen OCCS has a detailed planning history, primarily (but not wholly) relating to land in the Powys administrative boundary, dating back to 1996, including (but not limited to) the following: -

• N1996/0112 (NPT)	Extract coal by open cast methods incl. Washing of coal bearing material (access only in Neath b.cl. Area). Approved 01.01.1997
• P2001/0405 (NPT)	Vary condition 1 of previous planning application P96/0112 - to extend the period in which the development is begun until 31st July 2003
• P/2011/0217 (PCC)	Western extension to Nant Helen surface mine for the purposes of coal extraction along with completion of coaling at existing site and associated ancillary development including restoration and subsequent aftercare of the full development site - Planning Permission Granted subject to S106 Agreement – 9th March 2012
• PP 106-98-005/PP 106-12-001 (PCC)	Nant Helen Extension – Planning permission Granted at Appeal – 21st July 1998
• 18/1070/REM (PCC)	Section 73 application to vary condition 2 of P/2011/0217 to allow an extension to time to allow extraction of all the coal and completion of restoration. PCC resolved to grant subject to section 106 agreement (outstanding)

PUBLICITY AND RESPONSES

Neath Port Talbot Internal Consultees

Environmental Health (Air Quality) No objection to methodologies proposed for assessment, noting an incorrect reference on Para. 157.

Public Rights of Way Note that the majority of the network (in NPT), whilst located within the site is unaffected by the proposals – unless they want to remove all the network from the site to make the area secure. Provides comments in respect of potential impacts on 3 rights of way, namely: Bridleway 26 and Footpaths MO ANO2 and Fp33.

Environmental Health (Land Contamination) After reviewing section 10 (Ground conditions) of the Environmental Scoping Report, have no objections to make and there is no obvious missing information. The document clearly details measures in relation to identifying and remediating contaminated land on the area proposed for development. Standard contaminated land conditions would be applied depending on what information is provided when submitting the planning application.

Biodiversity Advises that the ecology section of the scoping report provided appears to be largely appropriate; however a few items, set out below, will also need to be addressed as part of the EIA:

- The list of surveys that are being undertaken to inform the scheme appear appropriate. It should however be particularly noted that the surveys should include the identification of the presence of S7 Environment (Wales) Act (S42 NERC Act 2006)/ LBAP habitats and species, sites that meet SINC criteria, in addition to protected species.
- A balance of S7/LBAP/SINC habitat loss/gain to the scheme should be included.
- It is welcomed that it is intended to include an assessment of the impacts upon areas identified as sites of importance for nature conservation (SINC) but it should also be noted that in line with the NPT LDP and Biodiversity & Geodiversity SPG all areas that would meet the criteria of a SINC should also be assessed and considered in the same way. NB details of identified SINCs are available from SEWBReC and the criteria are available from the Wales Biodiversity Partnership website.
- No mention of an assessment of ecosystem resilience (Section 2 Environment (Wales) Act 2016) is included, it is recommended that an assessment is undertaken to ensure the aspects of ecosystem resilience are able to be appropriately considered in line with the Act; this shall particularly consider:

  (a) diversity between and within ecosystems;
  (b) the connections between and within ecosystems;
  (c) the scale of ecosystems;
  (d) the condition of ecosystems (including their structure and functioning);
  (e) the adaptability of ecosystems.

- Also, an assessment of impacts upon bird habitat (Section 9a Conservation of Habitats and Species Regulations 2010 as amended); should be included. It is welcomed that up to date surveys are being undertaken to ensure appropriate data is available to inform this assessment.
- In relation to the significance criteria to be used for the assessment please note the NPT LDP policy requirements and the requirements of the Environment (Wales) Act 2016 in relation to what the LPA needs to consider as part of planning submission. For example all S7 habitats/SINCs/LBAP habitats and species impacted by the scheme will require mitigation as well as protected species and designated sites. These should not be ruled out too early in the assessment process on the basis of criteria applied.

Environmental Health (Noise) Note that, as expected, the proposal in relation to noise and vibration at this stage is vague, but reference is made within the document that prior to undertaking the various assessments that will be required for such a large proposal, the applicant will consult with the LA's. I am pleased to see this, as it will be at this stage the detail can be discussed and methodologies agreed.

Agree with Planning's comment that *"there is no mention of any potential increase in use of the rail link both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any impacts on in terms of noise and vibration."*

Due to the sheer size and nature of the proposal, multiple assessments will be required, and the applicant has recognised this fact. From the content of the document, there is a need at each stage of the assessment for the applicant to be in dialogue with Environmental Health to agree methodologies and standards (this includes background assessments, construction, and operational).

While proposals have been made regarding the background assessment methodology and construction noise targets, further discussions are required prior to agreeing to the suggestions. (At this stage we should not be limiting the number of monitoring locations required to obtain a background noise level, and there is a need to understand the typical background levels in the area prior to agreeing the 'ABC 'methodology in BS5228.) But again these matters can be discussed when greater detail is available.

As part of the mitigation actions, the applicant should consider utilising permanent noise monitoring and vibration monitoring throughout the construction and operational phases.

Due to the boundaries of the OCCS and GCRE not matching, it does make the matter more complex, and therefore there will be a need to ensure the ES considers the differences between the authorised movement of earth within the Nant Helen OCCS site boundary and the additional earthworks activities outside the OCCS.

Head of Engineering & Transport (Highways) advises that in principle there is no highway objection to the proposal subject to a full and detailed Traffic Impact Assessment (TIA) in accordance with TAN 18 be submitted to and approved in writing by the LPA. Suggest that a meeting between all stakeholders take place at the earliest convenience.

Head of Engineering & Transport (Drainage) advises that SuDs Approval Body (SAB) approval will be required prior to any work commencing.

Powys County Council Internal Consultees

Environmental Health Confirm that they are satisfied with the proposed assessments in respect of noise and air quality.

Commons Registration Authority Confirm that the proposed rail testing and storage facility is due to be sited on Common Land known as Mynydd-Y-Drum and is registered under the Commons Registration Act 1965 as register unit CL78 (Brecknockshire).

Commons Registration records show that:

- The Common is subject to grazing rights, which include being registered as exercisable over the application site.
- All registered Common Land is subject to a public right of access on foot for informal recreation granted under the Countryside & Rights of Way Act 2000.

Please be advised that the construction of the testing facility on Mynydd-Y-Drum Common would be UNLAWFUL and the applicants should consider making an application under Section 16 of the Commons Act 2006 to de-register the Common Land status from the site.

Powys County Council is not the determining authority, The Planning Inspectorate in Wales is responsible for determining applications on behalf of the Welsh Minister. Guidance about how to make an application under Section 16 of the Commons Act 2006 is available on the Welsh Government website: https://gov.wales/commons-act-2006-guidance-applying-under-section-16

The Registration Authority also recommends the reading of the Welsh Government 'Common Land Consents Guidance' that was published in August 2014. This document is available within a different area of the Welsh Government website at the following link: https://gov.wales/common-land-consents-guidance

Countryside, Access and Recreation (Rights of Way) The application site is located across the county border of Powys and Neath Port Talbot. This response relates to public rights of way in Powys.

The application site is located on a number of public rights of way in Powys. These are footpath 40, bridleway 45 (which becomes bridleway 66), footpath

19, footpath 50 (which becomes footpath 90), footpaths 11, 17, 52 and 76, footpath 49 and footpath 7. A plan of the paths is attached.

Use of public rights of way across the Nant Helen Opencast Coal site is suspended for the duration of coaling works, via an Order under the Opencast Coal Act 1958. If the proposed development would not be compatible with the public rights of way being used on the alignments that are currently recorded on the Definitive Map, once the suspension is revoked, then the paths will need to be legally diverted.

Planning permission does not, in itself, grant authority for a public right of way to be diverted. A separate legal diversion process must be completed, before development is commenced over the public rights of way.

Even if the paths do not need to be permanently diverted, consideration will need to be given to management of the paths both during and after construction. For further information about applying to divert a public right of way and the options for managing them during and after construction, please contact the Countryside Services and Outdoor Recreation team.

Contaminated Land Section 10 'Ground Conditions' (of Arup 'A Global Centre of Rail Excellence in Wales: Environment Scoping Report' (ref: 264904) 27 September 2019) includes details of how potential risks associated with land contamination will be investigated and assessed. The scope and level of detail of information included in the report would be sufficient for any environmental statement required for the proposed development.

Furthermore, any potential land contamination risks may be managed on submission of an application for planning permission, under The Town and Country Planning Act 1990 (as amended) and The Town and Country Planning (Development Management Procedures) (Wales) Order 2012, and in accordance with the guidance provided in the Welsh Government 'Planning Policy Wales' document.

Built Heritage Conservation Officer - Advises that the methodology for assessing the setting of historic assets is sound, and provides detailed comments (addressed in historic environment section below and as attached in full at Appendix 1).

Ecologist Has reviewed the information submitted and the proposed and is satisfied that the proposed scope of the surveys identified is appropriate and the approach/methodologies identified in Chapter 11 is in accordance with current guidelines and best practice.

The Scoping Report identifies the presence of a European designated site within 5km of the proposed development - Coedydd Nedd a Mellte SAC identified by the Scoping Report as approximately 3km east of the proposed development - sufficient information will need to be provided within the ES to enable the competent authority to determine whether there would be a potential for an impact to the SAC as a result of the construction and/or operation phase of the proposed development, should the assessment identify

the potential for an impact to the SAC and or its associated features then sufficient information will be required to be submitted to enable the competent authority to undertake a Habitats Regulations Assessment of the proposed development. The first stage of this - Screening Stage - is to determine whether there would be a likely significant effect (in the absence of mitigation) if a likely significant effect either alone or in combination with other plans or projects cannot be ruled out then it will be necessary for the proposed development to be subject to an Appropriate Assessment to determine whether there would be an adverse effect to the integrity of the designated site in light of its conservation objectives.
Further information regarding the HRA process in relation to DNS and required information can be found at
https://gov.wales/sites/default/files/publications/2019-08/developments-of-national-significance-guidance-habitats-regulations-assessment.pdf

Section 11.6 of the Environmental Scoping Report identifies potential mitigation that may need to be implemented during the construction phase of the proposed development, I appreciate that these are indicative at this time as not all surveys have been completed and the full extent of potential impacts to biodiversity have not yet been identified. Having reviewed the proposed potential mitigation measures I note that these generally refer to mitigation required during the construction phase of the proposed development the ES will also need to include mitigation measures in relation to the operation phase of the proposed development.

Chapter 17 of the Report considers assessment of Cumulative Effects of the proposed development in relation to other projects known to the planning system or are already consented (but not yet built). I note that with regards to biodiversity the zone of influence for assessments has been identified as the 'footprint of construction works and immediately adjoining land' however with regards to air quality a ZoI of 200m of the development boundary and in relation to water resources a ZoI of 500m has been identified - as both of these are linked to condition of biodiversity features then it is considered that the ZoI in relation to assessment of cumulative effects to biodiversity should also be extended to take these factors into account.

I welcome the statement within the Biodiversity section of the Scoping Report that 'Measures to enhance biodiversity in the area affected by the Project and those which help to deliver local and national policy targets would also be identified; including measures which enhance Section 7 species and habitats, which the local authorities and public bodies are required to seek 'to maintain and enhance biodiversity' in addition to maintaining 'a resilient ecosystem' under the Environment (Wales) Act 2016.' The requirement to identify enhancements for biodiversity through development proposals has been further clarified by the letter form Welsh Government to Wales LPA Heads of Planning dated 23rd October 2019 which states that 'where biodiversity enhancement is not proposed as part of an application, significant weight will be given to its absence, and unless other significant material considerations indicate otherwise it will be necessary to refuse permission.'

Highways No response received to date

External Consultees (NPT and PCC)

Natural Resources Wales has provided detailed advice on land Contamination, Ecology, Protected Sites, Landscape, and Water Quality/ Construction Impacts. Their representations are covered in the subsequent assessment, and can be found in full at Appendix 2).

Brecon Beacons National Park Authority Has provided detailed comments in respect of the need to address the impacts on the National Park, together with detailed comments on LVIA, Renewable energy generation, artificial lighting, archaeology, biodiversity and cumulative impacts.

Comments in respect of the proposed LVIA agrees with NRWs response to the scoping report (05.11.2019) which itself notes that limiting the ZTV to 2km from the project boundary would miss out a number of viewpoints and receptors within the National Park, including from land north/east of Coelbren/Dyffryn Cellwen, on the ridges of Llorfa and Cefn Mawr to the north west and from Cribarth to the north and around Pen-y-cae to the north east. They advise that the ZTV should be widened to 5km to ensure that sensitive areas and receptors within the National Park are included. NRW also state that the ZTV for cumulative effects should also be 5km. BBNPA would concur with this advice.

It is noted that Viewpoints 2, 3, 4, 9, 12, 13, 17 & 18 are in the National Park and in light of NRW advice recommend consideration of additional viewpoints as follows:-

- Trig point on Cribarth (SAM & Registered Common Land) approx. 3.16km
- Public Footpath north east of Henrhyd falls, south of Bryn Bugeiliaid (open access land) 2.5-3km
- Dismantled railway north west of Bryn Bugeiliaid forest, on edge of NNR (Ogof Ffynnon Ddu) & a permissive path (Open Country) approx. 4km
- Bridleway on Cefn Mawr ridge north west of Giedd Forest (Open Access) 4.8-5km. The alternative to this could be the Llorfa ridge, which was used in the open cast assessment, although this is further away.
- Potential viewpoints from paths on/close to the site with views looking towards the National Park e.g. on Mynydd Y Drum or to the south.

NRW state that the LVIA should refer to the National Park's Management Plan, (i.e. the latest version 2015-2010), the Special Qualities of the National Park (particularly peace and tranquillity) and the Landscape Character Assessment (as set out in the Landscape and Development Supplementary Planning Guidance dated 24.10.2014). Impacts on Landscape Character Area 2 - Y Mynydd Du, 3 – Fforest Fawr and 4 -Waterfall Country and Southern Valleys should be assessed. BBNPA would concur with this advice.

NRW have stated that the baseline for the LVIA should be based on the approved restoration plans for the site, and not the existing situation, i.e. the existing working surface coal mine which is a largely pre- restored site. BBNPA would concur with this advice. The site is subject to planning

conditions to secure restoration of the site to beneficial after uses and this also means that the site is not a brown field site, but green field – this should be reflected in the LVIA.

NRW also refer to the need to consider effects of light pollution, particularly night time effects and the Dark Sky Reserve status of the National Park. BBNPA would concur with this advice. Reference should be made to the SPG – Obtrusive Lighting and Light Pollution dated 27.03.2015.

The Scoping Report, at para 15.6 refers to installing renewable energy generation to mitigate the effects of climate change. Such development should be included in the description of development, the nature of the development clarified and if it involves stand- alone features, these should be properly assessed as part of the LVIA.

Their representations are covered in the subsequent assessment, and can be found in full at Appendix 3).

Glamorgan Gwent Archaeological Trust (NPT) - The supporting information includes a scoping report from Arup dated September 2019 which notes that there are archaeological issues which need to be addressed in order to determine the impact of the proposals on the historic environment. An archaeological desk based assessment will be undertaken to inform the cultural heritage chapter. Section 12 refers to cultural heritage, and outlines the methodology for assessing the impact of the proposal on the historic environment. It includes stating that the work will be in line with the current best practice for the Chartered Institute for Archaeologists, as well as national, regional and local policies. These include that a methodology for the assessment will need to be agreed with us as your advisors prior to the production of the assessment. The approach is appropriate, and we look forward to agreeing the methodology. See Appendix 4.

Clwyd-Powys Archaeological Trust (PCC) - We have already responded to the Welsh Government consultation exercise on this scheme and confirmed that a cultural heritage assessment of the development area would be necessary as part of an EIA.

There are a number of recorded archaeological sites within the red boundary and a high potential for impacts to both recorded and unrecorded archaeology outside the main former extraction and soil bund stripping areas of the opencast in particular. Impacts are most likely to occur where the new testing tracks are constructed and where other infrastructure is placed outside areas of disturbance caused by prior extraction, soil stripping and quarry buildings.

There is one scheduled monument within the red boundary area and the applicants will have to consult Cadw via cadwplanning@gov.wales regarding setting issues and other potential impacts.

We have advised Welsh Government that initially a detailed desktop study will be required along with a walkover survey to collate information on known and unrecorded sites, assess the potential impacts and suggest appropriate mitigation. Further pre-determination assessment may then be required in the

form of geophysics, measured surveys and investigative trenching. This work should be carried out in accordance with the appropriate CIFA standards and guidance and a specification (written scheme of investigation) should be forwarded to us by the nominated archaeological contractor for approval in advance of the commencement of the assessment. All finished reports and any resulting digital archives must be submitted to the Historic Environment Record and National Monuments Record (RCAHMW) on completion of the assessments. See Appendix 5.

National Grid (PCC & NPT) - has provided details of their apparatus in the area, including Overhead Line Profiles and issued a holding objection pending further review by Engineers. They have also requested 3D drawings to be provided at the earliest opportunity (DWG, DGN or DXF), and noted that the statutory minimum safety clearance is 7.6 metres to ground and 8.1 metres to a normal road surface. See Appendix 6.

CADW (PCC & NPT) – Having carefully considered the information provided with this request, consider that further information is required.

An environmental scoping report has been prepared by Arup outlining the proposed contents of the environmental impact assessment and the methodologies that will be used to assess any likely damage to the environment. Chapter 12 of that document deals with Cultural Heritage and in general we concur with its' contents: However, in regard to grade II listed buildings we would recommend that given that these are Nationally designated heritage assets, a search area of 3km would be more appropriate than 1km and that impact of the proposed development on the setting of all designated heritage assets inside 3km (listed above) should be carried out in accordance with the Welsh Government guidance given in the document "The Setting of Historic Assets in Wales". We would expect a stage 1 assessment to be carried out for all of the above designated heritage assets, which will determine the need, if necessary, for stages 2 to 4 to be carried out for specific heritage assets.

Finally, it is noted that paragraph 343 of the scoping document that there is a reference to Planning Policy Wales Chapter 6: The Historic Environment (Edition 9, 2016). This document has been replaced by Planning Policy Wales Chapter 6: The Historic Environment (Edition 10, 2018). See Appendix 7.

Coal Authority (PCC & NPT) - Our records indicate that there are approximately 87 mine entries, within or within 20m of the site boundary. The site is also in an area of recorded and likely unrecorded coal mine workings at shallow depth and is in an area where coal has been removed by surface mining methods.

The submission is supported by an Environmental Scoping Report, dated September 2019 and prepared by ARUP. We are pleased to see that this report identifies the significant coal mining legacy present on the site, and acknowledges that the site is still subject to active surface mining activity until at least 2020.

Section 10 of the Environmental Scoping Report covers ground conditions and identifies that a detailed mining risk assessment will need to be completed to qualify the risks arising from historical mining activities present within the area of the proposed structures and infrastructure and associated construction activities. The report authors note that this should look at historic records, mining abandonment plans, historic borehole records etc. They note that comprehensive ground investigations may be required to locate workings and there may be requirements for remedial works to mining works and shafts on the site.

Where mine entries are present on a site we would expect the location of these to be established by intrusive site investigations in order that the exact location of these features can inform the layout of the development. We would expect the layout plan to demonstrate that the adequate separation is provided between these features, their zones of influence and any structures proposed. The Coal Authority is of the opinion that building over the top of, or in close proximity to, mine entries should be avoided wherever possible, even after they have been capped, in line with our adopted policy: https://www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries

See full representations at Appendix 8.

Dwr Cymru Welsh Water (PCC & NPT) - Advise there are a number of sewerage and water assets crossing the site boundary, these will have their own easements whereby no operational development can take place. Recommend the applicants continue to engage with DCWW and work collaboratively on drainage matters. Also recommend they engage with the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features and that Dwr Cymru Welsh Water is a statutory consultee to the SAB application process and will provide comments to any SuDS proposals by response to SAB consultation.

Wales & West Utilities (PCC & NPT) – Advise that Wales & West Utilities plans should now be obtained from LSBUD - https://www.linesearchbeforeudig.co.uk/

Designing Out Crime Officer (NPT) - It is important that I am involved in this initiative at the design stage, and ask that I be consulted at a later date when more detailed drawings of the scheme become available, in order for Designing out Crime and Secured by Design principles to be considered and hopefully incorporated into this exciting development.

National Planning Policy Context

The Applicants attention is drawn to the following relevant national and local planning policies together with supplementary guidance.

Planning Policy Wales (Edition 10)

PPW is supported by a series of more detailed Technical Advice Notes (TANs), of which the following are of relevance: -

- TAN 5 Nature Conservation and Planning (2009)
- TAN 11 Noise (1997)
- TAN 12 Design (2016)
- TAN 13 Tourism (1997)
- TAN 15 Development and Flood Risk (2004)
- TAN 18 Transport (2007)
- TAN 20 Planning and the Welsh Language (2017)
- TAN 23 Economic Development (2014)
- TAN 24 The Historic Environment (2017)

Local Planning Policy Context

The application site covers two administrative boundaries, with this Scoping Report prepared jointly on behalf of both Local Planning Authorities. Accordingly, the local Policy context below addresses Powys and NPT Policies in turn.

Powys Local Development Plan (April 2018)

The Development Plan for the Powys CC area comprises the Powys Local Development Plan which was adopted in April 2018, and within which the following policies are of relevance:

Strategic Policies:

- Strategic Policy SP2 Employment Growth
- Strategic Policy SP5 Settlement Hierarchy
- Strategic Policy SP6 Distribution of Growth across the Settlement Hierarchy
- Strategic Policy SP7 Safeguarding of Strategic Resources and Assets

Detailed Policies:

- Policy DM1 Planning Obligations
- Policy DM2 The Natural Environment
- Policy DM4 Landscape
- Policy DM5 Development and Flood Risk
- Policy DM6 Flood Prevention Measures and Land Drainage
- Policy DM7 Dark Skies and External Lighting
- Policy DM8 Minerals Safeguarding
- Policy DM9 Existing Mineral Workings
- Policy DM10 Contaminated and Unstable Land

- Policy DM13 Design and Resources
- Policy DM14 Air Quality Management
- Policy DM15 Waste Within Developments
- Policy E2 Employment Proposals on Non-allocated Employment Sites
- Policy T1 Travel, Traffic and Transport Infrastructure
- Policy T2 Safeguarding of Disused Transport Infrastructure
- Policy M5 Restoration and Aftercare

Neath Port Talbot Local Development Plan

The Development Plan for the NPT area comprises the Neath Port Talbot Local Development Plan which was adopted in January 2016, and within which the following policies are of relevance:

Strategic Policies:

- **Policy SP1** Climate Change
- **Policy SP2** Health
- **Policy SP3** Sustainable communities
- **Policy SP4** Infrastructure
- **Policy SP6** Development in the Valleys Strategy Area
- **Policy SP11** Employment Growth
- **Policy SP14** The Countryside and the Undeveloped Coast
- **Policy SP15** Biodiversity and Geodiversity
- **Policy SP16** Environmental Protection
- **Policy SP17** Minerals
- **Policy SP19** Waste Management
- **Policy SP20** Transport Network
- **Policy SP21** Built Environment and Historic Heritage
- **Policy SP22** Welsh Language

Detailed Policies:

- **Policy SC1** Settlement limits
- **Policy I1** Infrastructure Requirements
- **Policy EC5** Employment Uses in the Valleys
- **Policy TO4** Walking and Cycling Routes
- **Policy EN2** Special Landscape Areas
- **Policy EN6** Important Biodiversity and Geodiversity Sites
- **Policy EN7** Important Natural Features
- **Policy EN8** Pollution and Land Stability
- **Policy M1** Development in Mineral Safeguarding Areas
- **Policy M3** Development in Mineral Buffer Zones
- **Policy RE2** Renewable and Low Carbon Energy in New Development
- **Policy W3** Waste Management in New Development
- **Policy TR1** Transport Proposals
- **Policy TR2** Design and Access of New Development
- **Policy TR3** Safeguarding of Disused Railway Infrastructure
- **Policy TR4** Safeguarding Freight Facilities

- **Policy BE1** Design
- **Policy BE2** Buildings of Local Importance
- **Policy WL1** Development in Language Sensitive Areas

Supplementary Planning Guidance:

The following SPG is of relevance to this application: -

Powys CC

- Biodiversity and Geodiversity (October 2018)
- Landscape (April 2019)
- Planning Obligations (October 2018)

Neath Port Talbot

- Planning Obligations (October 2016)
- Parking Standards (October 2016)
- Pollution (October 2016)
- Open Space & Greenspace (July 2017)
- Renewable and Low Carbon Energy (July 2017)
- Design (July 2017)
- Development and the Welsh Language (July 2017)
- Landscape & Seascape (May 2018)
- Biodiversity and Geodiversity (May 2018)
- The Historic Environment (April 2019) (incl. Schedule of Buildings of Local Importance and SPG: Schedule of Designated Canal Structures)

SCOPING APPRAISAL

Having regard to the submitted 'Environmental Scoping Report' (September 2019), and following receipt of the above consultation responses, it is considered that in general the proposed content and methodology of the EIA would be acceptable, subject to the following comments and requests for additional information being incorporated into the final ES: -

Approach to the EIA

The Scoping Report sets out that the EIA will identify the likely significant environmental impacts (both positive and negative) of the Project and report these within in the ES which will provide the following relevant information, as required by the EIA Regulations:

- A description of the development, including the physical characteristics of the whole development and the land use requirements during the construction and operational phases;
- An outline of the main alternatives studied by the applicant with an indication of the main reasons for the choice, taking into account the environmental effects;

- A description of the aspects of the environment likely to be significantly affected by the proposed development;
- A description of measures designed to prevent, reduce and where possible offset any significant adverse effects on the environment along with a description of measures designed to enhance beneficial effects;
- A non-technical summary; and
- A description of any difficulties encountered by the applicant.

Future Baseline (section 2.3)

The submissions indicate that the restoration of the Nant Helen OCCS would take place once the mine ceases operation in 2020, and that the restoration will not be completed before the commencement of the assessments. Accordingly, obtaining data on baseline conditions of a restored site will not be possible. This is acknowledged, albeit noting that there is progressive restoration of the site as mining continues.

It therefore states that the EIA will consider the existing (i.e. pre-restoration) conditions, although where relevant future baseline (post restoration) will be considered based on information about the restoration plans known at the time of assessment. Each topic chapter will define this clearly within the assessment methodology sections, providing clear justification for which baseline is considered.

Having regard to the existing (working) site conditions for the OCCS, and the fact that submissions are intended to be made to amend the final restoration strategy for the Nant Helen site prior to the submission of the application, this approach is agreed and is considered to be the most appropriate way forward. Nevertheless, the LPAs reserve the right, should it be deemed essential, to request further environmental information in the event future baseline conditions change to such an extent that potential significant impacts cannot otherwise be assessed.

Significance of Effect and in-combination effects

The approach to Significance of Effect (including criteria in Table 4), cumulative and in-combination effects, and mitigation are agreed as being appropriate.

TOPIC AREAS

The Scoping Report advises that for each topic, the likelihood of significant effects arising will be considered in terms of:

- Direct and indirect effects during construction;
- Direct and indirect effects during operation;
- Direct and indirect effects during decommissioning; and

- Cumulative effects arising from the Project with other development that has extant planning permission or is under construction.
- In-combination effects arising from the Project.

This approach is agreed.

The following assessment now addresses each proposed topic area in term, noting the 'summary of scope' identified in table 5 of the Scoping Report and reviewing the extent to which any additional matters should be addressed within the ES accompanying the proposed planning application.

Assessment Topic	**Summary of scope**
Socio-Economics	To include assessment of construction and operational effects on local residents, local businesses, community facilities, land use, local and regional economy, and tourism and recreational facilities.

The approach and methodology in Section 5 of the Scoping report is largely agreed, albeit it is noted that it will be important to predict the potential wider socio-economic benefits having regard to whether the project would be delivered as one comprehensive project, or in its constituent parts.

In addition: -

There is reference (para 79) to the potential longer-term impacts on the local Public Rights of Way (PRoW) network. It is noted, however, that there is no mention of any potential increase in use of the rail link (as referred to throughout this scoping report) both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any socio-economic impacts. This could most likely include impacts on communities associated with any intensification in use of the rail link in terms of connectivity, should rights of way or crossing points be adversely affected.

It is also noted that paragraph 70 refers to the baseline of 'a level site on which the project will be developed', although the choice of terminology for the restored site should perhaps be reconsidered to reflect the approved methodology at the time of writing.

As NRW has also noted, while paragraph 79 states that potential socio-economic effects of the operation include "the provision of improved landscape within the area", it should be noted that the potential landscape effects have not yet been assessed, and would need to form part of the overall ES.

Assessment topic	Summary of scope
Noise and Vibration	To include noise and vibration associated with construction and construction traffic. Assessment related to the operation of the Project will include: • Assessment of operational noise and vibration associated with train movements both during the day and night. • Assessment of additional road traffic noise generated on the local highway network and within the site.

As expected, the proposal in relation to noise and vibration at this stage is vague, but reference is made within the Scoping Report that prior to undertaking the various assessments that will be required for such a large proposal the applicant will consult with the Local Authorities. This is considered essential, since it will be at this stage the detail can be discussed and methodologies agreed.

The proposed development will clearly have impacts in relation to noise and vibration. In addition these would relate to both construction phases and operational phases of the development. As stated, no specific details are submitted, and the applicant would need to address these matters as part of the ES including mitigation measures where necessary. Monitoring of these matters will also be necessary, as the nature of the development, including the operation and testing of new technology and experimental design may lead to impacts not yet considered or forecasted when the development is initially assessed.

It is note, however, that there is no mention of any potential increase in use of the rail link (as referred to throughout this scoping report) both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any impacts on in terms of noise and vibration.

Due to the sheer size and nature of the proposal, multiple assessments will be required, and the applicant has recognised this fact. From the content of the scoping report, it is assumed that at each stage of the assessments the applicant's consultants will be in dialogue with Environmental Health to agree methodologies and standards (this includes background assessments, construction, and operational).

While proposals have been made regarding the background assessment methodology and construction noise targets, it is considered that further discussions are required prior to agreeing to the suggestions. For example, at this stage we should not be limiting the number of monitoring locations required to obtain a background noise level, and there is a need to understand

the typical background levels in the area prior to agreeing the 'ABC 'methodology in BS5228. Again these matters can be discussed when greater detail is available.

As part of the mitigation actions, the applicant should consider utilising permanent noise monitoring and vibration monitoring throughout the construction and operational phases.

Due to the boundaries of the OCCS and GCRE not matching, it does make the matter more complex, therefore *there is a need to ensure the ES considers the differences between the authorised movement of earth within the Nant Helen OCCS site boundary and the additional earthworks activities outside the OCCS.*

Assessment topic	**Summary of scope**
Air Quality	Assessment of local air quality to include: - Review of existing air quality conditions; - Qualitative assessment of dust emissions during construction; - Assessment of air quality effects from construction and operational traffic; - Assessment of air quality effects from on-site rail testing of diesel trains during operation.

The NPT Air Quality Officer has reviewed Chapter 7 of the Environmental Scoping Report and has confirmed that he is content with the scope set out within the submissions. This submission should cover all potential impacts both during construction, and operation, taking into account long term need for monitoring.

It is noted, however, that there is no mention of any potential increase in use of the rail link (as referred to throughout this scoping report) both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any impacts on air quality.

Assessment Topic	**Summary of scope**
Traffic and Transport	The assessment will be based on a 'worst case' scenario whereby all materials would be brought to the site via road (it is more likely that the majority of materials would be brought to site by rail). To include an assessment of effects on highways and walking and cycling routes that surround the Project site. Potential effects on public transport will also be considered.

The Head of Engineering & Transport (NPT) raises no issues or objections with the submissions, subject to a full and detailed Traffic Impact Assessment (TIA) in accordance with TAN 18 be submitted to and approved in writing by the LPA.

Whilst there are a number of sections within the scoping document that refer to the rail link as a positive for the site location, and reducing road impacts, it is noted that there is no mention of any potential increase in use of the rail link (as referred to throughout this scoping report) both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any impacts on wider walking and cycle routes serving communities along the rail route.

It is considered that the baseline (and subsequent) assessment needs to have regard to the intensity and nature of existing use, including hours of activity. The assessment will then need to address the proposed or estimated increase in its use, including any offsetting that may be possible once the washery closes – which may be deemed significant - together with consideration of the potential impacts associated with any such change in its use.

Having regard to the above, it is especially noted that there are a number of level crossings along this line such as one (which has been drawn to our attention) between the settlements of Cilfrew and Aberdulais that is used very regularly and by school children. This appears to be a very important pedestrian link between the two residential communities, and a route to school and as such if the levels of traffic along this line were to increase, the submissions would need to address whether there is any need for potential mitigation. Other crossing points may also need to be assessed to see levels of use, but also the reasons for these trips.

The use and impacts of this rail link are also referred to throughout this report, including how this might impact on Noise, Nuisance, air quality, health and wellbeing, community connectivity etc. as presently the document appears silent on these issues, only stressing the positives of the rail link on reducing road traffic.

The sustainability in terms of transport options and conclusions would need to be considered, both during construction and operation, including the need for travel plans for staff and visitors to the site to reduce reliance on the need for private transport, as a priority, to reduce the carbon footprint across the whole lifetime of the proposal.

Impact on Rights of Way

The majority of the affected public right of way network is located within the administrative boundary of Powys. These are footpath 40, bridleway 45 (which becomes bridleway 66), footpath 19, footpath 50 (which becomes footpath 90), footpaths 11, 17, 52 and 76, footpath 49 and footpath 7. Within the NPT administrative boundary are Footpaths 4.Coelbren, 15.D.Hi, 32.D.Hi, 33.D.Hi, 34.D.Hi, MO.ANO2 and Bridleway 26.D.Hi.

Use of public rights of way across the Nant Helen Opencast Coal site is suspended for the duration of coaling works, via an Order under the Opencast Coal Act 1958. If the proposed development would not be compatible with the public rights of way being used on the alignments that are currently recorded on the Definitive Map, once the suspension is revoked, then the paths will need to be legally diverted.

Planning permission does not, in itself, grant authority for a public right of way to be diverted. A separate legal diversion process must be completed, before development is commenced over the public rights of way.

Even if the paths do not need to be permanently diverted, consideration will need to be given to management of the paths both during and after construction. For further information about applying to divert a public right of way and the options for managing them during and after construction, please contact the Powys Countryside Services and Outdoor Recreation team.

The ES will need to consider all short- and long-term impacts on the public rights of way and its users, including details of the current situation, post-restoration plans, and any details (and assessment of impacts) in respect of nay proposal to divert or remove the network from the site (for example to make it secure). This again feeds into the sustainability of the site as a whole, and the socio-economic impacts of the development, and the accessibility of this site, and linkages into the wider cycle/ footpath networks, and the visual impacts on the wider landscape.

Assessment Topic	**Summary of scope**
Hydrogeology and Flooding	To consider effects of the Project during construction and operation on: • Surface water features (to include details of water quality and quantity). • Groundwater features. • Flood risk. • Drainage infrastructure.

Natural Resources Wales addresses matters of Water Quality/ Construction Impacts, and notes that given the location of the site close to the Rivers Pyrddin and Dulais on Neath and the presence of ordinary watercourses within the vicinity, consideration should be given to the inclusion of appropriate pollution control measures to be adopted on site from site preparation through to operation. They advise that this is considered as part of a site-specific Construction Environmental Management Plan for the development and should address the following:

- Construction methods including details of materials, waste, contaminated land.
- General Site Management: construction programme, site clearance requirements, construction drainage, site set-up plan detailing sensitive receptors and buffers zones, relevant protection measures e.g. fencing.

- Biodiversity Management: tree and hedgerow protection, invasive species management.
- Control of Nuisances: restrictions on timing/duration/frequency of works, dust control measures, control of light spill and conservation of dark skies.
- Resource Management: fuel and chemical storage, waste management, water consumption, energy consumption.
- Traffic Management: deliveries, plant on site, wheel washing facilities.
- Pollution Prevention: demonstrate compliance with relevant Guidelines for Pollution Prevention, incident response plan, site drainage plan.
- Ecological clerk of works to ensure construction compliance with approved plans and environmental regulations.
- Details of the persons/bodies responsible for activities associated with the CEMP and emergency contact details.

Assessment topic	Summary of scope
Ground Conditions	To consider effects of Project related to geology, hydrogeology and contamination during both construction and operation.

The **PCC Contaminated Land Officer** has advised that Section 10 'Ground Conditions', of the Scoping Report includes details of how potential risks associated with land contamination will be investigated and assessed. The scope and level of detail of information included in the report would be sufficient for any environmental statement required for the proposed development.

Furthermore, any potential land contamination risks may be managed on submission of an application for planning permission, under The Town and Country Planning Act 1990 (as amended) and The Town and Country Planning (Development Management Procedure) (Wales) Order 2012, and in accordance with the guidance provided in the Welsh Government 'Planning Policy Wales' document.

The **NPT Land Contamination team** also raise no issues with the scoping report, noting that such matters can be addressed at application stage.

Natural Resources Wales welcomes the proposed investigation as outlined in Section 10.4.2 of the scoping report and advise that a Preliminary Risk Assessment (PRA) is undertaken to establish the location of historical contamination. They also recommend that CLR11, the Environment Agency “Guiding Principles for Land Contamination” (which has been adopted by NRW) and British Standards are used to undertake these assessments. All reference to legislation should be up to date.

They further welcome and support the commitment within Section 9.4 of the scoping report that a survey will be undertaken to understand the baseline Water Features.

In addition, if any piling it to be undertaken on site the ES should include a piling risk assessment.

Assessment topic	Summary of scope
Biodiversity	The presence of statutory and non-statutory sites which could be indirectly affected during construction and operation. The presence of notable habitats within the site i.e. Habitats of Principal Importance in Wales and ancient woodland, which could be directly and indirectly affected during construction and operation. The presence of protected and or notable species, which could be directly and indirectly affected during construction and operation including from harm, mortality, disturbance and habitat fragmentation

The responses from the NPT and Powys ecologists note that the ecology section of the scoping report appears to be largely appropriate.

However the following matters will also need to be addressed as part of the EIA:

- The list of surveys that are being undertaken to inform the scheme appear appropriate. It should however be particularly noted that the surveys should include the identification of the presence of S7 Environment (Wales) Act (S42 NERC Act 2006)/ LBAP habitats and species, sites that meet SINC criteria, in addition to protected species.
- A balance of S7/LBAP/SINC habitat loss/gain to the scheme should be included.
- It is welcomed that it is intended to include an assessment of the impacts upon areas identified as sites of importance for nature conservation (SINC) but it should also be noted that in line with the NPT LDP and Biodiversity & Geodiversity SPG all areas that would meet the criteria of a SINC should also be assessed and considered in the same way. NB details of identified SINCs are available from SEWBReC and the criteria are available from the Wales Biodiversity Partnership website.
- No mention of an assessment of ecosystem resilience (Section 2 Environment (Wales) Act 2016) is included, it is recommended that an assessment is undertaken to ensure the aspects of ecosystem resilience are able to be appropriately considered in line with the Act; this shall particularly consider:

  (a) diversity between and within ecosystems;
  (b) the connections between and within ecosystems;
  (c) the scale of ecosystems;
  (d) the condition of ecosystems (including their structure and functioning);

(e) the adaptability of ecosystems.

- Also, an assessment of impacts upon bird habitat (Section 9a Conservation of Habitats and Species Regulations 2010 as amended); should be included. It is welcomed that up to date surveys are being undertaken to ensure appropriate data is available to inform this assessment.
- In relation to the significance criteria to be used for the assessment please note the NPT LDP policy requirements and the requirements of the Environment (Wales) Act 2016 in relation to what the LPA needs to consider as part of planning submission. For example all S7 habitats/SINCs/LBAP habitats and species impacted by the scheme will require mitigation as well as protected species and designated sites. These should not be ruled out too early in the assessment process on the basis of criteria applied.

In addition the following should be addressed: -

- Section 11.6 of the Environmental Scoping Report identifies potential mitigation that may need to be implemented during the construction phase of the proposed development. The ES however should also consider the need to include mitigation measures in relation to the operation phase of the proposed development.

- Chapter 17 of the Report considers assessment of Cumulative Effects of the proposed development in relation to other projects known to the planning system or are already consented (but not yet built). The zone of influence for assessments has been identified as the 'footprint of construction works and immediately adjoining land' however for Air Quality a ZoI of 200m of the development boundary and in relation to water resources a ZoI of 500m has been identified. As both of these are linked to condition of biodiversity features then it is considered that the ZoI in relation to assessment of cumulative effects to biodiversity should also be extended to take these factors into account.

Natural Resources Wales has also stated that in general the ES for this development should include sufficient information to enable the local planning authorities to determine the extent of any environmental impacts arising from the proposed scheme on legally protected species, including those which may also comprise notified features of designated sites affected by the proposals.

Evaluation of the impacts of the scheme should include: direct and indirect; secondary; cumulative; short, medium and long term; permanent and temporary; positive and negative, and construction, operation and decommissioning phase and long-term site security impacts on the nature conservation resource, landscape and public access.

NRW has provided detailed comments as follows:-

- Illustrations within the ES

  Any maps, drawings and illustrations that are produced to describe the project should be designed in such a way that they can be overlaid with drawings and illustrations produced for other sections of the ES such as biodiversity.

- Description of Biodiversity

  The ES must include a description of all the existing natural resources and wildlife interests within and in the vicinity of the proposed development, together with a detailed assessment of the likely impacts and significance of those impacts. We note that a restoration plan exists for the sites current use as an open cast mine. We would advise that information is provided to the local authority considering how the restoration works will work alongside the new proposal.

- Key Habitats

  We note that previous surveys have been undertaken, including a Phase 1 survey, and that a scoping survey was completed by Arup in November 2018. Any habitat surveys should accord with the Nature Conservation Committee (NCC), Phase 1 survey guidelines (NCC (1990) Handbook for Phase 1 habitat survey. NCC, Peterborough). We advise that Phase 1 surveys are undertaken and completed during the summer to ensure the best chance of identifying the habitats present.

- Protected Species

  We note from the scoping report that protected species surveys have been carried out on site between 2010 and 2016. We also note that additional targeted protected species are currently being carried out by Arup and will be completed by November 2019. We welcome the results of these within the ES as discussed at the meeting between Arup and NRW in December 2018.

  We advise that all targeted species surveys comply with current best practice guidelines and in the event that the surveys deviate or there are good reasons for deviation that full justification for this is included within the ES. Should protected species be found during the surveys, information must be provided identifying the species-specific impacts in the short, medium and long term together with any mitigation and compensation measures proposed to offset the impacts identified. We advise that the ES set out how the long-term site security of any mitigation or compensation will be assured, including management and monitoring information and long term financial and management responsibility.

  Where a European Protected Species is identified and the development proposal will contravene the legal protection they are afforded, a licence should be sought from NRW. The ES must include consideration of the requirements for a licence and set out how the

works will satisfy the three requirements as set out in the Conservation of Habitats and Species Regulations 2017. One of these requires that the development authorised will 'not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range'. These requirements are also translated into planning policy through Planning Policy Wales (PPW) December 2018, section 6.4.22 and 6.4.23 and Technical Advice Note (TAN) Nature Conservation and Planning (September 2009). The local planning authority will take them into account when considering the EIA where a European Protected Species is present.

- Protected Sites

  Thirteen statutory designated sites are within 5km of the proposed development. One Special Area of Conservation (SAC), Coedydd Nedd a Mellte and the others are all sites of Special Scientific Interest (SSSIs). One site is designated as a National Nature Reserve (NNR).

  We note in Paragraph 293 and 295 that additional surveys will be undertaken to ensure sufficient information is obtained on all likely ecological receptors and that the majority of additional surveys planned will be a repeat of existing surveys carried out in 2010 and 2012.

  We support the identification of measures taken to enhance biodiversity in the area affected by the project and those which help deliver local and national policy targets, as mentioned in Paragraph 301. We note under Paragraph 304, that there will be a focus on activities that could potentially generate Significant ecological effects: this is determined by considering 'Important Ecological Features – specifically habitats, species and ecosystem function.

  It is noted in Paragraph 314 that further consultation is proposed with the local planning authority and NRW, which we welcome and support.

  It is understood that the mitigation will follow a mitigation hierarchy during design and construction sequentially either to avoid, mitigate, compensate or enhance in line with best practice. We note that the design will need to avoid notable habitats, or habitats known to support protected/notable species, where possible. It is also noted that opportunities, where possible should be sought to enhance existing habitat features and create new habitats which are appropriate for the local area.

  It should be acknowledged that parts of the restored habitat within the proposed development fall within an area covered by the Ystradgynlais Marsh fritillary metapopulation (a species listed under Section 7 of under the Environment Act 2016). It should be noted that a large part of the proposed development is on land is registered as part of Mynydd y Drum Common and that encouraging and facilitating appropriate cattle grazing regime within this area of the common could serve in part as positive habitat management for grassland and heath as well as enhance habitat for Marsh fritillary metapopulation.

We observe that an area of high tonnage test loop appears to be proposed near bog/ fen/mire habitat and upon an area of deep peat according to our information. We would advise that the appropriate surveys be carried out with regards to deep peat and negative impact on the deep peat avoided where possible.

Finally, there is a requirement to assess any potential impacts under the Conservation of Habitats and Species Regulations 2017. Regulation 63 of the Regulations requires the Local Authority, as the competent authority to undertake a test of the likely significant effects of the proposal on Coedydd Nedd a Mellte SAC.

If it cannot be demonstrated that there will not be a significant effect, either alone or in combination with other plans and projects, the Local Authority are required to undertake an appropriate assessment of the implications of the proposed scheme for the SAC in view of its conservation objectives, before granting planning permission.

The ES should have regard to all of the above matters raised in the NRW representations at Appendix 2.

Finally, if the proposal is to meet Planning Policy Wales Edition 10 (2018), net biodiversity benefits must be part and parcel of the project description and design. These benefits must be demonstrated over and above those provided by the existing agreed restoration for the opencast site.

Whilst it is noted that footnote 17 which explains 'Notable Species' include s7 species, the scoping report also appears inconsistent on their consideration indicating that they have and haven't been previously recorded at the site (Para. 289). This should be addressed.

Assessment Topic	**Summary of scope**
Cultural Heritage	To consider potential effects during construction and operation on above and below ground archaeological remains, built heritage, historic landscapes and any other features that contribute to the archaeological and historic interest of the area.

The supporting information includes a scoping report from Arup dated September 2019 which notes that there are archaeological issues which need to be addressed in order to determine the impact of the proposals on the historic environment. An archaeological desk based assessment will be undertaken to inform the cultural heritage chapter.

Section 12 refers to cultural heritage, and outlines the methodology for assessing the impact of the proposal on the historic environment. It includes stating that the work will be in line with the current best practice for the Chartered Institute for Archaeologists, as well as national, regional and local

policies. These include that a methodology for the assessment will need to be agreed with our architectural advisors prior to the production of the assessment.

Glamorgan Gwent Archaeological Trust advises that the proposed approach is appropriate, and look forward to agreeing the methodology.

Clwyd Powys Archaeological Trust advises that they have already responded to the Welsh Government consultation exercise on this scheme and confirmed that a cultural heritage assessment of the development area would be necessary as part of an EIA.

They note that there are a number of recorded archaeological sites within the red boundary and a high potential for impacts to both recorded and unrecorded archaeology outside the main former extraction and soil bund stripping areas of the opencast in particular. Impacts are most likely to occur where the new testing tracks are constructed and where other infrastructure is placed outside areas of disturbance caused by prior extraction, soil stripping and quarry buildings. There is one scheduled monument within the red boundary area and the applicants will have to consult Cadw via cadwplanning@gov.wales regarding setting issues and other potential impacts.

Initially a detailed desktop study will be required along with a walkover survey to collate information on known and unrecorded sites, assess the potential impacts and suggest appropriate mitigation. Further pre-determination assessment may then be required in the form of geophysics, measured surveys and investigative trenching. This work should be carried out in accordance with the appropriate CIFA standards and guidance and a specification (written scheme of investigation) should be forwarded to us by the nominated archaeological contractor for approval in advance of the commencement of the assessment. All finished reports and any resulting digital archives must be submitted to the Historic Environment Record and National Monuments Record (RCAHMW) on completion of the assessments.

Powys County Council's Built Heritage Conservation Officer notes that a 5KM outer study area buffered from the site boundary will be used in the assessment of Grade I and II* listed buildings and Registered Historic Park and Gardens and Scheduled Ancient Monuments, and a smaller buffer of 1Km for Grade II listed buildings and Grade II Registered Historic Parks and Gardens.

Given the location of the listed buildings in the landscape compared with the location of the Scheduled Ancient Monuments, it is considered that this approach is acceptable in respect of the setting of listed buildings.

There is, however, one scheduled monument that either does not appear to be in the Environmental Scoping Report, or is not readily evident, namely *BR201 Lefel Fawr Coal Audit*, which is immediately to the south of Listed Buildings 7468 Pont-y-Yard and 17922 Yard House.

Reference is also made to the setting of Scheduled Ancient Monuments noting that there is one Scheduled Ancient Monument within the site boundary GM399. It is suggested that early dialogue is entered into with Cadw in respect of any potential physical works to this Scheduled Ancient Monument, in order that should a Scheduled Ancient Monument Consent application be necessary, this can be undertaken concurrently with the planning application to avoid potential delays in the delivery of the scheme.

Whilst not a built heritage asset in itself, the proximity of Henrhyd Lech Falls (National Trust) and the Trail along Graig Lech has also been referred to, and as such it is recommended that specific consideration should be given to the assessment of the impact of the proposal on this tourism feature either within the cultural heritage assessment or the landscape assessment.

It is advised that the Archaeological Trusts be contacted in respect of the Historic Environment Records on the site.

Cadw guidance on Managing Change "the setting of historic assets" addresses the steps to be considered in assessing the setting of historic assets and should be followed: - https://cadw.gov.wales/advice-support/placemaking/heritage-impact-assessment/setting-historic-assets.

Mindful of recent case law[2] in terms of smell affecting the setting of a listed building, it is also recommended that reference is made to reports commissioned in terms of noise/dust for Environmental Health in the setting of historic assets in order that it can be seen in terms of setting of listed buildings it has been addressed.

It is also noted that it is not only the visual impact that can be considered in respect of listed buildings, but noise dust etc. can also be considered as affecting the setting in some circumstances. As such it may be worthwhile in the report on the setting of historic assets to briefly reference or direct the reader to any relevant pollutant impact studies or reports that are being undertaken which will be assessed by the relevant body in that regard.

All considerations should use and refer to the relevant and current legislation, policy and guidelines and use a suitable assessment methodology, based on these documents. The assessment should be independent and objective and seek to fully define and understand the heritage assets, their setting and the short, medium and long term effects of the proposed development based on desk based and field research and using appropriate illustrations / photos where necessary. It should also seek to assess the effect and success of any mitigation measures.

The cultural heritage assessment should also include an assessment upon the settings of a number of scheduled monuments within the Brecon Beacons National Park boundary.

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[2] https://www.bailii.org/ew/cases/EWCA/Civ/2016/1061.html

Assessment topic	Summary of scope
LVIA	To consider construction and operational effects on landscape character and visual receptors including residential receptors around the Project site and recreational receptors using Public Rights of Way. Views from within the Brecon Beacons National Park and SSSI will be assessed. A ZTV will be prepared for use within the assessment and viewpoints agreed with PCC and NPTCBC. Land modelling including excavation, transport and placement of material will be assessed for the construction phase.

The proposed approach and methodology has been reviewed, and detailed comments received from Natural Resources Wales, together with comments on Viewpoints from Brecon Beacons National Park Authority.

NRW in particular has commented on the fact that the site is located approximately 96m away from the Brecon Beacons National Park, noting that while the scoping report states that the site's existing topography is such that mining activities are screened from view from the nearby settlements of Onllwyn, Seven Sisters, Ystradgynlais, Caehopkin, Abercrave and Coelbren, there is, however, visibility of vehicles, lights, coal face and bare slopes of the overburden mound from Penrhos. The mine is also highly visible from elevated viewpoints within the National Park.

It is also noted that while paragraph 70 states that the restoration will create a level site on which the project will be developed as specified in the restoration plans, the proposed restoration plan to vary Condition 54 (Powys CC 18/1071/DIS) has been withdrawn, and both the approved restoration plan and proposed revision do not show restoration to a level site and parts of the proposed rail tracks lie outside the area of the restoration plans.

The general principles and methodology of the proposed Landscape Visual Impact Assessment (LVIA) appear to be sound, however NRW offer the following detailed advice:

- Paragraph 361 - The Zone Theoretical Visibility (ZTV) is proposed to be limited to 2km from the project boundary. This would miss out a number of viewpoints and receptors within the National Park, including from land north/east of Coelbren/Dyffryn Cellwen, on the ridges of Llorfa and Cefn Mawr to the north west and from Cribarth to the northand around Pen-y-cae to the north east. **We advise that the ZTV should be widened to 5km to ensure that sensitive areas and receptors within the National Park are included.**

- Paragraph 363 – Potential effects on the landscape character and visual amenity of the Nant Llech area should be included in the landscape assessment.
- Paragraph 371 – the assessment of impacts on the National Park should include reference to the National Park's Management Plan, Special Qualities and Landscape Character Assessment. Protecting long/expansive views which form the backdrop to the area; reducing the visual impacts of existing open cast sites and other development beyond the park boundary and resisting applications for future development which would harm the special qualities of the area; retaining the area's dark skies and reducing the incidence of light pollution are factors that form part of the strategy for Landscape Character Area 4 (LCA) Waterfall Country and Southern Valleys and LCA2 Y Mynydd Du, within the park's Landscape Character Assessment. These are the LCAs most likely to be affected by the development, along with, potentially, Fforest Fawr.
- Paragraph 375 – we note the reference to LANDMAP, the all-Wales landscape resources and advise that all 5 aspect area layers should be considered in the assessment. Information on LANDMAP updates can be found on NRW's website.
- Paragraph 379 - we note that day and night-time effects are to be assessed, on the assumption of a 24/7 operation in the worst-case scenario.
- Paragraph 380 states that the landscape assessment will be based on the current baseline (pre-restoration conditions). **NRW are concerned about this approach**, given that the site is currently predominantly a working open cast mine. The conditions for the open cast permission require restoration of the site, therefore the baseline for the proposed development would be a restored site. It is stated that the future baseline will be considered in the LVIA based on information about the restoration plan at the time of writing. Clarity is needed on how this approach will be taken.
- Paragraph 382 states that the study area for night-time effects would be developed in consultation with the National Park. The night-time effects on the National Park and its Dark Sky Reserve status are clearly important and we support consultation with the Park authority. However, we advise that the effects of light pollution on other surrounding areas outside the Park should also be considered in this assessment.
- Paragraph 388 – We welcome consultation on landscape character and visual amenity impacts in relation to the National Park and its setting. Impacts on Tranquillity should also be considered as part of the assessment.
- Section 13.6 – potential mitigation could also include proposals to minimise/avoid night-time lighting and effects on Tranquillity, both in relation to the National Park, and more widely. The use of earthworks and planting needs to be appropriate to the landscape character of the locality and should avoid creating visual intrusion in its own right.

- Section 15.6 – refers to the installation of renewable energy generation to mitigate the effects of climate change. It should be noted that some renewable energy developments can have significant landscape and visual impacts in their own right. If included this would require landscape and visual assessment. We advise that consideration of natural mitigation of climate change such as soil treatment, woodland planting and creation of wetlands should be included.
- Section 17.2.3 – we advise that the ZTV for cumulative effects should be at least 5km. Table 36 does not appear to include effects of existing developments and should be amended to include these. Clarity on the type of comparable developments to be considered under cumulative effects is needed.

Outside of this formal request for a Scoping Opinion, proposed Viewpoints have been received and comments have been provided on behalf of NPT/PC and by BBNPA, having particular regard to the advice received above from NRW.

It is noted that some additional Viewpoints are necessary, and that the Scoping Report states that visual effects will be assessed based on winter views when there is least leaf cover and therefore minimum screening, and has noted that "Summer photography has been captured as part of an initial site survey however, due to project programme, it will not be possible to include summer photography for any further viewpoints that result from project design changes or consultation". This fact is acknowledged and we are content to proceed on that basis provided the winter views provide sufficient clarity to allow a detailed subsequent assessment of identified impacts.

In addition to the quoted NPT and PCC Policies, attention is drawn to the Council's approved Supplementary Planning Guidance

- PCC - Landscape (April 2019)
- NPT - Landscape & Seascape (May 2018)

The approach to potential mitigation measures is agreed, notably the need for these to be integrated into the design and assessment process as soon as practically possible.

Practical points for LVIA: -

- the use of a practical typeface/font that can be read in a reduced pdf at full page resolution on a computer screen (70%) will make the report much more accessible/readable.
- Parameters plans should be provided to assess the impacts of the development.
- A 3D model/OS Terrain 5 landform or similar based visualisations are recommended to indicate the location of elements on the site and indicative height/massing of key elements including from key viewpoints.
- LI guidance on visualisations should also be referenced and used to guide the assessment: LI 01/11 and 02/17. (5.296)

It is acknowledged that discussions in respect of the LVIA are currently ongoing and will inform the content of the ES.

Control of artificial lighting

It is also considered that lighting should be included as a stand-alone topic within the EIA, as it has the potential to be a significant issue, in respect of lighting during construction and operation. The management and mitigation of artificial light emissions should be produced for the proposed development.

PPW-section 6.8 refers to lighting, and specifically to dark sky reserves of the Brecon Beacons, and their characteristics should be taken into account when considering individual development proposals. The BBNPA advises that their Local Development Plan policy 12 Light Pollution and the BBNPA Supplementary Planning Guidance – Obtrusive Lighting and Light Pollution dated 27.03.2015 are considered relevant and should be taken into account in the assessment of lighting within the proposed development.

Assessment topic	**Summary of scope**
Health and wellbeing	Consideration of construction and operational effects on the health and wellbeing outcomes of communities within the wards of Aber-Craf, Tawe-Uchaf, Onllwyn and Seven Sisters.

Population and human health is identified in the EIA Regulations as one of the key matters to be addressed within an ES. Health issues were identified as a key issue for the NPT LDP and as an overarching objective and strategic Policy (SP2) due to the high levels of poor health in NPT.

In this context it is considered appropriate to give this emphasis in the ES addressing the impacts of the development on health issues in broad terms. No adverse comments are made in respect of the approach and methodology to be adopted, although particular emphasis is placed on the need for the health and wellbeing section of the ES to cross reference matters raised throughout the ES with regard to potential impacts on health and wellbeing, and any potential positive impacts associated with mitigation. It is clear that each section of the ES should cross-reference health and wellbeing, as there will be potentially positive and negative impacts that will cut across topic areas.

In this respect it is again noted that there is no mention of any potential increase in use of the rail link (as referred to throughout this scoping report) both during construction and operation. This therefore needs to be addressed within the ES, first through an assessment of the use of (and potential increase in use of) the rail link itself, followed by a consequential assessment of any impacts on communities the route passes through, since this has the potential to have increased impact on health and wellbeing in the event of significant increase or change in characteristics of the use of the rail link.

Assessment topic	Summary of scope
Climate change	To consider the impacts of greenhouse gas emissions from the Project and also the vulnerability of the Project to climate change. This will consider the resilience of the Project in the context of projected future changes in climate variables.

The approach and methodology in Section 15 of the Scoping report is agreed. Cross-reference should be made to wider sustainability of the development, including opportunities relating to energy reduction, including the use of renewables.

Assessment topic	Summary of scope
Major accidents and disasters	Whilst the likelihood of occurrence is considered to be low, the Project has the potential to give rise to major accident or disaster effects upon environmental receptors, and therefore the topic has been scoped in for further assessment to confirm that the vulnerabilities to major accidents and/or disasters is fully, robustly and clearly covered by existing legal requirements, codes and standards or by another chapter of the EIA.

The approach and methodology in Section 16 of the Scoping report is agreed.

Assessment topic	Summary of scope
Cumulative effects	Assessment of cumulative effects arising from the Project in combination with confirmed and other reasonably foreseeable projects in the local area will be considered within a separate ES chapter. In-combination effects (i.e. effects arising from the Project itself that combine together to affect the same receptor) will be considered within each topic chapter.

The approach and methodology in Section 15 of the Scoping report is agreed.

The views of the BBNPA howveer should be addressed, namely the need to consider the relationship with projects in the draft National Development Framework, the Wales Infrastructure Investment Plan project pipeline and those emerging from the Brecon Beacons National Park Management Plan (e.g. Waterfall Country and the Gunpowder Works), including through the Habitats Regulations Assessment.

Furthermore, in the context of the Habitats Regulations Assessment, the resulting Environmental Impact Assessment must build on the Habitats Regulations Assessment and recognise that "in combination" effects may mean that likely significant effects on a Natura 2000 site cannot be ruled out even though the project, by itself, would not have a significant effect.

Assessment topic	Summary of scope
Decommissioning	Decommissioning effects are scoped out of the EIA due to the likely extended period of time likely to pass between construction and operation.

The report acknowledges that there will be likely environmental effects from any decommissioning of the Project at the end of its life. However, at this stage it is anticipated that the Project would have an expected operational life of 50 years which would render attempts to predict environmental effects invalid.

It is anticipated that effects during decommissioning would be similar to those of the construction phase, however it is proposed that they would be assessed in detail at the time of any decommissioning activities.

The approach and methodology in Section 17 of the Scoping report is therefore agreed, noting that in the event that permission is granted and the development implemented, any submissions required to address decommissioning conditions would need to address the environmental impacts at that time.

Other Matters

The Brecon Beacons National Park Throughout the ES, all sections should have appropriate regard to the statutory purposes, and special qualities of the national park, namely its peace and tranquillity, outstanding natural beauty. See BBNPA comments in full at Appendix 3.

Mid & West Fire and Rescue Service have advised that the developer should consider the need to provide adequate water supplies for firefighting purposes and their full response is appended to this report for information

The **Designing Out Crime Officer's** response provides general design advice and his full response is appended to this report for information.

National Grid has provided details of their apparatus in the area, including Overhead Line Profiles and issued a holding objection pending further review by Engineers. They have also requested 3D drawings to be provided at the earliest opportunity (DWG, DGN or DXF), and noted that the statutory minimum safety clearance is 7.6 metres to ground and 8.1 metres to a normal road surface. In response, NPT/PCC has advised National Grid that the comments are detailed matters requiring assessment and liaison between the developer and NG.

RECOMMENDATION

The assessment and consideration of the information set out in this report (including appendices) be provided to the developer as the formal Scoping Opinion issued on behalf of both Powys County Council and Neath Port Talbot Council.

Gwilym Davies
Pennaeth Eiddo Cynllulnio a Gwarchod y Cyhoedd
Head of Property, Planning and Public Protection

By email
gwilym.davies@powys.gov.uk

Gwilym Davies
Pennaeth Eiddo Cynllulnio a Gwarchod y Cyhoedd /
Head of Property, Planning and Public Protection

County Hall
Spa Road East
Llandrindod Wells
Powys
LD1 5LG

Our ref: 19/1619/SC
Date:11 October 2019
If calling please ask for:
Debra Lewis
Direct line: 01938 551301

Dear Gwilym,

The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulation 13 Scoping Opinion

Proposed Planning Application for Scoping Opinion.

19/1619/SC Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration, one 4.5km, inside a larger loop of 6.9km in length), New buildings including Test Platform/Station, Control Building, Research and Development Centre, Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings, Winch-propelled facility for testing of track and track systems, Carriage Wash facility, plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries).Site Address: Land At And Surrounding The Nant Helen Opencast Coal Site, Powys And, Onllwyn Distribution Centre, Neath Port Talbot, SA10 9NN

Section 12 of the Environmental Scoping Report relates to of cultural heritage and it is noted that given the size of the proposal a 5KM outer study area buffered from the site boundary will be used in the assessment of grade I and II* listed buildings and Registered Historic Park and Gardens and Scheduled Ancient Monuments, and a smaller buffer of 1Km for grade II listed buildings and grade II Registered Historic Parks and Gardens.

In respect of the Scheduled Ancient Monuments it is considered that this approach meets the requirements of SCHEDULE 4 of The Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016 requires that consultation with the Welsh Ministers in relation to development likely to be visible from scheduled monument and which meets one of the following criteria;
d) it is within a distance of 3 kilometres from the perimeter of a scheduled monument and is 75metres or more in height, or has an area of 1 hectare or more; or
e) it is within a distance of 5 kilometres from the perimeter of a scheduled monument and is 100 metres or more in height, or has an area of 1 hectare or more.

Given the location of the listed buildings in the landscape compared with the location of the Scheduled Ancient Monuments, it is considered that this approach is acceptable in respect of the setting of listed buildings.

I note however that there is one scheduled monument that either not appear to be in the Environmental Scoping Report, or is not readily evident. That is BR201 Lefel Fawr Coal Audit, which is immediately to the south of Listed Buildings 7468 Pont-y-Yard and 17922 Yard House and I am mentioning this for completeness in the assessment.

Cadw would be the consultee on the setting of Scheduled Ancient Monuments and for applications for Scheduled Ancient Monuments. I note that there is one Scheduled Ancient Monument within the site boundary GM399. It is suggested that early dialogue is entered into with Cadw in respect of any potential physical works to this Scheduled Ancient Monument, in order that should a Scheduled Ancient Monument Consent application be necessary, this can be undertaken concurrently with the planning application to avoid potential delays in the delivery of the scheme.

I am attaching hyperlinks which I trust are useful in this regard.

file:///C:/Users/debral1/AppData/Local/Microsoft/Windows/INetCache/IE/T1XXYA0D/Understanding%20Scheduling%20in%20Wales%20Cadw%20Eng%20WEB%20(1).pdf

https://cadw.gov.wales/advice-support/historic-assets/scheduled-monuments/scheduled-monument-consent#section-what-is-scheduled-monument-consent

Whilst not a built heritage asset in itself, the proximity of Henrhyd Lech Falls (National Trust) and the Trail along Graig Lech, and as such it is suggested that it may be worthwhile that specific consideration also be given to the assessment of the impact of the proposal on this tourism feature either within the cultural heritage assessment or the landscape assessment.

Historic Environment Records

The site appears to contain entries contained in the Historic Environment Records;

As such it is advised that Clwyd Powys Archaeological Trust be contacted in respect of the Historic Environment Records on the site.

Cadw have prepared guidance on Managing Change " the setting of historic assets " which addresses the steps to be considered in assessing the setting of historic assets.

https://cadw.gov.wales/advice-support/placemaking/heritage-impact-assessment/setting-historic-assets

Mindful of recent case law on the matter please note that it is not only the visual impact that can be considered in respect of listed buildings, but noise dust etc can also be considered as affecting the setting in some circumstances. As such it may be worthwhile in the report on the setting of historic assets to briefly reference or direct the reader to any relevant pollutant impact studies or reports that are being undertaken which will be assessed by the relevant body in that regard.

All considerations should use and refer to the relevant and current legislation, policy and guidelines and use a suitable assessment methodology, based on these documents. The assessment should be independent and objective and seek to fully define and understand the heritage assets, their setting and the short, medium and long term effects of the proposed development based on desk based and field research and using appropriate illustrations / photos where necessary. It should also seek to assess the effect and success of any mitigation measures.

Yours faithfully

Debra Lewis
Built Heritage Conservation Officer

Cyfoeth Naturiol Cymru
Natural Resources Wales

Ein cyf/Our ref: CAS-102200-N5R8
Eich cyf/Your ref: 19/1619/SC

Maes Newydd
Llandarcy
Neath Port Talbot
SA10 6JQ

Ebost/Email:
swplanning@cyfoethnaturiolcymru.gov.uk
Ffôn/Phone: 0300 065 3264

Mr Steve Ball
Neath Port Talbot County Borough Council
The Quays
Baglan Energy Park
Briton Ferry
SA11 2GG

Dyddiad/Date: 5 November 2019

Annwyl / Dear Mr Ball

BWRIAD / PROPOSAL: **REQUEST FOR SCOPING OPINION UNDER REGULATION 14 OF THE TOWN AND COUNTRY PLANNING (Environmental Impact ASSESSMENT) (WALES) REGULATION 2017 IN RESPECT OF A PROPOSED APPLICATION FOR A RAIL TESTING AND STORAGE FACILITY, KNOWN AS THE GLOBAL CENTRE OF RAIL EXCELLENCE (GCRE), AND INCORPORATING:- A ROLLING STOCK AND INFRASTRUCTURE TESTING FACILITY (CONSISTING OF TWO TEST TRACKS OF LOOP CONFIGURATION; ONE 4.5KM, INSIDE A LARGER LOOP OF 6.9KM IN LENGTH); NEW BUILDING TOS INCLUDING TEST PLATFORM/STATION, CONTROL BUILDING, RESEARCH AND DEVELOPMENT CENTRE; ROLLING STOCK MAINTENANCE SHED, DECOMISSIONING FACILITY AND RAIL SIDING; WINCH-PROPOELLED ROLLING STOCK MAINTENANCE SHED, DECOMMISSIONING FACILITY AND RAIL SIDINGS; WINCH-PROPELLED FACILITY FOR TESTING OF TRACK AND TRACK SYSTEMS; CARRIAGE WASH FACILITY; PLUS ANCILLARY DEVELOPMENTINCLUDING LAND REFORMATION, LANDSCAPING, INFRASTRUCTURE WORKS AND ACCESS (AFFECTING LAND WITHIN NEATH PORT TALBOT AND POWYS COUNTY COUNCIL ADMINISTARTIVE BOUNDARIES**

LLEOLIAD / LOCATION: **LAND AT AND SURROUNDING THE NANT HELEN OPEN CAST COAL SITE POWYS AND ONLLWYN DISTRIBUTION CENTRE, NEATH PORT TALBOT**

Thank you for consulting Cyfoeth Naturiol Cymru/Natural Resources Wales (NRW) on the above Scoping Opinion, which we received on 3 October 2019.

We welcome the submission of the Scoping Report produced by Arup, referenced ‘A Global Centre of Rail Excellence in Wales, Environmental Scoping Report’ dated September 2019. In general, we are satisfied with the proposed scope, subject to the following comments.

Cyfoeth Naturiol Cymru
Natural Resources Wales

1. Land Contamination

Given the previous land use of the site we welcome the proposed investigation as outlined in Section 10.4.2 of the scoping report and advise that a Preliminary Risk Assessment (PRA) is undertaken to establish the location of historical contamination.

We recommend that CLR11, the Environment Agency "Guiding Principles for Land Contamination" (which has been adopted by NRW) and British Standards are used to undertake these assessments. All reference to legislation should be up to date.

We welcome and support the commitment within Section 9.4 of the scoping report that a survey will be undertaken to understand the baseline Water Features.

In addition, if any piling it to be undertaken on site the ES should include a piling risk assessment.

2. Ecology

In general, the ES for this development should include sufficient information to enable the local planning authorities to determine the extent of any environmental impacts arising from the proposed scheme on legally protected species, including those which may also comprise notified features of designated sites affected by the proposals.

Evaluation of the impacts of the scheme should include: direct and indirect; secondary; cumulative; short, medium and long term; permanent and temporary; positive and negative, and construction, operation and decommissioning phase and long-term site security impacts on the nature conservation resource, landscape and public access.

Illustrations within the ES

Any maps, drawings and illustrations that are produced to describe the project should be designed in such a way that they can be overlaid with drawings and illustrations produced for other sections of the ES such as biodiversity.

Description of Biodiversity

The ES must include a description of all the existing natural resources and wildlife interests within and in the vicinity of the proposed development, together with a detailed assessment of the likely impacts and significance of those impacts. We note that a restoration plan exists for the sites current use as an open cast mine. We would advise that information is provided to the local authority considering how the restoration works will work alongside the new proposal.

Cyfoeth Naturiol Cymru
Natural Resources Wales

Key Habitats

We note that previous surveys have been undertaken, including a Phase 1 survey, and that a scoping survey was completed by Arup in November 2018. Any habitat surveys should accord with the Nature Conservation Committee (NCC), Phase 1 survey guidelines (NCC (1990) Handbook for Phase 1 habitat survey. NCC, Peterborough). We advise that Phase 1 surveys are undertaken and completed during the summer to ensure the best chance of identifying the habitats present.

Protected Species

We note from the scoping report that protected species surveys have been carried out on site between 2010 and 2016. We also note that additional targeted protected species are currently being carried out by Arup and will be completed by November 2019. We welcome the results of these within the ES as discussed at the meeting between Arup and NRW in December 2018.

We advise that all targeted species surveys comply with current best practice guidelines and in the event that the surveys deviate or there are good reasons for deviation that full justification for this is included within the ES. Should protected species be found during the surveys, information must be provided identifying the species-specific impacts in the short, medium and long term together with any mitigation and compensation measures proposed to offset the impacts identified. We advise that the ES set out how the long-term site security of any mitigation or compensation will be assured, including management and monitoring information and long term financial and management responsibility.

Where a European Protected Species is identified and the development proposal will contravene the legal protection they are afforded, a licence should be sought from NRW. The ES must include consideration of the requirements for a licence and set out how the works will satisfy the three requirements as set out in the Conservation of Habitats and Species Regulations 2017. One of these requires that the development authorised will 'not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range'. These requirements are also translated into planning policy through Planning Policy Wales (PPW) December 2018, section 6.4.22 and 6.4.23 and Technical Advice Note (TAN) Nature Conservation and Planning (September 2009). The local planning authority will take them into account when considering the EIA where a European Protected Species is present.

Local Biodiversity Interests

We recommend that the developer consults the local authority Ecologists on the scope of the work to ensure that regional and local biodiversity issues are adequately considered, particularly those habitats and species listed in the relevant Local

Biodiversity Action Plan and that are considered important for the conservation of biological diversity in Wales.

We would expect the developer to contact other relevant people/organisations for biological information/records relevant to the site and its surrounds. These include the relevant Local Records Centre and any local ecological interest groups (E.g. bat groups, mammal groups).

3. Protected Sites

Thirteen statutory designated sites are within 5km of the proposed development. One Special Area of Conservation (SAC), Coedydd Nedd a Mellte and the others are all sites of Special Scientific Interest (SSSIs). One site is designated as a National Nature Reserve (NNR).

We note in Paragraph 293 and 295 that additional surveys will be undertaken to ensure sufficient information is obtained on all likely ecological receptors and that the majority of additional surveys planned will be a repeat of existing surveys carried out in 2010 and 2012.

We support the identification of measures taken to enhance biodiversity in the area affected by the project and those which help deliver local and national policy targets, as mentioned in Paragraph 301. We note under Paragraph 304, that there will be a focus on activities that could potentially generate Significant ecological effects: this is determined by considering 'Important Ecological Features – specifically habitats, species and ecosystem function.

It is noted in Paragraph 314 that further consultation is proposed with the local planning authority and NRW, which we welcome and support.

It is understood that the mitigation will follow a mitigation hierarchy during design and construction sequentially either to avoid, mitigate, compensate or enhance in line with best practice. We note that the design will need to avoid notable habitats, or habitats known to support protected/notable species, where possible. It is also noted that opportunities, where possible should be sought to enhance existing habitat features and create new habitats which are appropriate for the local area.

It should be acknowledged that parts of the restored habitat within the proposed development fall within an area covered by the Ystradgynlais Marsh fritillary metapopulation (a species listed under Section 7 of under the Environment Act 2016). It should be noted that a large part of the proposed development is on land is registered as part of Mynydd y Drum Common and that encouraging and facilitating appropriate cattle grazing regime within this area of the common could serve in part as positive habitat management for grassland and heath as well as enhance habitat for Marsh fritillary metapopulation.

We observe that an area of high tonnage test loop appears to be proposed near bog/ fen/mire habitat and upon an area of deep peat according to our information. We would advise that the appropriate surveys be carried out with regards to deep peat and negative impact on the deep peat avoided where possible.

Finally, there is a requirement to assess any potential impacts under the Conservation of Habitats and Species Regulations 2017. Regulation 63 of the Regulations requires the Local Authority, as the competent authority to undertake a test of the likely significant effects of the proposal on Coedydd Nedd a Mellte SAC.

If it cannot be demonstrated that there will not be a significant effect, either alone or in combination with other plans and projects, the Local Authority are required to undertake an appropriate assessment of the implications of the proposed scheme for the SAC in view of its conservation objectives, before granting planning permission.

4. Landscape

The site is located approximately 96m away from the Brecon Beacons National Park.

We note from the scoping report that the site's existing topography is such that mining activities are screened from view from the nearby settlements of Onllwyn, Seven Sisters, Ystradgynlais, Caehopkin, Abercrave and Coelbren. There is, however, visibility of vehicles, lights, coal face and bare slopes of the overburden mound from Penrhos. The mine is also highly visible from elevated viewpoints within the National Park.

Paragraph 70 states that the restoration will create a level site on which the project will be developed as specified in the restoration plans. It should be noted that the proposed restoration plan to vary Condition 54 (Powys CC 18/1071/DIS) has been withdrawn. Both the approved restoration plan and proposed revision do not show restoration to a level site and parts of the proposed rail tracks lie outside the area of the restoration plans.

Paragraph 79 states that potential socio-economic effects of the operation include the provision of improved landscape within the area. It should be noted that the potential landscape effects have not yet been assessed.

The general principles and methodology of the proposed Landscape Visual Impact Assessment (LVIA) appear to be sound, however we offer the following detailed advice:

Paragraph 361 - The Zone Theoretical Visibility (ZTV) is proposed to be limited to 2km from the project boundary. This would miss out a number of viewpoints and receptors within the National Park, including from land north/east of Coelbren/Dyffryn Cellwen, on the ridges of Llorfa and Cefn Mawr to the north west and from Cribarth to the north

and around Pen-y-cae to the north east. We advise that the ZTV should be widened to 5km to ensure that sensitive areas and receptors within the National Park are included.

Paragraph 363 – Potential effects on the landscape character and visual amenity of the Nant Llech area should be included in the landscape assessment.

Paragraph 371 – the assessment of impacts on the National Park should include reference to the National Park's Management Plan, Special Qualities and Landscape Character Assessment. Protecting long/expansive views which form the backdrop to the area; reducing the visual impacts of existing open cast sites and other development beyond the park boundary and resisting applications for future development which would harm the special qualities of the area; retaining the area's dark skies and reducing the incidence of light pollution are factors that form part of the strategy for Landscape Character Area 4 (LCA) Waterfall Country and Southern Valleys and LCA2 Y Mynydd Du, within the park's Landscape Character Assessment. These are the LCAs most likely to be affected by the development, along with, potentially, Fforest Fawr.

Paragraph 375 – we note the reference to LANDMAP, the all-Wales landscape resources and advise that all 5 aspect area layers should be considered in the assessment. Information on LANDMAP updates can be found on NRW's website.

Paragraph 379 - we note that day and night-time effects are to be assessed, on the assumption of a 24/7 operation in the worst-case scenario.

Paragraph 380 states that the landscape assessment will be based on the current baseline (pre-restoration conditions). We are concerned about this approach, given that the site is currently predominantly a working open cast mine. The conditions for the open cast permission require restoration of the site, therefore the baseline for the proposed development would be a restored site. It is stated that the future baseline will be considered in the LVIA based on information about the restoration plan at the time of writing. Clarity is needed on how this approach will be taken.

Paragraph 382 states that the study area for night-time effects would be developed in consultation with the National Park. The night-time effects on the National Park and its Dark Sky Reserve status are clearly important and we support consultation with the Park authority. However, we advise that the effects of light pollution on other surrounding areas outside the Park should also be considered in this assessment.

Paragraph 388 – We welcome consultation on landscape character and visual amenity impacts in relation to the National Park and its setting. Impacts on Tranquillity should also be considered as part of the assessment.

Section 13.6 – potential mitigation could also include proposals to minimise/avoid night-time lighting and effects on Tranquillity, both in relation to the National Park, and more widely. The use of earthworks and planting needs to be appropriate to the landscape character of the locality and should avoid creating visual intrusion in its own right.

Section 15.6 – refers to the installation of renewable energy generation to mitigate the effects of climate change. It should be noted that some renewable energy developments can have significant landscape and visual impacts in their own right. If included this would require landscape and visual assessment. We advise that consideration of natural mitigation of climate change such as soil treatment, woodland planting and creation of wetlands should be included.

Section 17.2.3 – we advise that the ZTV for cumulative effects should be at least 5km. Table 36 does not appear to include effects of existing developments and should be amended to include these. Clarity on the type of comparable developments to be considered under cumulative effects is needed.

5. Water Quality/Construction Impacts

Given the location of the site close to the Rivers Pyrddin and Dulais on Neath and the presence of ordinary watercourses within the vicinity, consideration should be given to the inclusion of appropriate pollution control measures to be adopted on site from site preparation through to operation. We advise that this is considered as part of a site-specific Construction Environmental Management Plan for the development and should address:

- Construction methods including details of materials, waste, contaminated land.
- General Site Management: construction programme, site clearance requirements, construction drainage, site set-up plan detailing sensitive receptors and buffers zones, relevant protection measures e.g. fencing.
- Biodiversity Management: tree and hedgerow protection, invasive species management.
- Control of Nuisances: restrictions on timing/duration/frequency of works, dust control measures, control of light spill and conservation of dark skies.
- Resource Management: fuel and chemical storage, waste management, water consumption, energy consumption.
- Traffic Management: deliveries, plant on site, wheel washing facilities.
- Pollution Prevention: demonstrate compliance with relevant Guidelines for Pollution Prevention, incident response plan, site drainage plan.
- Ecological clerk of works to ensure construction compliance with approved plans and environmental regulations.
- Details of the persons/bodies responsible for activities associated with the CEMP and emergency contact details.

Cyfoeth Naturiol Cymru
Natural Resources Wales

Other Matters

Our comments above only relate specifically to matters included on our checklist, *Development Planning Advisory Service: Consultation Topics* (September 2018), which is published on our website. We have not considered potential effects on other matters and do not *rule out the potential for the proposed development to affect other interests, including environmental interests of local importance*.

We advise the applicant that, in addition to planning permission, it is their responsibility to ensure they secure all other permits/consents/licences relevant to their development. Please refer to our website for further details.

ddiffuant / Yours sincerely

Lisa Jones

Ymgynghorydd Cynllunio Datblygu/Development Planning Advisor
E-bost/E-mail: swplanning@cyfoethnaturiolcymru.gov.uk

PARC CENEDLAETHOL BANNAU BRYCHEINIOG
BRECON BEACONS NATIONAL PARK

Gwilym Davies

Date: 18 November 2019

Officer: Donna Bowhay

Your Ref: P2019/5455

Our Ref: 19/17917/FRI

Dear Sirs,

Town and Country Planning Act 1990 (as amended)
Town and Country Planning (Development Management Procedure) (Wales) Order 2012

Proposal: "Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration, one 4.5km, inside a larger loop of 6.9km in length), New buildings including Test Platform/Station, Control Building, Research and Development Centre, Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings, Winch-propelled facility for testing of track and track systems, Carriage Wash facility, plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries)."
Address: Land At and Surrounding the Nant Helen Opencast Coal Site, Powys and, Onllwyn Distribution Centre, Neath Port Talbot, SA10 9NN

Thank you for your consultation received 3 October 2019 regarding the above.

Proposal
The Scoping Request relates to the proposed development of a rail testing and storage facility, to be known as the Global Centre of Rail Excellence (GCRE).

Development would include: -

- Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length);
- New Buildings including Test Platform/Station, Control Building, Research and Development Centre;
- Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings;
- Winch-propelled facility for testing of track and track systems;
- Carriage Wash facility;
- Ancillary development including land reformation, landscaping, infrastructure works and access

It is proposed that a hybrid planning application would be submitted, with a full application made for the testing facility and ancillary development with the storage facility (located on the existing washery site) being proposed in outline only at this stage.

The application has been submitted as a Scoping Opinion request under Regulation 14 of the Town & Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

The applicants 'Environmental Scoping Report' (September 2019) is viewable on the NPT and Powys CC Planning Register and includes details of the following issues which are proposed to be addressed in the Environmental Statement:

- Socio Economic
- Noise and Vibration
- Air Quality
- Traffic and Transport
- Hydrology and Flooding
- Ground Conditions
- Biodiversity
- Cultural Heritage
- Landscape and Visual
- Health and Wellbeing
- Climate Change
- Major Accidents and Disasters; and
- Cumulative Effects

Consideration

It is considered that the following matters should be addressed within the EIA or supporting information:-

The Environment Act (1995)

Section 63 of the Environment Act (1995) sets out the statutory purposes of the National Park as follows:-

- To conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park; and
- To promote opportunities for the public understanding and enjoyment of the special qualities of the National Park

In accordance with section 62(2) of the Environment Act (1995), any relevant Authority shall have regard to National Park purposes when performing any functions in relation to, or so as to affect, land in a National Park. Relevant Authorities include public bodies, government departments, local authorities and statutory undertakers.

Planning Policy Wales

Planning Policy Wales (PPW Edition 10) acknowledges the statutory purposes of National Parks and reinforces the "Sandford Principle", whereby if there is a conflict between the statutory purposes, greater weight shall be given to the first purpose of conserving and enhancing the natural environment. PPW also recognises that natural heritage issues are not confined by administrative boundaries and that the duty to have regard to National Park purposes applies to activities affecting these areas, whether those activities lie within or outside the designated area.

PPW places significant emphasis on the need to afford the highest status of protection from inappropriate development. Paragraphs 6.3.5 to 6.3.16 should be given appropriate weight.

The Brecon Beacons National Park Management Plan (Approved 04.12.2015)
The Brecon Beacons National Park Management Plan defines the special qualities of the National Park as:

- Peace and tranquility - opportunities for quiet enjoyment, inspiration, relaxation and spiritual renewal.
- Vitality and healthfulness - enjoying the Park's fresh air, clean water, rural setting, open land and locally produced foods.
- Sense of place and cultural identity - "Welshness"
- Sense of discovery
- Sweeping grandeur and outstanding natural beauty
- Contrasting patterns, colours, and textures
- Diversity of wildlife and richness of semi-natural habitats
- Rugged, remote and challenging landscapes.
- Enjoyable and accessible countryside
- Intimate sense of community

It is considered that the special qualities of peace and tranquility, outstanding natural beauty, in particular should be addressed within the EIA.

Brecon Beacons National Park Authority Local Development Plan 2007-2022 (LDP)
Section 3.1.3 of the LDP sets out that whilst the National Park is a landscape designation there are instances where strict application of the boundary in making decisions is not appropriate - Cross Boundary issues include for example wind energy development and transport infrastructure. As previously set out section 62 (2) of the Environment Act (1995) places a duty on LDPs to have regard to the National Park purposes in making planning decisions which may impact on the National Park. The Authority will use LDP policy SP1 in commenting on proposals that impact on the National Park. Policy SP1 sets out the following:-

Development in the National Park will be required to comply with the purposes and statutory duty set out in legislation, and will be permitted where it:

a) Conserves and enhances the natural beauty, wildlife and cultural heritage of the Park; and/or
b) Provides for, or supports, the understanding and enjoyment of the special qualities of the National Park in a way that does not harm those special qualities; and
c) Fulfils the two purposes above and assists the economic and social well-being of local communities.

LVIA

BBNPA have been provided with a copy of the NRW response to the scoping report dated 05.11.2019, which states that the general principles and methodology of the proposed Landscape Visual Impact Assessment (LVIA) appear to be sound, but offer detailed advice, notably that the proposed Zone Theoretical Visibility (ZTV) which is proposed to be limited to 2km from the project boundary, would miss out a number of viewpoints and receptors within the National Park, including from land north/east of Coelbren/Dyffryn Cellwen, on the ridges of Llorfa and Cefn Mawr to the north west and from Cribarth to the north and around Pen-y-cae to the north east. They advise that the ZTV should be widened to 5km to ensure that sensitive areas and receptors within the National Park are included. NRW also state that the ZTV for cumulative effects should also be 5km. BBNPA would concur with this advice.

It is noted that Viewpoints 2, 3, 4, 9, 12, 13, 17 & 18 are in the National Park
In light of NRW advice, it is considered that the following additional viewpoints could be considered:-

- Trig point on Cribarth (SAM & Registered Common Land) approx. 3.16km
- Public Footpath north east of Henrhyd falls, south of Bryn Bugeiliaid (open access land) 2.5-3km

- Dismantled railway north west of Bryn Bugeiliaid forest, on edge of NNR (Ogof Ffynnon Ddu) & a permissive path (Open Country) approx. 4km
- Bridleway on Cefn Mawr ridge North West of Giedd Forest (Open Access) 4.8-5km. The alternative to this could be the Llorfa ridge, which was used in the open cast assessment, although this is further away.
- Potential viewpoints from paths on/close to the site with views looking towards the National Park e.g. on Mynydd Y Drum or to the south.

However, BBNPA reserve the right to request additional viewpoints, should the detailed submissions identify landscape or visual impacts on nearby sensitive areas within the National Park, which have not been satisfactorily addressed through the LVIA.

NRW state that the LVIA should refer to the National Park's Management Plan, (This should be the latest version 2015-2010), the Special Qualities of the National Park (particularly peace and tranquility) and the Landscape Character Assessment (This is as set out in the Landscape and Development Supplementary Planning Guidance dated 24.10.2014). Impacts on LANDSCAPE Character Area 2 - Y Mynydd Du, 3 – FFOREST Fawr and 4 - Waterfall Country and Southern Valleys should be assessed. BBNPA would concur with this advice.

NRW have stated that the baseline for the LVIA should be based on the approved restoration plans for the site, and not the existing situation, i.e. the existing working surface coal mine which is a largely pre- restored site. BBNPA would concur with this advice. BBNPA is aware that the site is subject to planning conditions to secure restoration of the site to beneficial after uses and this also means that the site is not a brown field site, but green field – this fact should be reflected in the supporting documentation and the LVIA.

NRW refer to the need to consider effects of light pollution, particularly night time effects and the Dark Sky Reserve status of the National Park. BBNPA would concur with this advice. Reference should be made to the BBNPA Supplementary Planning Guidance – Obtrusive Lighting and Light Pollution dated 27.03.2015.

General Comments

Renewable energy generation
The Scoping Report, at para 15.6, refers to installing renewable energy generation to mitigate the effects of climate change. Such development should be included in the description of development, the nature of the development clarified and if it involves stand- alone features, these should be properly assessed as part of the LVIA.

Control of artificial lighting
It is considered that lighting should be included as a stand- alone topic within the EIA, as it has the potential to be a significant issue, in respect of lighting during construction and operation. The management and mitigation of artificial light emissions should be produced for the proposed development.

PPW-section 6.8 refers to lighting, and specifically to dark sky reserves of the Brecon Beacons, and their characteristics should be taken into account when considering individual development proposals.

The BBNPA Local Development Plan policy 12 Light Pollution and the BBNPA Supplementary Planning Guidance – Obtrusive Lighting and Light Pollution dated 27.03.2015 are considered relevant and should be taken into account in the assessment of lighting within the proposed development.

Archaeology
The cultural heritage assessment should include an assessment upon the settings of a number of scheduled monuments within the Brecon Beacons National Park boundary.

Biodiversity
If the proposal is to meet Planning Policy Wales Edition 10 (2018), net biodiversity benefits must be part and parcel of the project description and design. These benefits must be demonstrated over and above those provided by the existing agreed restoration for the opencast site.

Whilst it is noted that footnote 17 which explains 'Notable Species' include s7 species, the scoping report appears inconsistent on their consideration indicating that they have and haven't been previously recorded at the site (Para. 289).

Cumulative Impacts
The consideration given to in combination impacts in the scoping opinion appears particularly weak. For instance it omits any detailed appreciation of the projects for which in-combination impacts will be assessed.

The relationship with projects in the draft National Development Framework, the Wales Infrastructure Investment Plan project pipeline and those emerging from the Brecon Beacons National Park Management Plan (e.g. Waterfall Country and the Gunpowder Works) must be considered, not least through the Habitats Regulations Assessment.

Furthermore, in the context of the Habitats Regulations Assessment, the resulting Environmental Impact Assessment must build on the Habitats Regulations Assessment and recognise that "in combination" effects may mean that likely significant effects on a Natura 2000 site cannot be ruled out even though the project, by itself, would not have a significant effect.

Conclusion
It is respectfully requested that the above considerations are secured within the Scoping Opinion.

Yours faithfully,



PP Tracy Nettleton
Planning and Heritage Manager

Yr ydym yn croesawu gohebiaeth yn y Gymraeg. Bydd unrhyw ohebiaeth yn y Gymraeg yn cael ei ateb yn y Gymraeg a ni fydd unrhyw gyswllt trwy gyfrwng y Gymraeg yn arwain at oedi yn y mater sy'n cael ei drin.
We welcome correspondence in Welsh. Any correspondence in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in the matter being dealt with.

Our ref: NPT0557/JBHD **ARCHAEOLOGICAL PLANNING**

Head of Planning
Neath Port Talbot County Borough Council
The Quays
Brunel Way
Baglan Energy Park
NEATH
SA11 2GG

4th October 2019

FAO: Steve Ball

Dear Sir

Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length); New buildings including Test Platform/Station, Control Building, Research and Development Centre; Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings; Winch-propelled facility for testing of track and track systems; Carriage Wash facility; plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries).
Land at and Surrounding the Nant Helen Open Cast Coal Site Powys and Onllwyn Distribution Centre, Neath Port Talbot.
App.No.: P2019/5455.

Thank you for consulting us regarding this scoping opinion.

The supporting information includes a scoping report from Arup dated September 2019 which notes that there are archaeological issues which need to be addressed in order to determine the impact of the proposals on the historic environment. An archaeological desk based assessment will be undertaken to inform the cultural heritage chapter.

Section 12 refers to cultural heritage, and outlines the methodology for assessing the impact of the proposal on the historic environment. It includes stating that the work will be in line with the current best practice for the Chartered Institute for Archaeologists, as well as national, regional and local policies. These include that a methodology for the assessment will need to be agreed with us as your advisors prior to the production of the assessment.

The approach is appropriate, and we look forward to agreeing the methodology.

If you have any questions or require further information on this matter, please do not hesitate to contact us.

Yours faithfully

Judith Doyle

Judith Doyle BA MBA MCIfA
Archaeological Planning Officer

Archaeological Planning

The Glamorgan-Gwent Archaeological Trust Limited

Heathfield House
Heathfield
Swansea
SA1 6EL

Tel: (01792)655208
Fax:(01792)474469
www.ggat.org.uk

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From: Mark Walters <mark.walters@cpat.org.uk>
Sent: 04 October 2019 10:30
To: Gwilym Davies <gwilym.davies@powys.gov.uk>
Subject: Re: New Planning Application Notification 19/1619/SC

Dear Gwilym

Thank you for the consultation on this scoping opinion.

We have already reponded to the Welsh Government consultation exercise on this scheme and confirmed that a cultural heritage assessment of the development area would be necessary as part of an EIA.

There are a number of recorded archaeological sites within the red boundary and a high potential for impacts to both recorded and unrecorded archaeology outside the main former extraction and soil bund stripping areas of the opencast in particular. Impacts are most likely to occur where the new testing tracks are constructed and where other infrastructure is placed outside areas of disurbance caused by prior extraction, soil stripping and quarry buildings.

There is one scheduled monument within the red bounadary area and the applicants will have to consult Cadw via cadwplanning @gov.wales regarding setting issues and other potential impacts.

We have advised Welsh Government that initially a detailed desktop study will be required along with a walkover survey to collate information on
known and unrecorded sites, assess the potential impacts and suggest appropriate mitigation. Further pre-determination assessment may then be required in the form of geophysics, measured surveys and investigative trenching. This work should be carried out in accordance with the appropriate CIFA standards and guidance and a specification (written scheme of investigation) should be forwaded to us by the nominated archaeological contractor for approval in advance of the commencement of the assessment. All finished reports and any resulting digital archives must be submitted to the Historic Environment Record and National Monuments Record (RCAHMW) on completion of the assessments.

Kind regards

Mark Walters

Mark Walters

Development Control Archaeologist / Swyddog Rheoli Datblygiad

Ffôn / Tel: 01938 553670/552035 Mobile: 07736 163148

E-bost / E-mail: mark.walters@cpat.org.uk

Ymddiriedolaeth Archaeolegol Clwyd-Powys, 41 Stryd Lydan, Y Trallwng, SY21 7RR Swyddfa Gofrestredig fel yr uchod. Rhif Cwmni 1212455, Rhif Elusen 508301, Sefydliad Cofrestredig IfA, Rhif 6.

Clwyd-Powys Archaeological Trust, 41 Broad Street, Welshpool, SY21 7RR Registered Office as above. Company No 1212455, Charity No 508301. Chartered Institute for Archaeologists Registered Organisation No 6.

Plant Protection
Cadent
Block 1; Floor 1
Brick Kiln Street
Hinckley
LE10 0NA
E-mail: plantprotection@cadentgas.com
Telephone: +44 (0)800 688588

National Gas Emergency Number:
0800 111 999*

National Grid Electricity Emergency Number:
0800 40 40 90*
* Available 24 hours, 7 days/week.
Calls may be recorded and monitored.

www.cadentgas.com

Mr Steve Ball
Neath Porth Talbot County Borough Council
The Quays
Brunel Way
Baglan Energy Park
Briton Ferry
SA11 2GG

Date: 11/10/2019
Our Ref: XX_GW3A_3NWP_020325
Your Ref: P2019/5455 KS
RE: Formal Planning Application, SA10 9BP Land At And Surrounding The Nant Helen Open Cast Coal Site Powys And Onllwyn Distribution Centre Neath Port Talbot

Thank you for your enquiry which was received on 02/10/2019.
Please note this response and any attached map(s) are valid for 28 days.

An assessment has been carried out with respect to Cadent Gas Limited, National Grid Electricity Transmission plc's and National Grid Gas Transmission plc's apparatus. Please note it does not cover the items listed in the section "Your Responsibilities and Obligations", including gas service pipes and related apparatus.
For details of Network areas please see the Cadent website (http://cadentgas.com/Digging-safely/Dial-before-you-dig) or the enclosed documentation.

Are My Works Affected?

Searches based on your enquiry have identified that there is apparatus in the vicinity of your enquiry which may be affected by the activities specified.
Can you please inform Plant Protection, as soon as possible, the decision your authority is likely to make regarding this application.
If the application is refused for any other reason than the presence of apparatus, we will not take any further action.
Please let us know whether Plant Protection can provide you with technical or other information that may be of assistance to you in the determination of the application.

As your proposed activity is in close proximity to National Grid's Transmission assets we have referred your enquiry/consultation to our Asset Protection team for further detailed assessment. We request that you do not commence work or take further action with regards to your proposal until you hear from us. We will endeavour to contact you within 21 days from the date of this response. Please contact us at assetprotection@nationalgrid.com if you have not had a response within this time frame.

Cadent is a trading name for: Cadent Gas Limited
Registered Office: Ashbrook Court, Prologis Park, Central Boulevard, Coventry CV7 8PE
Registered in England and Wales, No 10080864

National Grid is a trading name for:
National Grid Electricity Transmission plc
Registered Office: 1-3 Strand, London WC2N 5EH
Registered in England and Wales, No 2366977

National Grid is a trading name for:
National Grid Gas Transmission plc
Registered Office: 1-3 Strand, London WC2N 5EH
Registered in England and Wales, No 2006000

Due to the presence of Cadent and/or National Grid apparatus in proximity to the specified area, the contractor should contact Plant Protection before any works are carried out to ensure the apparatus is not affected by any of the proposed works.

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your scheduled activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near Cadent and/or National Grid's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to Cadent Gas Limited, National Grid Electricity Transmission plc (NGET) and National Grid Gas Transmission plc (NGGT) and apparatus. This assessment does **NOT** include:

- Cadent and/or National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to Cadent and/or National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Plant Protection.
- Gas service pipes and related apparatus
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities. Further "Essential Guidance" in respect of these items can be found on either the National Grid or Cadent website.

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to Cadent and/or National Grid's easements or wayleaves nor any planning or building regulations applications.

Cadent Gas Limited, NGGT and NGET or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Plant Protection team via e-mail (click here) or via the contact details at the top of this response.

Yours faithfully

Plant Protection Team

ASSESSMENT

Affected Apparatus
The apparatus that has been identified as being in the vicinity of your proposed works is:

- Electricity Transmission overhead lines
- Above ground electricity sites and installations

As your proposal is in proximity to apparatus, we have referred your enquiry / consultation to the following department(s) for further assessment:

- Land and Development Asset Protection Team (High Pressure Gas Transmission and Electricity Transmission Apparatus)

We request that you take no further action with regards to your proposal until you hear from the above. We will contact you within 28 working days from the date of this response. Please contact us if you have not had a response within this timeframe.

Requirements

BEFORE carrying out any work you must:

- Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe Cadent and/or National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near Cadent and/or National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' and GS6 – 'Avoidance of danger from overhead electric power lines'. This guidance can be downloaded free of charge at http://www.hse.gov.uk
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

GUIDANCE

Working Near National Grid Electricity Transmission equipment:
If you are carrying out any work in proximity to an overhead line or any excavation that may be near an underground cable then please consult National Grid Technical Guidance Note 287 that can be found at https://www.nationalgrid.com/sites/default/files/documents/8589935533-TGN%20287_Third%20party%20guidance%20for%20working%20near%20NGET%20equipment.pdf Further guidance related to underground cables can also be found at https://www.nationalgrid.com/sites/default/files/documents/8589936512-Excavating%20Safety%20Leaflet%20Electricity.pdf

Standard Guidance

Essential Guidance document:
http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982

General Guidance document:
http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=35103

Excavating Safely in the vicinity of gas pipes guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/A3D37677-6641-476C-9DDA-E89949052829/44257/ExcavatingSafelyCreditCard.pdf

Excavating Safely in the vicinity of electricity cables guidance (Credit card):
http://www.nationalgrid.com/NR/rdonlyres/35DDEC6D-D754-4BA5-AF3C-D607D05A25C2/44858/ExcavatingSafelyCreditCardelectricitycables.pdf

Copies of all the Guidance Documents can also be downloaded from the National Grid and Cadent websites.



ID: XX_GW3A_3NWP_020325	View extent: 4120m, 2440m	Do not proceed without further consultation
USER: Kauther.Sheikh	Underground cables Overhead lines	This plan shows those cables owned by National Grid Electricity Transmission plc in its role as a Licensed Electricity Transporter (ET). Electricity cables owned by other ETs, or otherwise privately owned, may be present in this area. Information with regard to such cables should be obtained from the relevant owners The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Ancillary equipment such as cooling systems and communication cables are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Electricity Transmission plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of cables and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near electricity apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.
DATE: 11/10/2019		
DATA DATE: 22/05/2019		
REF: P2019/5455 KS		
MAP REF: SN8310 CENTRE: 283394, 210481	0m 200m Approximate scale 1:10000 on A3 Colour Landscape	

Map 1 of 1 (ELECTRIC)

MAPS Plot Server Version 1.11.0

nationalgrid

Requested by: Neath Porth Talbot County Borough Counc

This plan is reproduced from or based on the OS map by National Grid Electricity Transmission plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024241

Not to be used for construction

ENQUIRY SUMMARY

Received Date
02/10/2019

Your Reference
P2019/5455 KS

Location
Centre Point: 283394, 210481
X Extent: 1285
Y Extent: 590
Postcode: SA10 9BP
Location Description: SA10 9BP Land At And Surrounding The Nant Helen Open Cast Coal Site Powys And Onllwyn Distribution Centre Neath Port Talbot

Map Options
Paper Size: A3
Orientation: LANDSCAPE
Requested Scale: 10000
Actual Scale: 1:10000 (ELECTRIC)
Real World Extents: 4120m x 2440m (ELECTRIC)

Recipients
pprsteam@cadentgas.com

Enquirer Details
Organisation Name: Neath Porth Talbot County Borough Council
Contact Name: Mr Steve Ball
Telephone: 01639 686727
Address: The Quays, Brunel Way, Baglan Energy Park, Briton Ferry, SA11 2GG

Description of Works
P/A Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length); New buildings including Test Platform/Station, Control Building, Research and Development Centre; Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings; Winch-propelled facility for testing of track and track systems; Carriage Wash facility; plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries). W/L

Enquiry Type
Formal Planning Application

Development Types
Development Type: Development for use by General Public

Plant Protection map

AGI site

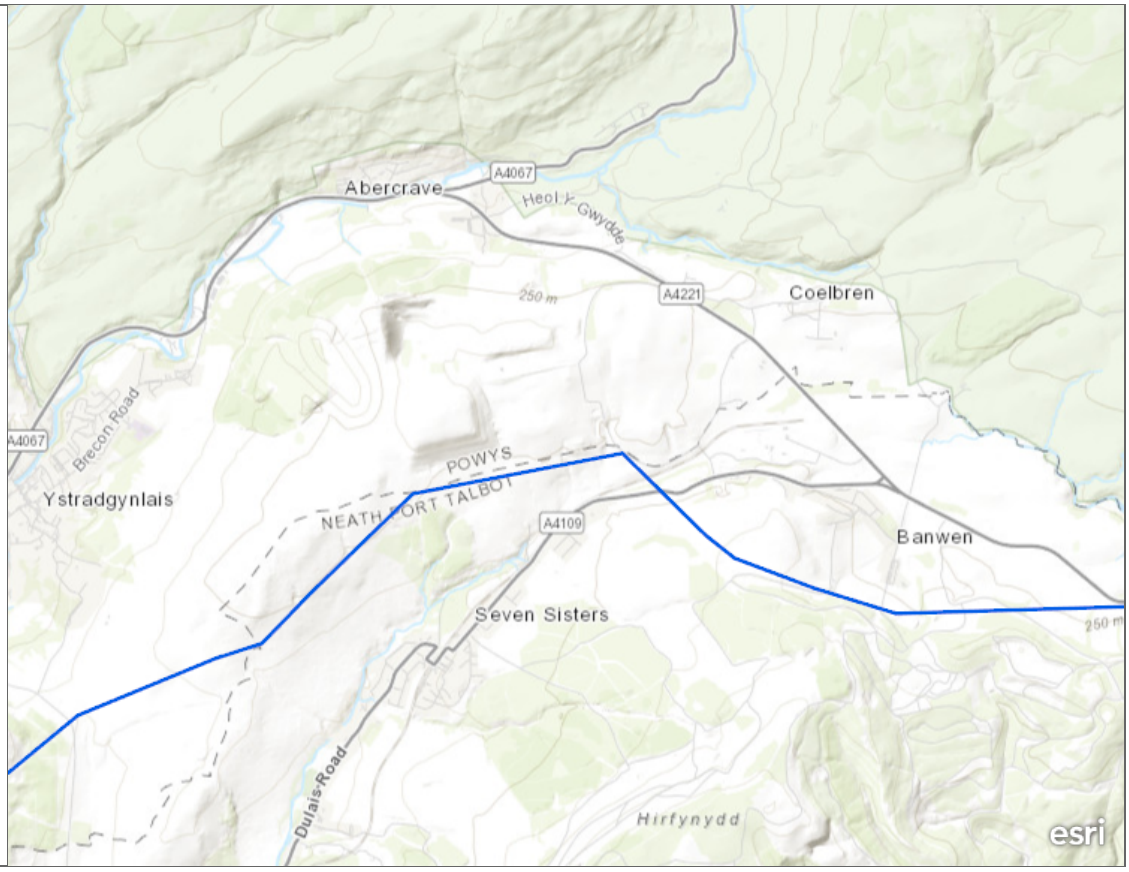
Gas Pipe

Buried Cable

Cooling Station

OHL

Substation



Esri UK, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA

Llywodraeth Cymru
Welsh Government

Plas Carew, Uned 5/7 Cefn Coed
Parc Nantgarw, Caerdydd CF15 7QQ
Ffôn 0300 025 6000
Ebost cadw@llyw.cymru
cadw.gov.wales

Plas Carew, Uned 5/7 Cefn Coed
Parc Nantgarw, Caerdydd CF15 7QQ
Ffôn 0300 025 6000
Ebost cadw@llyw.cymru
cadw.gov.wales

Planning Department
Neath Port Talbot County Borough Council

By email:planning@npt.gov.uk

Eich cyfeirnod Your reference	P2019/5455
Ein cyfeirnod Our reference	DH
Dyddiad Date	23 October 2019
Llinell uniongyrchol Direct line	0300 0256004
Ebost Email:	cadwplanning@gov.wales

Dear Sir/Madam,

Proposed application for a rail testing and storage facility – Global Centre of Rail Excellence (GCRE), land at and surrounding the Nant Helen Open Cast Coal Site, Powys and Onllwyn Distribution Centre, Neath Port Talbot

Thank you for your letter of 2 October 2019 inviting Cadw to provide a scoping opinion as to the contents of an environmental impact assessment to accompany a planning application in respect of the above proposal.

Advice

Having carefully considered the information provided with this request, we consider that further information is required.

Our assessment is given below.

Assessment

Scheduled Ancient Monuments

BR021	Lefel Fawr Coal Adit
BR074	Section of Road NE of Coelbren Fort
BR198	Ynysgedwyn Colliery, Fan House
BR222	Abercrave Ironworks
BR237	Bryn Llechwen ring cairn
BR237	Cribarth Limestone Quarries and Tramroads
GM146	Coelbren Fort
GM343	Roman Marching Camp South East of Coelbren Fort
GM399	Tramroad at Ystradgynlais
GM420	Remains of Blast Furnaces at Banwen

Listed Buildings:

6605	Hen Noyadd	II
6606	10 Lamb & Flag Cottages	II
6607	12 Lamb & Flag Cottages	II

Mae Gwasanaeth Amgylchedd Hanesyddol Llywodraeth Cymru (Cadw) yn hyrwyddo gwaith cadwraeth ar gyfer amgylchedd hanesyddol Cymru a gwerthfawrogiad ohono.

The Welsh Government Historic Environment Service (Cadw) promotes the conservation and appreciation of Wales's historic environment.

Rydym yn croesawu gohebiaeth yn Gymraeg ac yn Saesneg.
We welcome correspondence in both English and Welsh.

BUDDSODDWR MEWN POBL
INVESTOR IN PEOPLE

Cadw

6608	The Pound	II
6609	Outbuildings opposite Lamb & Flag Cottages	II
6610	Circular cow-house at Gwaunclawdd	II*
7468	Pont-y-Yard	II
7544	Cae'r Lan Castle	II
17922	Yard House	II
23032	Sardis Independent Chapel and attached schoolroom	II
25946	,74,Heol Giedd,Cwm Giedd,Swansea,,SA9 1LS	II
25947	,76,Heol Giedd,Cwm Giedd,Swansea,,SA9 1LS	II
25948	,78,Heol Giedd,Cwm Giedd,Swansea,,SA9 1LS	II
25949	,80,Heol Giedd,Cwm Giedd,Swansea,,SA9 1LS	II
25950	,82,Heol Giedd,Cwm Giedd,Swansea,,SA9 1LS	II
25952	Fan house to former Ynyscedwen Mine	II
82048	Circular pigsty at Blaendulais Farm	II
82050	The War Memorial	II

This is a request for a scoping opinion on the contents of an environmental impact assessment to accompany a planning application for a proposed rail testing & storage facility, Global Centre of Rail Excellence on land at the Nant Helen Open Cast Coal Site Powys and Onllwyn Distribution Centre.

An environmental scoping report has been prepared by Arup outlining the proposed contents of the environmental impact assessment and the methodologies that will be used to asses any likely damage to the environment. Chapter 12 of that document deals with Cultural Heritage and in general we concur with its' contents: However, in regard to grade II listed buildings we would recommend that given that these are Nationally designated heritage assets, a search area of 3km would be more appropriate than 1km and that impact of the proposed development on the setting of all designated heritage assets inside 3km (listed above) should be carried out in accordance with the Welsh Government guidance given in the document "The Setting of Historic Assets in Wales". We would expect a stage 1 assessment to be carried out for all of the above designated heritage assets, which will determine the need, if necessary, for stages 2 to 4 to be carried out for specific heritage assets.

Finally, it is noted that paragraph 343 of the scoping document that there is a reference to Planning Policy Wales Chapter 6: The Historic Environment (Edition 9, 2016). This document has been replaced by Planning Policy Wales Chapter 6: The Historic Environment (Edition 10, 2018).

Yours sincerely,

Denise Harris
Diogelu a Pholisi/ Protection and Policy

The Coal Authority

INVESTOR IN PEOPLE

RTPI Learning Partner

200 Lichfield Lane
Berry Hill
Mansfield
Nottinghamshire
NG18 4RG

Tel: **01623 637 119 (Planning Enquiries)**

Email: **planningconsultation@coal.gov.uk**

Web: **www.gov.uk/coalauthority**

For the Attention of: Mr S Ball – Case Officer
Neath Port Talbot County Borough Council

[By Email: planning@npt.gov.uk]

21 October 2019

Dear Mr Ball

REF: P2019/5455 - Request for Scoping Opinion under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 in respect of a proposed application for a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE), and incorporating:- a Rolling Stock and Infrastructure Testing Facility (consisting of two test tracks of loop configuration; one 4.5km, inside a larger loop of 6.9km in length); New buildings including Test Platform/Station, Control Building, Research and Development Centre; Rolling Stock Maintenance Shed, Decommissioning facility and Rail Sidings; Winch-propelled facility for testing of track and track systems; Carriage Wash facility; plus ancillary development including land reformation, landscaping, infrastructure works and access (affecting land within Neath Port Talbot and Powys County Council administrative boundaries) - Land at and surrounding the Nant Helen Open Cast Coal Site, Powys and Onllwyn Distribution Centre, Neath Port Talbot

Thank you for your notification of 2 October 2019 seeking the views of The Coal Authority on the above.

The Coal Authority is a non-departmental public body sponsored by the Department of Business, Energy & Industrial Strategy. As a statutory consultee, The Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

Our records indicate that there are approximately 87 mine entries, within or within 20m of the site boundary. The site is also in an area of recorded and likely unrecorded coal mine workings at shallow depth and is in an area where coal has been removed by surface mining methods.

The submission is supported by an Environmental Scoping Report, dated September 2019 and prepared by ARUP. We are pleased to see that this report identifies the significant coal mining legacy present on the site, and acknowledges that the site is still subject to active surface mining activity until at least 2020.

Section 10 of the Environmental Scoping Report covers ground conditions and identifies that a detailed mining risk assessment will need to be completed to qualify the risks arising from historical mining activities present within the area of the proposed structures and infrastructure and associated construction activities. The report authors note that this should look at historic records, mining abandonment plans, historic borehole records etc. They note that comprehensive ground investigations may be required to locate workings and there may be requirements for remedial works to mining works and shafts on the site.

Where mine entries are present on a site we would expect the location of these to be established by intrusive site investigations in order that the exact location of these features can inform the layout of the development. We would expect the layout plan to demonstrate that the adequate separation is provided between these features, their zones of influence and any structures proposed. The Coal Authority is of the opinion that building over the top of, or in close proximity to, mine entries should be avoided wherever possible, even after they have been capped, in line with our adopted policy: https://www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries

We would be pleased to comment on the contents of the Environmental Statement, or other relevant reports, submitted to support any formal planning application for this development.

I hope this is helpful but please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

Melanie Lindsley

Melanie Lindsley *BA (Hons), DipEH, DipURP, MA, PGCertUD, PGCertSP, MRTPI*
Development Team Leader (Planning)

General Information for the Applicant

Under the Coal Industry Act 1994 any intrusive activities, including initial site investigation boreholes, and/or any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes require the prior written permission of The Coal Authority, since such activities can have serious public health and safety implications. Failure to obtain permission will result in trespass, with the potential for court action. In the event that you are proposing to undertake such work in the Forest of Dean local authority area our permission may not be required; it is recommended that you check with us prior to commencing any works. Application forms for Coal Authority permission and further guidance can be obtained from The Coal Authority's website at:

www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available data on the date of the response, and electronic consultation records held by The Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.

In formulating this response The Coal Authority has taken full account of the professional conclusions reached by the competent person who has prepared the Coal Mining Risk Assessment or other similar report. In the event that any future claim for liability arises in relation to this development The Coal Authority will take full account of the views, conclusions and mitigation previously expressed by the professional advisers for this development in relation to ground conditions and the acceptability of development.

Appendix 2B

Statements of competency

Statement of Competency

Part 5 of The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations, 2017 requires that an Environmental Statement (ES) much be prepared by persons who have '*sufficient expertise to ensure the completeness and quality of the statement*' and that a statement must be included describing the expertise of the person (or persons) who prepared the ES.

This appendix sets out statements of competency for all topic authors of the ES and for the EIA lead.

Rowena Ekermawi: EIA lead
Rowena Ekermawi is a Chartered Environmentalist with more than 18 years' experience as an environmental consultant. Her qualifications include a BSc in Environmental Biology and an MSc in Environmental Assessment and Management. She has worked on numerous EIAs, across numerous sectors, leading large multidisciplinary teams and on complex projects. She has worked in Wales for the majority of her career, focusing on developments within Wales.
Alex Welch: Traffic and transport
Alex is a Senior Transport Planner with 19 years' experience within Consultancy, Local Authority Government and National Government throughout the UK, Bahrain and the United Arab Emirates. His expertise includes the preparation of studies (including Transport Assessments/Scheme Feasibility etc.) related to the planning of developments ranging from a single dwelling to major masterplans in excess of 2,500 homes. Alex has supported development sites through many forms of consultation both in the public forum and via representations made to local members and Ministers.
Sian Leake: Hydrology and flooding
Sian Leake holds an MSc in Catchment Dynamics and Management (University of Leeds). She is a Chartered Water and Environmental Manager (C.WEM), Chartered Scientist (CSci), Chartered Environmentalist (CEnv) and is a Practitioner Member of the Institute of Environmental Management and Assessment (IEMA).
Agnieszka Lopez-Parodi: Ground conditions
Agnieszka Lopez-Parodi is a Chartered Engineer and Member of the Institution of Civil Engineers. She has a MEng (Hons) degree in Environmental Engineering from the Wrocław University of Technology, Poland, and BSc (Hons) degree in Applied Sciences from the University of Glamorgan, Wales. She has 17 years of experience in management of land contamination issues on a variety of projects including highway schemes and land development. She has worked on a number of Environmental Statements providing assessment of ground conditions including land contamination and geology.
Biodiversity: Claire Pooley
Claire Pooley is a chartered ecologist, with over 12 years working as an ecologist in Wales. She has an BSc (Hons) degree in Zoology from the University of Cardiff, and an MSc degree in Biodiversity and Conservation from the University of Exeter. Claire has experience working as an ecologist in both the public and private sector, supporting the delivery of a wide range of developments.
Air quality: James Bellinger

James Bellinger (Air quality lead) (MSc, CEnv, CSci, MIEnvSc, MIAQM, PIEMA) is a senior consultant with over 10 years' experience carrying our air quality assessment. He is an experienced leader (Project Manager) of technical projects including high profile projects and has provided expertise internationally.

Noise and vibration: Peter Mumford

Peter is an acoustician with 12 years of experience: he joined Arup in 2007 having graduated with a first class honours degree in Acoustics/Audio Technology. He specialises in environmental acoustics with a focus on rail projects. He is a Member of the Institute of Acoustics.

Since joining Arup, Peter has focussed on environmental acoustics projects, including railways, highways schemes, and energy schemes. He has focused mainly on railway projects, including Crossrail 1, HS2, Transpennine Rail Upgrade, East London Line depots, covering all aspects of sound, noise & vibration assessments, including optioneering and noise & vibration from surface and tunnelled railways. He is fluent in GIS and has experience developing digital solutions to aid both acoustic calculation problems and clear presentation of assessment results.

Archaeology and cultural heritage: Coralie Acheson

Coralie Acheson is a heritage consultant with 6 years' experience in commercial archaeology in heritage consultancy. She has worked on a range of projects, including Environmental Impact Assessments, heritage strategies, feasibility studies and desk-based assessments, in addition to working as a field archaeologist in London and Yorkshire and carrying out upland walkover surveys in Scotland and Northern Ireland. She is MCIfA accredited and holds a PhD in Cultural Heritage, with undergraduate and masters degrees in Archaeology. She specialises in the values of industrial heritage and World Heritage Sites.

Socio-economics: David Brown

David is an Associate in the Planning team at Ove Arup and Partners Ltd (Arup) with over 15 years' experience in planning consultancy. He has a BSc (Hons) Geography (Human) and Planning, and an MSc Regeneration Studies. David is a Chartered Member of the Royal Town Planning Institute (MRTPI) and a Member, Institute of Economic Development (MIED).

David has experience working on a range of commissions with a focus on the socio-economic assessment and consenting of major infrastructure and energy projects. He has worked under a number of consenting regimes including the DCO process, Schedule 7 of the Crossrail Act and more widely the Town and Country Planning and Highways Acts. Major infrastructure projects that David has worked on include: Richborough Connection Project (National Grid), Hinkley Point C Connection Project (National Grid), A40 Improvements (Welsh Government), Whitechapel Station (Crossrail) and large scale on-shore wind and solar developments.

Health and wellbeing: Felicity Cole

Felicity is an Environmental Consultant with four years' experience in environment and health assessments. She has undertaken health assessments for a wide range of projects including High Speed Two (Phases 2a and 2b), the Meridian Water residential development in London, the Alexander Stadium redevelopment, Jersey Future Hospital and the A487 New Dyfi Bridge. She has also been involved in the reviewing of health assessments as part of an environmental advisory role for the London Legacy Development Corporation, reviewing environmental and health documents on behalf of the Planning Authority. She has a degree in Geography and Master of Environmental Science. She is a Practitioner of IEMA and an Associate Member of the RTPI.

Landscape and visual impacts: Dan Watson
Dan Watson is a landscape architect with 5 years' experience working on design and assessment of infrastructure and public realm schemes of varying scales. He has experience of the iterative and integrated assessment and design process ranging from large-scale hybrid bill applications to smaller-scale local developments. He holds an undergraduate degree, postgraduate diploma and masters degree in landscape architecture. Dan is a Chartered Member of the Landscape Institute (CMLI) and a previous member of the Landscape Institute Advisory Council.
Climate change: Damien Canning
Damien Canning is the climate topic lead for the project. Damien works within Arup's Resilience, Energy and Climate Change group where he develops and manages a broad range of work across the environmental sustainability spectrum. Damien is a Chartered Environmentalist and holds an MSc in Carbon Management. Damien has specialised in climate change with experience across both GHG emissions mitigation and climate change resilience. He is an experienced carbon management practitioner and has delivered a number of baseline projects. He is a competent user of a range of lifecycle assessment and carbon quantification tools. Damien has seven years practitioner experience and has led, contributed to, or provided technical review to a number of EIAs across transport sectors.

Appendix 3A

Outline CEMP Statements of competency

Welsh Government

Global Centre of Rail Excellence (GCRE)

Outline Construction Environment Management Plan (CEMP)

CEMP

Issue P01 | 28 August 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 264904-00

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

Document verification

ARUP

Job title		Global Centre of Rail Excellence (GCRE)			**Job number** 264904-00
Document title		Outline Construction Environment Management Plan (CEMP)			**File reference**
Document ref		CEMP			
Revision	**Date**	**Filename**	Report2.docx		
Draft 1	28 Aug 2020	**Description**	First draft		
			Prepared by	Checked by	Approved by
		Name	Tabitha Kennedy	Rowena Ekermawi	Damian Barry
		Signature			
Issue	9 Sept 2020	**Filename**	Appendix 3A Outline CEMP		
		Description			
			Prepared by	Checked by	Approved by
		Name	Tabitha Kennedy	Rowena Ekermawi	Damian Barry
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document verification with document	✓

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1 Introduction

1.1 Purpose of the Outline CEMP and CEMP

1.1.1 This document is the outline Construction Environmental Management Plan (CEMP) to accompany the planning application for the Global Centre of Rail Excellence (GCRE).

1.1.2 The outline CEMP contains control measures, and the standards to be implemented throughout the construction of the works in order to avoid and reduce impacts during construction.

1.1.3 The Contractor(s) will be responsible for producing the final CEMP in accordance with the requirements set out in this document. The CEMP will therefore evolve and is subject to refinement, amendment and expansion as necessary.

1.2 Guidance and other documents

1.2.1 The CEMP is intended to satisfy the principles of the International Environmental Management System (EMS) Standard ISO 14001. The appointed Contractor(s) will ensure that the CEMP for the Proposed Development complies with the Contractor(s)'s own EMS.

1.2.2 The CEMP will be developed in accordance with relevant best construction practice guidance including:

- Guidance for Pollution Prevention (GPP) 1 – 29. In particular:
  - GPP 2 Above Ground oil storage tanks;
  - GPP 5 Works and maintenance in or near water;
  - GPP 6 Working at construction and demolitions sites;
  - GPP 21 Pollution incident response planning;
  - GPP 22 Dealing with Spills;
  - GPP 26 Safe storage – drums and intermediate bulk containers
- CIRIA Environmental handbook for building and civil engineering projects.

1.3 Assumptions of the Outline CEMP

1.3.1 This Outline CEMP is based on the information available at the time of writing. It is assumed that the Outline CEMP will be developed into the CEMP by the appointed Contractor(s).

1.3.2 Any planning conditions and commitments made following submission of the planning application (if required) will be incorporated into the CEMP by the appointed Contractor(s).

1.3.3 It is assumed that the CEMP will be updated regularly by the Contractor(s) during construction.

1.3.4 It is assumed that a number of Contractors (including specialist contractors and sub-contractors) may be appointed during construction. All site construction staff, including sub-contractors, will be required to comply with the CEMP throughout the entire construction stage of the Proposed Development.

1.3.5 It is assumed that any failings in environmental management will be corrected through regular site monitoring and site audits, undertaken by the Contractor's Environmental Manager.

Document and Records

1.3.6 There shall be two electronic copies of the CEMP, one to be held on site by the Environmental Manager and the other off site by GIL. Both copies are to be kept up to date by the Contractor's Environmental Manager.

1.4 Incident Response Planning

1.4.1 The Contractor(s) will develop a Pollution Incident Response Plan which identifies the procedures for the event of a pollution incident during construction. The procedures will be in accordance with the guidance set out in GPP 21 Incident Response Planning.

1.4.2 All environmental incidents and accidents will be recorded and reported to the Contractor(s)'s Site Foreman and the Project Manager. Following a review of the incident, the Contractor's Environmental Manager will instigate an appropriate change in procedures where necessary.

1.4.3 The appropriate equipment required to implement these procedures shall be made available by the Contractor(s) and stored within the Contractor(s)' compound.

2 Roles and responsibilities

2.1.1 This section of the Outline CEMP identifies the roles and responsibilities of those involved in environmental management during construction.

2.2 Employer

2.2.1 Welsh Government are the employer and will appoint project managers on their behalf to oversee the works.

2.2.2 Welsh Government will appoint a board level Director to oversee the project and appointment of staff and contractors.

2.2.3 Welsh Government is accredited to ISO 14001 (2015).

2.3 Project Manager

2.3.1 The Project Manager will act on behalf of the Employer, with responsibility for managing the works of the Proposed Development within the agreed environmental constraints in conjunction with all other necessary management processes.

2.4 Contractor

2.4.1 It is assumed that a number of Contractor(s) (including specialist contractors and sub-contractors) will be appointed during construction of GCRE. There may be separate contractors for the Enabling Works and the Main Construction Contract.

2.5 Environmental Manager

2.5.1 An Environmental Manager and the Project Manager will oversee the implementation of CEMP including environmental control measures, mitigation and procedures. The Environmental Manager will be appointed by the Contractor prior to the enabling works and will implement the control measures during the Enabling works and main construction.

2.5.2 The Environmental Manager shall monitor, measure and review the environmental performance of the construction activities.

2.5.3 The Environmental Manager will host regular internal and external meetings, and undertake audits to review the operation and effectiveness of the CEMP. The results shall be reported by the Environmental Manager at monthly construction progress meetings and used to update the CEMP.

2.5.4 The Environmental Manager will be responsible for the implementation of other environmental management plans.

2.6 Community Liaison

2.6.1 The Employer and the Contractor will prepare a procedure for local community liaison with regards to construction activities. Regular community forum meetings will be held to keep the community informed of project progress including anticipated issues which may be of interest.

2.6.2 The Employer will provide to the community general enquiry and emergency contacts for them to use, such that any issues may be raised directly with them, in the event that feel it appropriate to do so.

2.6.3 The contractor will provide a site-based Community Liaison Officer (CLO) and will ensure all site generated enquiries and/or complaints are effectively logged, communicated and actioned in agreement with The Employer. The CLO will align with and assist the delivery of the overarching Communication and Engagement plan.

2.6.4 The CLO will represent the contractor at any required internal and external partnership/stakeholder meetings. These meetings will relate specifically to community initiatives or communications tasks for the Proposed Development.

2.6.5 The CLO will be the primary point of contact for the Community Development Manager relating to matters on the ground. Themes the CLO will regularly communicate are; progress of construction, barriers to progress, reported issues, resolution of those issues and report impact on overall objectives.

- The CLO will build and maintain positive relationships with stakeholders facilitating a dynamic and effective communication procedure with established communications team and generating an acceptance of a common vision with all partners/stakeholders;
- Ensuring positive awareness of the project brand to all internal and external stakeholders;
- Work closely with the communications team and particularly the Community Development Manager to plan and deliver community liaison tasks to ensure the delivery of the KPI's of the communication and engagement plan; and
- Communicate and administer all enquiries and/or complaints in an effective and timely manner, reporting up when required.

2.6.6 The contractor and the site will be registered with the Considerate Construction Scheme (CCS) and will be monitored and measured against the code of Considerate Practice.

3 Control of Construction Processes

3.1 Training, awareness and competence

3.1.1 The Contractor(s) will set out a programme of training to enable all site personnel to be aware of the potential risk to the environment during the construction progress.

3.1.2 The Environmental Manager will set out a series of induction courses for all site personnel including sub-contractors. The induction courses shall ensure all site personnel (including any new personnel) are aware of the environmental risks which have the potential to happen during construction. The inductions will inform the construction team on how to identify relevant environmental risks on site, record actions taken to protect the environmental and implement best practice to minimise pollution.

3.1.3 Environmental Awareness Toolbox Talks will be delivered by the Environmental Manager on a regular basis. These will provide an update to the site team on any relevant environmental issues as the construction progresses.

3.1.4 Selected members of the site management team including the Construction Site Foreman and Environmental Manager will be given practical training in the use of the spill kits, appropriate PPE, clean-up procedures and the appropriate disposal and recycling plans.

3.2 Environmental inspection, monitoring and reporting

3.2.1 The Environmental Manager will prepare a monthly environmental report to be tabled at the monthly site progress meetings. This report will monitor the implementation of the CEMP and review the ongoing site monitoring and inspections.

3.2.2 The monthly reports will be circulated to the Employer and the Contractor(s) for consultation and review.

3.3 Internal communications

3.3.1 All staff and Contractor(s) will be informed of the content and location of the CEMP and associated management plans and method statements. Method Statements will be used to communicate specific environmental requirements as appropriate.

3.3.2 The Environmental Manager will have responsibility for communicating any changes and updates in policy, procedure, best practice guidance and legislation.

3.3.3 The Contractor(s) will have responsibility for maintaining internal communication, including changes to material on display.

3.4 Communications with the statutory bodies and the public

3.4.1 The Contractor(s) will organise and facilitate regular meetings with statutory environmental bodies to provide an update on risk mitigation, progress against targets and a review of site monitoring and inspections. This will provide a mechanism for updating and adapting the CEMP as the project progresses.

3.4.2 The contractor(s) will maintain a record of all meetings held with statutory bodies during construction stage.

3.4.3 A notice board shall be identified on site where environmental information on the Project shall be displayed.

4 Environmental Control Measures

4.1.1 Control measures have been designed as part of the EIA and are integral to the Proposed Development.

4.1.2 This section of the Outline CEMP identifies the control (i.e. mitigation) measures as per each environmental topic assessed within the ES.

4.2 General Measures

4.2.1 Excavation plant machinery will be fitted with fuel spill kits.

4.2.2 Lighting will only be used as necessary.

4.2.3 Welfare facilities will be provided on site and maintained by the Contractor(s).

4.2.4 Vehicle/equipment washing facilities will be positioned away from watercourses and constructed with a drainage system which will capture run-off and effluent which will then be contained for proper treatment as per the Surface Water Management Plan.

4.2.5 To minimise noise, vibrational and air quality impacts from vehicles and plant/equipment, the Contractor(s) will instigate behavioural policies for all site staff. This will include:

- Minimising traffic to site by 'sharing' vehicles or by the use of a site bus (this will be detailed in the Construction Traffic Management Plan (CTMP);
- Avoidance of part load deliveries (this will be detailed in the CTMP);
- Utilisation of a pre-booked delivery policy to minimise holding vehicles prior to loading or unloading (this will be outlined in the CTMP); and
- Ensuing that all construction plant, vehicles and equipment are turned off rather than left idling while awaiting usage (this will be detailed in the CTMP). Where feasible use of hybrid generators which help reduce noise and fuel consumption.

4.2.6 Areas will be clearly marked and managed to prevent them becoming overfilled and ensure that the areas are suitable for the materials stored.

4.2.7 Hazardous materials such as fuel will be stored within secure compound areas to prevent spillage, theft or malicious damage. A single Control of Substances Hazardous to Health (COSHH) area will be established to ensure the correct level of protection against fire spills and other chemical hazards. This will prevent sub-contractors and others creating individual stores, which are then not recorded or controlled.

4.3 Biodiversity

4.3.1 Appropriate measures will be adopted to protect the ecology of the site with special attention to specified ecological resources, as identified within the Ecology Chapter of the ES.

4.3.2 The Employer will require its contractors to manage impacts from construction (including site clearance) including to the following ecological receptors:

- Statutory designated sites including the Nant Llech and Gors Llwyn SSSI; in hydrological connectivity to the Site.
- Non-Statutory sites including ancient woodland (ancient woodland and Planted Ancient Woodland (PAWS)); within and adjacent to the Site.
- Other notable habitats including mire/fen, flushes, wet heathland, marshy grassland, acid grassland/dry heathland, ditches, ponds and streams; within and adjacent to the Site.
- Notable species (e.g. including vascular plants, fungi, invertebrates amphibians, reptiles, breeding birds, wintering birds, otters, roosting/foraging bats, mammals and badgers); within and adjacent to the Site.
- Invasive Non-Native Species; within and adjacent to the Site.

General Provisions

4.3.3 A Suitably Qualified Ecologist (SQE) will provide a tool box talk to all contractors prior to any works commencing, and be available for advice for the duration of the construction programme.

4.3.4 The INNS Management Plan will be implemented during construction.

4.3.5 Any retained habitats (such as marshy grassland, waterbodies, trees and woodland) will be securely fenced off with appropriate temporary fencing (e.g. chestnut paling on scaffold supports or ‘Heras’ fencing) at the start of construction work to prevent access and incidental damage by site vehicles, equipment and personnel.

4.3.6 All retained trees should be treated in accordance with British Standard BS5837 (2012) Guidance for the Treatment of Trees in Relation to Construction. Damage to mature trees, as well as tree and scrub understorey and ground flora within mature woodland, should be avoided.

4.3.7 Where possible vegetation clearance takes place outside of the bird breeding season (generally March to August inclusive); if this is not possible, pre-construction checks for nesting birds will be undertaken by an ecologist to ensure active nests are not disturbed.

4.3.8 Where protected/notable species are found during pre-construction checks in habitats within, and or adjacent to, the Site, and cannot be disturbed for example nesting birds, resting/breeding otter, badger setts, an appropriate buffer (based on

best practice guidance for relevant species where available) will be demarcated and no construction works will take place within this area, until the SQE has confirmed otherwise.

4.3.9 Pollution control measures will be implemented in accordance with industry standards and the Pollution Prevention Guidelines published by the Environment Agency[1].

4.3.10 In particular, measures to control and contain sediment and material arising from excavations and or piling operations at areas in proximity to waterbodies, will be included within the working method statements that will be developed as part of the agreed CEMP.

4.3.11 All tools, food, litter and construction materials and packaging that may constitute a hazard to otters and other Section 7 mammals, as well as roosting birds and reptiles, will be removed daily from the site.

4.3.12 Any traffic plans produced will ensure that vehicle traffic is restricted to agreed low limits.

4.3.13 Excavations are to be covered at night-time or a means of escape provided (such as a plank of wood) for otter, badger or other animals.

Species – specific provisions

4.3.14 To compensate for the potential loss of one breeding barn owl pair, at least one barn owl nest box will need to be installed in suitable habitat further than 3 km from the Site in accordance with guidance[2].

4.3.15 A lighting design and associated plan will be produced in accordance with Bat Conservation Trust's (BCT) 'Bats and Lighting' publication[3], and will avoid light disturbance to bats, and other nocturnal or crepuscular species such as otter and badger. The plan will aim to avoid lighting of key wildlife corridors such as tree lines, waterbodies, rivers and streams, used by these species. Any lighting will be directional with minimal upwards or backwards light spill and minimising light spill onto adjacent, retained habitat features. Lighting onto any associated landscaping which is designed to direct species through culverts, will also need to be considered within this lighting plan.

4.3.16 Pre-construction surveys including breeding birds (if works are planned between March and August inclusive), bats (in trees), otter and badger will be undertaken to determine the presence of these species within an appropriate distance from the construction works. Larger buffers will be required for more sensitive species (including some breeding birds such as lapwing and curlew) or where more significant impacts are likely to occur such as vibrations (for example a 60 m

[1] It is noted that these Guidelines have been withdrawn by the Environment Agency, however they are considered to still be relevant and applicable until such time as new guidance is available.
[2] https://www.barnowltrust.org.uk/barn-owl-nestbox/

[3] http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf

buffer would be required for bats, if roosts are found). Details of buffer distances will be agreed with LPAs in advance.

4.3.17 A reptile trapping and relocation programme will be implemented, in accordance with a reptile method statement will be undertaken by a Suitably Qualified Ecologist (SQE). A suitable receptor site for reptile translocations will need to be identified prior to any reptile mitigation taking place, and be agreed by the LPA ecologists and the sites landowner. It is anticipated that adjacent / connecting habitats within Nant Helen site will be suitable, and which would also be subject to further enhancements for reptiles.

4.3.18 Badger setts located within the test tracks will be closed temporarily during the site clearance and construction, until construction is complete and suitable underpasses for badger have been constructed along with suitable connecting landscaping. This will need to be undertaken under a protected species licence from NRW, which will be obtained prior to construction commencing.

4.3.19 Licences will be sought from NRW as required for any other European and Nationally protected species, where these are found during pre-construction checks or where the final design confirms likely impacts on these species. Mitigation will be implemented accordingly as detailed in accompanying Method Statements.

Ecological Protection Plan (EPP) and Ecological Management Plan (EMP)

4.3.20 A detailed Ecological Protection Plan (EPP) and Ecological Management Plan (EMP) drawn up prior to any clearance or construction activities commencing on Site, and be submitted for approval by the LPA and NRW, and will include the following.

4.3.21 An EPP will be prepared prior to any site clearance/construction works commencing on Site, and be submitted to the LPA and NRW for approval. The EPP will include details of mitigation measures, which are required during site clearance/construction to ensure the protection of adjacent protected sites and notable habitats (including the immediately adjacent marshy grassland, species rich grassland, waterbodies, river corridor and heathland in the Washery and retained and newly created habitats within Nant Helen) for example measures such as fencing, buffer zones and pollution control measures. It will also include details of any species translocations.

4.3.22 An EMP will include the following:

- Details of the ecological baseline, including existing and additional ecological survey results. It will also detail information of existing landownership and management, as well as geology/ground conditions, hydrology and topography – which will be essential to inform habitat establishment proposals.

- Details of the newly established habitats including existing habitat translocations, where possible, and the creation of new habitats. It will include details of how these habitats, will provide suitable habitat for notable species.
- Details of habitat enhancements, which will be provided in addition to the 'like for like' replacement of lost habitats within the site.
- Details of total areas of habitat lost (during construction), along with new habitat to be gained (post construction/operation). This will also include details of net gains. It will need to be clear where habitat replacement/enhancement is for the existing ecological baseline and the future baseline (i.e. the restored site).
- The locations of newly established habitats.
- Suitable prescriptions for the management of newly established habitats, which enhances their value for biodiversity post development. This will include specific management measures for notable habitats and species within the site including notable plants/fungi, invertebrates, amphibians, reptiles, breeding birds, wintering birds, roosting and foraging/commuting bats, otter and notable mammals.
- A programme detailing the duration of each survey/habitat creation/management activity, what time of year it will need to be undertaken, and how frequently.
- The EMP period will be agreed with the LPAs/NRW but is anticipated to be for a minimum of five years. A programme detailing all management prescriptions for the first 5 years post-construction, which will be subject to review and extension. Responsibilities for each task will need to be detailed.
- Full details for the monitoring of the site post development, to provide information on changes in habitat condition and additional mitigation/management measures that may be required.

4.3.23 The Contractor will need to provide information on construction methods and temporary works prior to Site clearance, and for inclusion within the EPP and EMP.

Enhancements

4.3.24 Full details of habitat enhancements will be provided in an EMP, which will be implemented through management of habitats. Specific actions to be undertaken during construction are detailed below:

- An artificial otter holt will be provided along the Afon Dulais, at least 100 m west of the development, or an alternative site to be identified by the Ecological Clerk of Works (ECoW) in consultation with NRW, to provide a suitable breeding site for otters due to the presence of foraging/commuting otter in this area.
- A range of bat boxes and / or bat bricks in buildings and bridges (no less than 20) will be provided on mature trees, and where possible buildings and bridge structures, within the Site, and or adjacent habitats (subject to landowner

agreement). The number and location will be selected by the ECoW and would be informed by the number of appropriate trees, buildings and bridge structures within/adjacent to the Site. These should be of woodcrete construction, such as Schwegler models, which are more durable and require minimal maintenance.

- A range of bird boxes (no less than 30) will be provided on mature trees, and where possible buildings and bridge structures, within the Site, and or adjacent habitats (subject to landowner agreement). The number and location will be selected by the ECoW and will be informed by the number of appropriate trees and buildings within/adjacent to the Site. Swift (*Apus apus*) boxes and house sparrow boxes should be prioritised for buildings, and grey wagtail / dipper (*Cinclus cinclus*) boxes for bridges. Similar to bat boxes, these should be of woodcrete construction, such as Schwegler models, which are more durable and require minimal maintenance.
- At least 15 artificial reptile refugia, which provide shelter to hibernating and active reptiles, will be created using materials available post site clearance / construction such as timber logs, brash, grubbed up tree roots, inert hardcore, bricks or building rubble. The number and location will be selected by the ECoW and would be informed by available suitable habitat.

Monitoring

4.3.25 Condition monitoring of newly established/enhanced habitats will be carried out on an annual basis for a period of 5 years. The specific attributes of each habitat for monitoring, will be detailed in the EMP to include: extent, vegetation composition, vegetation structure and physical structure. Targets for each attribute will also be detailed. Where habitats aim to support notable species, attributes and targets will also account for this. Methods of monitoring will be determined once the attributes / targets have been set, but will follow published methods[4,5,6.]

4.3.26 Monitoring of notable species, of County value, including: vascular plants, fungi, invertebrates, breeding birds and bat activity (with surveys following relevant best practice, and based on previous surveys undertaken to establish the baseline). It is proposed that these monitoring surveys will be in year 1, 3 and 5 post construction. Species, attributes, targets and monitoring methods will be agreed, in consultation with the LPA and NRW.

4.3.27 Monitoring results will be reported through a Steering Group, led by the site owner in partnership with NPTCBC and PCBC, NRW, and invited interested parties such as users/managers, advisory consultants/independent experts and local interested parties (e.g. Commoners representative) as appropriate. The site owner and the local authorities shall agree where additional remedial measures are required to ensure the objectives of the EMMP are implemented.

[4] JNCC, 2010. Handbook for Phase 1 habitat survey – a technique for environmental audit (2010) 2016.
[5] Jerram, R. & Drewitt, A. (1998). Assessing vegetation condition in the English uplands. Peterborough: English Nature Research Reports, No. 264.
[6] JNCC (2009). Common Standards Monitoring Guidance for Upland habitats, Version July 2009.

4.4 Landscape and Visual Impact

General Provisions

4.4.1 The following measures will be implemented to help mitigate the impact of the development on the landscape and visual resource:

- where possible retain existing trees across the site: Any retained habitats (such as waterbodies, trees and woodland) will be securely fenced off with appropriate temporary fencing (e.g. chestnut paling on scaffold supports or 'Heras' fencing) at the start of construction work to prevent access and incidental damage by site vehicles, equipment and personnel;
- all retained trees should be treated in accordance with British Standard BS5837 (2012) Guidance for the Treatment of Trees in Relation to Construction. Damage to mature trees, as well as tree and scrub understorey and ground flora within mature woodland, should be avoided;
- replace/plant trees with suitably sized trees to the approval of the Local Authority Tree Officer, and in accordance with the approved programme for undertaking planting works at the first available planting season;
- use of well-maintained fencing and hoardings to prevent unwanted access to the earthworks site, to provide screening, and site security where required;
- use of appropriate types of fencing and hoarding to minimise visual intrusion, painting the side of hoardings facing away from the site, and keeping them free of graffiti or posters;
- in addition to the points in Paragraph 4.3.11, temporary lighting should avoid unnecessary intrusion onto the wider landscape and/or visual receptors; and
- Maintain a clean and tidy site, using road sweepers and other appropriate methods.

Protection of Vegetation

4.4.2 Vegetation clearance would be undertaken during the appropriate season/time of year, with great care to remove the minimum necessary and to protect and retain adjacent vegetation (Refer to Paragraphs 4.3.7 and 4.3.8).

4.4.3 To prevent the spread of non-native invasive plant species, the appointed contractor must follow the latest guidance as set out by NRW.

4.4.4 Sourcing of trees, plants and seed will be in accordance with current Defra/NRW and industry guidance to prevent the spread of pests and diseases and non-native invasive species. The Contractor is to refer to UK Plant Health Information Portal and NRW's latest publications on this topic.

Measures to Reduce Potential Impacts on Landscape and Visual Resource

4.4.5 Planting and other landscape measures will be implemented during the earliest planting season and when it is reasonably practicable. If 'off-site' planting is proposed this should be planted in advance of construction works, if reasonably practicable.

4.4.6 A record of how the implementation of the works meets control measures, relevant to protection of the landscape and key landscape features, will be maintained and regularly reviewed.

4.4.7 The Employer, the Local Planning Authorities, NRW and other bodies (where they have an interest), and adjacent landowners will be consulted, as appropriate, regarding the landscape and planting proposals.

Monitoring

4.4.8 Appropriate inspection, monitoring and maintenance of seeding works provided as part of the Project, will be undertaken by the Contractors throughout the construction.

4.4.9 The Employer will supply its Contractors with information prior to the construction to verify the landscape planting and seeding design as set out in the ES, on drawings and in the specification. This will allow the contractors to fully understand the required mitigation measures.

4.4.10 The Employer will require its contractors to undertake appropriate maintenance of seeding works and implementation of management measures, through the construction period as landscape works are completed. The contractors will monitor the progress of new landscape works through the construction period. Any failures of planting and seeding will be replaced in accordance with the approved specification and works requirements. This will ensure reseeding works are undertaken (as required) to achieve successful establishment of the landscape mitigation proposals at completion of the construction works. The Employer will require its contractor to maintain seeding throughout the defects liability period.

4.5 Historic Environment

Cultural Heritage Management – general provisions

4.5.1 The Employer and its principal contractors will manage the impact of construction on the cultural heritage assets present in proximity to the site, including:

- The Scheduled Monument within the site;
- Non-designated assets as identified in Chapter 8 of the Environmental Statement and previously unrecorded archaeological remains potentially present in areas not subjected to open cast mining.

4.5.2 Any works to the Scheduled Monument will require Scheduled Monument Consent, obtained from Cadw. Carrying out works without gaining consent is an illegal act.

4.5.3 All works will be managed in accordance with relevant Standards and Guidance of the Chartered Institute for Archaeologists and guidance from Glamorgan Gwent Archaeological Trust (GGAT) and Clwyd Powys Archaeological Trust (CPAT) taking account of the relevant sections of the Written Scheme of Investigation, developed by The Employer and its contractors and approved by CPAT and GGAT.

4.5.4 General cultural heritage management measures will include:

- An archaeological contractor will be appointed by The Employer. They will be a CIfA Registered Organisation.
- Provision to the contractors of locations and descriptions of all known cultural heritage assets within and adjacent to, construction works, including restrictions to construction methods to protect cultural heritage assets, where these have been identified in the ES;
- A programme detailing the implementation of cultural heritage survey works prior to and during construction, addressing the measures set out in the ES;
- The Employer will ensure that the cultural heritage mitigation works measures (as set out in the ES) are properly programmed by its contractors;

4.5.5 The Employer will require its contractors to monitor compliance using appropriately qualified environmental management staff with specific responsibility for supervising works with the potential to affect cultural heritage interests;

4.5.6 During all stages, The Employer will require its contractors to facilitate archaeological specialists undertaking the works as specified as an appropriate mitigation measure (including purposive investigation and/or watching brief works);

4.5.7 All archaeological intervention, recording, analysis, dissemination and archiving will be undertaken by a suitably qualified and demonstrably experienced organisation; and

4.5.8 Cadw and GGAT/CPAT (Development Control) will be consulted as appropriate through all stages of the implementation of the programme of cultural heritage works.

Human Remains

4.5.9 Should human remains be located during earthworks The Employer and its contractors will comply with all relevant legislative and project specific requirements.

Written Scheme of Investigation

4.5.10 A Written Scheme of Investigation will be prepared by a suitably qualified archaeological contractor and agreed with CPAT/GGAT (Development Control) prior to the start of work.

Measures in the Event of Unexpected Discoveries of Significance

4.5.11 Should cultural heritage assets of potential national significance be unexpectedly revealed during construction the procedure, as previously agreed with The Employer, and where appropriate CPAT/GGAT, will be implemented in the event of any such discoveries being made. Mitigation may include the following, as appropriate:

- Investigation and assessment of discoveries to determine their significance if this cannot be determined from the asset as found;
- Assessment of potential project impacts to inform design of appropriate mitigation measures;
- Preparation of a written scheme of investigation for any stage of archaeological work required;
- Excavation, recording and reporting on any discoveries; and
- Recording and implementing measures to preserve any discoveries in situ, if required or if appropriate.
- Appropriate fencing and hoarding will be provided as necessary to protect sites of archaeological or cultural heritage interest within or adjacent to the construction site, including unknown sites discovered during construction.

Monitoring

4.5.12 Arrangements will be made to allow CPAT/GGAT Development Control and Cadw to monitor the works at their discretion.

4.6 Water Environment

General Site Activities

4.6.1 Site compounds will be located away from all surface water features and watercourses and outside of the flood plain.

4.6.2 Wherever practicable, grey water systems will be used at site compounds to reduce run-off from site, improve water efficiency and reduce the potential for polluting discharges to surface watercourses.

4.6.3 A site drainage plan will be prepared in advance of construction works, identifying the location of all watercourses and drains/drainage paths and showing mitigation measures to protect the receiving water environment from pollutants from the scheme's construction.

4.6.4 All drainage on site will be identified and mapped, with colour coding used to distinguish between surface water, foul sewer and combined drainage. This will ensure that all those working on site are aware of the type of drain in the event of a pollution incident. Pollution control measures such as the use of oil interceptors, the placement of bunds or sediment traps will be used to prevent sediment run-off entering drains.

4.6.5 All personnel will attend a site induction before commencing work on site. The briefing will emphasise the sensitivity of the watercourses, surrounding habitat and methods and working practices employed to protect the water environment.

Surface Water Management

4.6.6 Temporary surface water management systems will be installed early in the construction sequencing and carefully managed to prevent localized flooding or pollution of surface and groundwater from sediment and other contaminants.

4.6.7 Silt fencing, cut-off ditches and soil bunds will be constructed downslope of excavations, to retain and convey water to adequately sized treatment areas to prevent the ingress of sediment contaminated water.

4.6.8 Areas of exposed sediment deemed at risk of erosion during heavy rainfall or flood inundation should be protected using either temporary measures (e.g. sheeting) or semi-permanent measures (for example coir matting) until vegetation is able to establish on these surfaces.

4.6.9 Temporary surface water drainage measures should be planned and designed appropriately prior to installation and recorded on drawings. This should include details on:

- Soil/sediment settlement rate;
- Drainage system capacity;

- Details of systems installed to intercept and treat contaminated water run-off; and
- Details of steps to prevent bypassing of the drainage system.

4.6.10 Use of cut-off drains or ditches to convey water around the site and/or prevent sediment laden water entering excavations and watercourses.

4.6.11 Sediment laden water will be treated to allow suspended solids to settle out before disposal.

4.6.12 Settlement ponds should be constructed to promote the removal of sediment from site runoff. Ponds should be large enough to ensure sufficient residence time for particulates to settle out, prior to discharge of the water.

Groundwater Management

4.6.13 All water pumped from excavations would be pumped via a pipe and gravel sump in order to prevent sediment being agitated from the base of the excavation and to provide rudimentary filtration to the water prior to abstraction.

4.6.14 For low volume pumping, water would either be pumped into a vegetated area remote from surface water drainage or into a small attenuation lagoon prior to being directed into the drainage system. For high volume pumping (100mm or above) water could be passed through an attenuation tank. The outlet from the tank could be placed directly into site drainage, provided the water is free from sediment contamination.

4.6.15 Sediment laden water will be treated to allow suspended solids to settle out before disposal.

4.6.16 Settlement ponds should be constructed to promote the removal of sediment from site runoff. Ponds should be large enough to ensure sufficient residence time for particulates to settle out, prior to discharge of the water.

Environmental Monitoring

4.6.17 Water monitoring of parameters capturing the potential pollution sources will be conducted across the scheme at appropriate locations to detect any changes in the water environment from the construction phase, and to determine locations for additional new mitigation or maintenance of existing mitigation measures. Also refer to Section 4.7.

4.6.18 A detailed response plan, linked to regular monitoring of identified watercourses/ aquifers will be complied and adhered to.

Severe Weather and Flooding

4.6.19 The contractor should consider the potential impacts of extreme weather events during construction. To ensure resilience of the scheme to such extreme weather events, the contractor should use a short to medium-range weather forecasting service from the Met Office or other approved weather forecast provider to

manage climate-related risks and inform programme management and impact mitigation measures.

4.6.20 The contractor's Environmental Management System (EMS) should consider all measures deemed necessary and appropriate to manage extreme weather events and should specifically cover training of personnel and prevention and monitoring arrangements.

Vehicle and Plant Movements

4.6.21 Haul routes will be regularly inspected and maintained to minimise sediment laden run-off.

4.6.22 During the project's mass haul operation, damping down of the haul roads to minimise dust being generated by plant movements would be required. This would minimise dust pollution causing nuisance to neighbouring properties and businesses along the route of the scheme.

4.6.23 All vehicles, plant and equipment will be regularly inspected and maintained in accordance with manufacturers' recommendations. Records of inspections will be maintained on site.

4.6.24 Areas of hard standing will be provided at site access and egress points, where practicable. The areas will be regularly inspected and cleaned.

4.6.25 Site wheel washing facilities will be established at access and egress points and located away from watercourses and the floodplain. Cleaning will be carried out in a bunded area and wastewater will either be recycled or discharged to foul sewer (with consent from the sewerage undertaker). If unable to be discharged, waste will be removed from site by a licensed waste carrier for disposal to an appropriately licensed facility.

4.6.26 Guidance from GPP13 will be used to put in place good practice for vehicle washing and cleaning.

In-channel working

4.6.27 Any instream works or works close to watercourses will follow GPP5.

4.6.28 Any temporary works to divert watercourses during construction, either by gravity flumes or over pumping will include suitable provisions to pass high flows.

4.6.29 The use of construction materials on site will be free from contaminated material so as to avoid potential contamination of the watercourse.

Storage of Fuels, Oils and Other Chemicals

4.6.30 Spill kits to be available near all points of work and personnel trained in their use.

4.6.31 COSHH store to be bunded and locked when not in use.

4.6.32 In areas of limited footprint, settlement tanks and oil separators will be used to treat contaminated water from the work areas.

4.6.33 Physical barriers to be used to stop material overspill.

4.6.34 No fuels, oils or other chemicals will be stored in high- risk locations such as:

- Within 50 metres of a spring, well or borehole;
- Within 10 metres of a watercourse; or
- Places where spills could enter open drains or soak into groundwater.

4.6.35 Storage tanks for oils, fuels or chemicals will be sited on an impermeable base, surrounded by an impermeable bund, and inspected regularly for leaks. Any valve, filter, sight gauge, vent pipe or ether ancillary equipment must be kept within the bund when not in use. The drainage system of bunded areas shall be sealed with no outlet to any watercourse, pond or underground strata.

4.6.36 Bunded areas will be located on stable and on level ground and located away from watercourses, ditches and drains.

4.6.37 Associated pipework should be situated above ground and protected from accidental damage.

4.6.38 All bulk fuels storage must be contained within a double skinned bowser/container or have a bund. Double skinned tanks or bowsers must also be bunded unless the outer skin would provide secondary containment. The bund must have sufficient volume to contain 110% of the contents of the largest fuel/pipe container or 25% of the total storage capacity of all the containers, whichever is the greater.

4.6.39 All fuel containers, including those containing waste fuels, must be stored on a drip tray/bunded area away from vehicle traffic within a designated storage area, where possible, to avoid damage.

4.6.40 Plant will be regularly inspected, serviced and maintained to minimise the risk of leaks/spills. At the end of each working day, driveable plant will be moved away from watercourses.

4.6.41 Refuelling will be carried out in accordance with PPG7.

Topsoil Stripping and Storage

4.6.42 Wherever possible, topsoil will be left in place to minimise the amount of unprotected ground exposed to runoff. Where topsoil removal is required it would take place as late as possible prior to other works in the area. Topsoil will be stored outside of the floodplain on level areas.

4.6.43 In advance of vegetation clearance and soil stripping operations commencing within 10m of a watercourse, appropriate control measures would be implemented to prevent contamination.

4.6.44 Topsoil stockpiles would be created and managed in accordance with best practice guidance. The sides of stockpiles would be graded to prevent ponding and to help shed rainwater. Exposed stockpiles that are to remain for long periods would be seeded with a standard Rye Grass seed mix immediately upon completion and in

suitable weather conditions. This would minimise soil erosion during the soil storage period and to help reduce colonisation of nuisance weeds.

4.6.45 Silt fencing would be installed around the margins of topsoil mounds to minimise the risk of sediment-laden runoff reaching watercourses.

4.6.46 Cleared land would be reseeded as soon as practicable, to minimise exposed soil and subsequent sediment runoff.

Consents

4.6.47 Depending on the nature of the construction activities, an abstraction licence may be required for de-watering operations. The consenting authority would be Natural Resources Wales. A separate licence may be required for each location or activity.

4.6.48 An Ordinary Watercourse Consent is required for all works carried out over, under or near an ordinary watercourse. Ordinary watercourses include non-main rivers and all ditches, drains, cuts, culverts, dikes, sewers (other than public sewers) and passages through which water flows.

4.7 Soils, Geology and Hydrogeology

General Provisions

4.7.1 It is envisaged that many of the risks identified in relation to the earthworks will be covered by the use of the following measures:

- Dust control measures during the works, wheel washers for any offsite movements, construction of appropriate temporary transport networks within the construction area, covering of loads during on site transport;
- Health and safety training, guidance notes and signs and suitable welfare facilities. Promotion of good hygiene practices implemented for the duration of the works with no smoking, eating, or drinking in the locale of excavations in potentially contaminated areas;
- The use of protective clothing and equipment; appropriate Personal Protective Equipment (PPE) provided to all construction workers. The assessment of risks to construction workers and the provision of appropriate PPE would be the responsibility of the contractor involved in the works;
- Health and safety risk assessments will consider available chemical testing results for soils, groundwater and surface water and will inform identification of adequate mitigation measures;
- An Action Plan for safely dealing with unexpected contamination should be developed. This will include provisions to appoint a suitably qualified and experienced contaminated land practitioner to provide a watching brief and supervisory role should unexpected contamination be encountered. This role shall include assessment of the risks to the construction works and workers. In addition, the Action Plan shall set out procedures for dealing with unexpected

contamination to allow for assessment of identified contamination, review of health and safety provisions, review of remediation/disposal options, identification of measures limiting environmental impact of these materials. This should include sampling and testing of the encountered materials in situ or upon excavation, assessment of risk to the environment, storing contaminated materials in a designated and suitably controlled location i.e. lined and bunded, and appropriate waste disposal procedures;

- Environmental monitoring to ensure environmentally sound working practises are being adopted and adhered to, and allowing for early warning system preventing detrimental impact on the water environment surrounding the scheme. A monitoring plan shall be prepared by the Contractor and agreed with regulators. It should include baseline monitoring, monitoring during and post construction of controlled water receptors identified by a suitable risk assessment.

Site specific measures

4.7.2 Site specific measures will be proposed as the design develops.

4.8 PRoW

4.8.1 A Public Rights of Way Management Plan is to be prepared by PCC and NPTCBC. This is to include details of how PRoW are to be affected, i.e. diversions or closures and whether these would be temporary or permanent. Reasons for any changes to the existing PRoW network are to be provided. Further details to be included are:

- Details of any signage that will be used to identify temporary diversions or closures. This is to include where these signs will be located.
- Safety measures such as fencing will be identified to keep users of PRoW safe;
- Details of how proposed PRoW diversions, closures and will be reinstated; and
- Details of how PRoW will be inspected.

4.8.2 The CEMP will be updated as more details become available.

4.9 Common land

4.9.1 A Common Land strategy is being developed by PCC/NPTCBC which will set out the approach to how the common land would either be exchanged for other suitable land or deregistered with Commoners suitably compensated. The approach has not yet been confirmed and is currently in development. An application under the Common Land Act would be required and is a separate process apart from planning. The CEMP will be updated as more details become available.

4.10 Noise and Vibration

4.10.1 The purpose of this Noise and Vibration section is to set out measures for the Contractor to control and manage noise and vibration from machinery and construction works.

4.10.2 The effects of noise and vibration from the construction site will be controlled by introducing management and monitoring processes to ensure that best practicable means (BPM) are planned and employed during construction.

4.10.3 As part of the contractors' detailed CEMP, a noise and vibration management plan will be prepared and will set out these processes. The plan will include management and monitoring processes to ensure, as a minimum:

- Integration of noise control into the preparation of method statements;
- Ensuring proactive links between noise management activities and community relations activities;
- Preparing details of site hoardings, screens or bunds that will be put in place to provide acoustic screening during construction, together with an inspection and maintenance schedule for such features;
- Developing procedures for the installation of noise insulation or provision of temporary re-housing and to ensure such measures are, where required, in place as early as reasonably practicable;
- Preparing risk assessments to inform structural surveys of buildings and structures which may be affected by vibration from construction;
- Developing a noise and vibration monitoring protocol including a schedule of noise and vibration monitoring locations and stages during construction of the scheme when monitoring will be undertaken;
- Preparing and submitting Section 61 consent applications;
- Undertaking and publishing all monitoring required to ensure compliance with all acoustic commitments and consents; and
- Implementing management processes to ensure ongoing compliance, improvement and rapid corrective actions to avoid any potential non-compliance.

Measures to reduce potential noise and vibration impacts – Best Practicable Means (BPM)

4.10.4 The Control of Pollution Act 1974 and the Noise and Statutory Nuisance Act 1993 contain powers to control noise emission and to require the employment of the best practicable means for preventing or counteracting the effect of noise.

4.10.5 Well defined noise control procedures will be implemented for all construction plant equipment and all site activities. The contractor will comply with BS 5228: Noise control on construction sites and open sites. Noise control measures will include:

- Noisy equipment will be located at furthest practicable distance from properties with provision of temporary screening where possible to reduce construction noise impacts at properties. The contractor will identify optimum positions for noisy equipment and screening to minimize disruption.
- In order to reduce construction vibration impacts at properties, vibratory rollers will not be used within 90m of properties during operation (125m for start-up/run down) unless further

risk assessment and monitoring can demonstrate no likely adverse effect due to vibration. The contractor will undertake further risk assessment prior to works and/or vibration monitoring at the start of works within the stipulated distances to confirm no adverse effects due to vibration.

- All plant and machinery will have effective silencers fitted and kept in good condition.
- Areas of traffic movement will be designed to minimise reversing alarm use principally by the use of one-way systems. However where reversing is required the use of broadband reversing alarms is recommended.
- Natural features and buildings will be used to minimise noise from construction works where practical.
- Noise levels can be predicted from knowledge of the type and number of plant to be used for various activities.
- Noise from standard construction plant is of short duration therefore impact is minimised.
- Construction activity will typically be confined to 08.00-18.00 hours, Monday to Friday and 08.00-13.00 hours on Saturdays.
- Where working is reqruied outside of the above hours for safety or engineering practicability reasons, the works to be carried out during these extended hours will be discussed and agreed with the local Environmental Health Officer in advance of the works commencing.
- During the construction phase, haul roads will be maintained and kept as smooth as possible and maintain them to reduce vibration impacts caused by heavy plant movement.

4.10.6 If situations arise where despite the implementation of BPM, the noise exposure levels exceed the criteria defined in **Table 1**, the contractor may offer:

- Noise insulation; or ultimately
- Temporary re-housing.

Section 61 consents

4.10.7 The contractor will seek to obtain consents from the relevant local authority under Section 61 of the Control of Pollution Act 1974 for the proposed construction works, excluding non-intrusive surveys. Applications will be made to the relevant local authority for a Section 61 consent at least 28 days before the relevant work is due to start or earlier if reasonably practicable.

4.10.8 Details of construction activities, prediction methods, location of sensitive receivers and noise and vibration levels will be discussed with the relevant local authority, or authorities, both prior to construction work and throughout the construction period. Prediction, evaluation and assessment of noise and vibration as well as discussion between the employer's representative and its

contractor and the relevant local authority will continue throughout the construction period.

4.10.9 Unless otherwise agreed with the relevant local authority, noise levels will be predicted in accordance with the methods set out in BS 5228 – 1.

4.10.10 All construction noise levels will be predicted or measured at a distance of 1m from any affected eligible facade, which must have windows to bedrooms or living rooms.

4.10.11 Annex A of BS 5228-1 provides a flow diagram demonstrating the process of a Section 61 application.

4.10.12 The contractor will seek to agree with local authorities a common format and model consent conditions for Section 61 applications or any dispensations and variations to an existing consent.

4.10.13 The contractor will use BPM to minimise the extent to which noise insulation work or temporary re-housing of occupiers of dwellings adjacent to the works needs to be considered.

4.10.14 Notwithstanding the measures set out here and any Section 61 consents, noise insulation or temporary re-housing will be offered to qualifying parties when:

- noise levels are predicted or measured by the contractor to exceed the relevant trigger level defined in Table 1 below at that property for at least ten days out of any period of fifteen consecutive days or alternatively 40 days in any six-month period;
- the property complies with all other requirements of the Noise Insulation (Amendment) Regulations 1988;
- the property is lawfully occupied as a permanent dwelling; and
- in respect of insulation, noise insulation does not already exist that is of an equivalent standard to that which would be allowed for under the Noise Insulation (Amendment) Regulations 1988.

Table 1 Noise thresholds for noise insultation/temporary re-housing

Day	Time (hrs)	Average period, T	Noise insultation trigger level $L_{pAeq, T}$ (dB) */**	Temporary re-housing trigger level $L_{pAeq, T}$ (dB) */**
Monday-Friday	07:00-08:00	1 hr	70	80
	08:00-18:00	10 hrs	75	85
	18:00-19:00	1 hr	70	80

	19:00-22:00	1 hr	65	75
Saturday	07:00-08:00	1 hr	70	80
	08:00-13:00	5 hrs	75	85
	13:00-14:00	1 hr	70	80
	14:00-22:00	1 hr	65	75
Sunday and public holidays	07:00-22:00	1 hr	65	75
Any day	22:00-07:00	1 hr	55	65

*Proposed Scheme construction sound only. Trigger levels are defined as 1m in front of the closest façade of a habitable room.

**Where the current ambient noise level is greater than the noise insulation trigger level:

- the ambient noise level shall be used as the noise insultation trigger level, and
- the ambient noise level +10 dB shall be used as the temporary rehousing trigger level.

4.10.15 The contractor will consider at its discretion applications supported by evidence for noise insulation or temporary rehousing from occupiers who may have special circumstances. Special circumstances could include night workers, those working in home occupations, local businesses or buildings that provide community facilities requiring a particularly quiet environment and those with a medical condition which will be seriously aggravated by construction noise, and provide noise insulation or temporary rehousing where it is demonstrated that this is necessary.

4.11 Traffic Provisions

General Provisions

4.11.1 A CTMP will be prepared that outlines a range of measures to minimise potential traffic impacts arising from the construction of the GCRE development proposals. It is anticipated that the CTMP will be secured via a planning condition.

Site Specific Measures

4.11.2 The CTMP will be reviewed and updated in line with the construction programme and is anticipated to include details of the following:

- Designated construction traffic routes to avoid disruption on local roads;
- Temporary traffic control measures, where required, such as temporary traffic signals and Banks persons;
- Heavy Good Vehicle (HGV) movements will be restricted as far as reasonably possible so as to avoid peak traffic flow periods (08:00-09:00 and 16:30-18:00);
- Temporary and permanent site access proposals, alongside an access management strategy to avoid potential traffic congestion in the peak hours;
- Speed limits shall be put into place on site for all vehicular movements;
- Sufficient parking and circulation will be provided within the site to avoid impacts on the neighbouring highways nuisance car parking;
- Where appropriate, all vehicles carrying loose material shall be covered;
- A wheel wash facility shall be used for vehicles egressing the site;
- Where necessary, use of road sweepers shall be incorporated to ensure highways remain clear of dust and mud;
- Road edges and pathways shall be swept by hand and damped down as necessary;
- Stockpiles to be damped down enclosed or covered as appropriate, be sealed or sprayed with chemical bonding agents as required, and located away from any sensitive receptors wherever possible; and
- Neighbouring communities and businesses will be consulted and kept informed of the traffic management proposals.

4.12 Climate Change

General Provisions

4.12.1 Due to the short temporal phase of construction, it is assumed that the mitigation measures put in place by this CEMP would take into account current weather events and the impacts of climate change already being experienced in the UK.

4.13 Air Quality

General Provisions

4.13.1 The air quality assessment carried out for the proposed development, as presented in the ES, has identified "medium" for dust soiling, "negligible risk" for human health and "low risk" for ecological impact during construction. As a result, the appropriate mitigation measures relevant to the risks of the site have been identified in the ES. These mitigation measures are in line with the recommendations from the Institute of Air Quality Management (IAQM) guidance and are set out below.

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Display the name and contact details of person(s) accountable for air quality and dust issues on the proposed development boundary. This may be the environment manager/engineer or the site manager;
- Display the head or regional office contact information; and
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections.

Site management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked; and

- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log-book.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked; and
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Preparing and maintaining site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose specific operations where there is a high potential for dust production and the site is actives for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable;
- Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the

nominated undertaker and with the agreement of the local authority, where appropriate);

- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste management

- Avoid bonfires and burning of waste materials.

4.14 Activity specific mitigation measures

Demolition

- Ensure effective water suppression is used during demolition operations;
- Avoid explosive blasting using appropriate manual or mechanical alternatives; and
- Bag and remove any biological debris or damp down such material before demolition.

Construction

- Avoid scabbling (roughening of concrete surfaces) if possible; and
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;

Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Record all inspections of haul routes and any subsequent action in a site log book; and
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

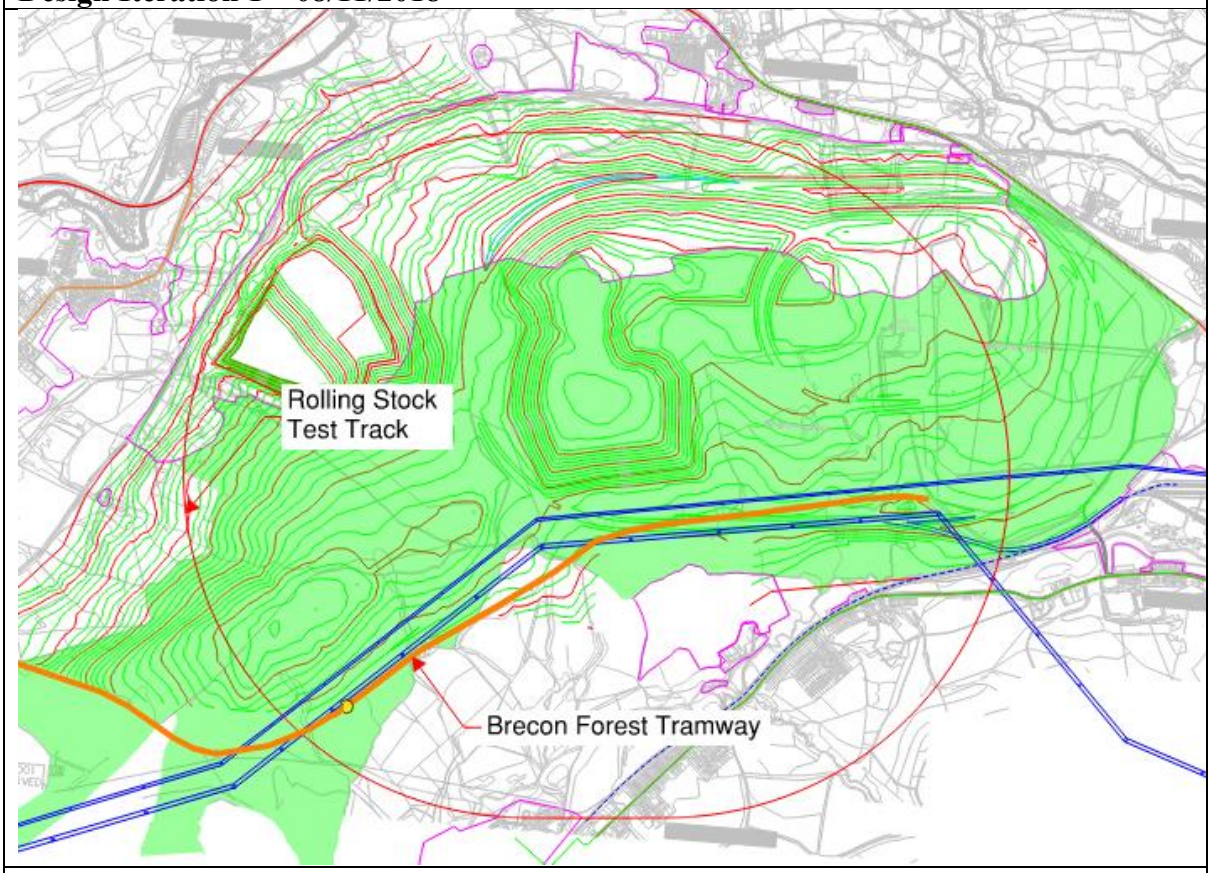
Appendix 4A

Design Iterations

GCRE – Track Layout Options Assessment

Note: when referring to line speeds within this assessment, the quoted speeds are for non-tilting trains, in accordance with NR/L3/TRK/2102.

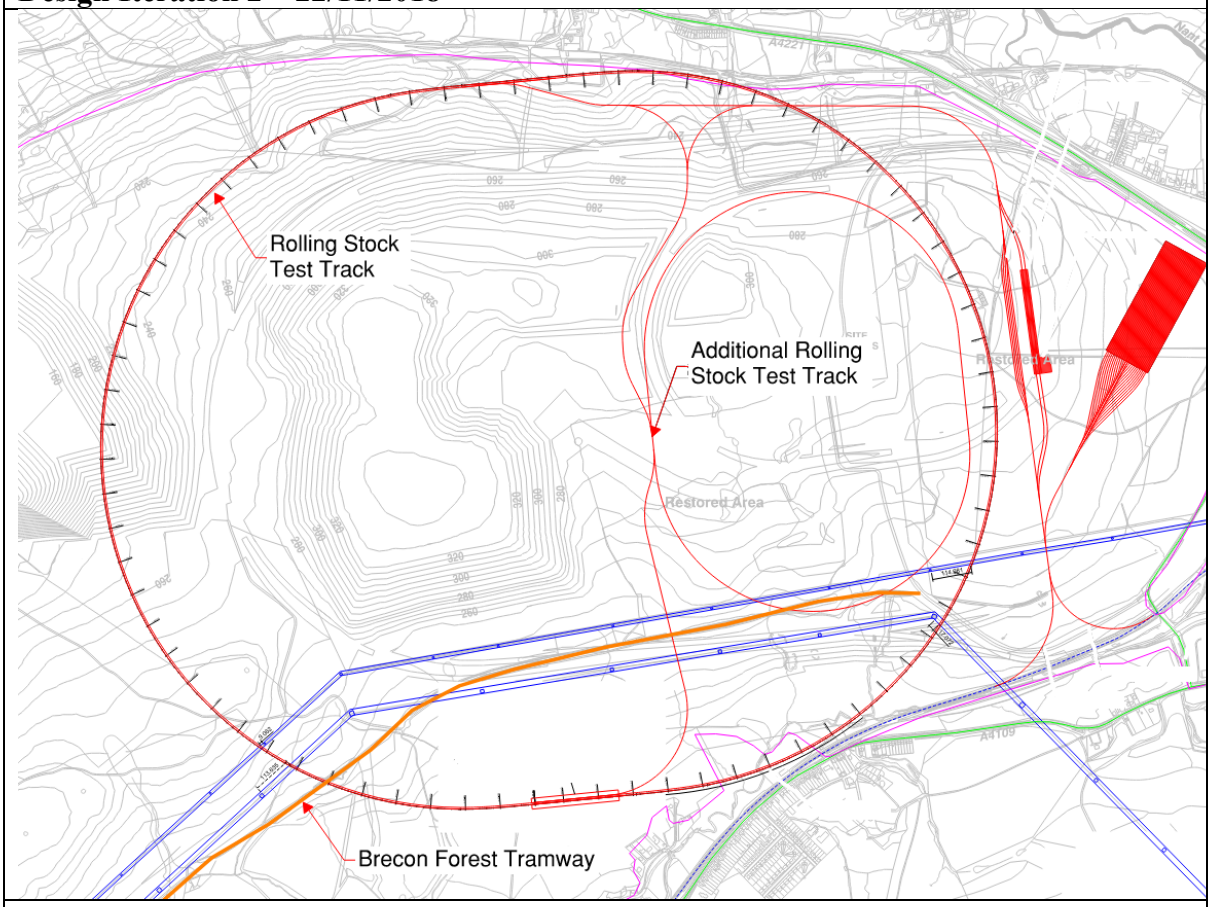
Design Iteration 1 – 08/11/2018



The purpose of the initial design options was to demonstrate the spatial requirement for railway test tracks of various speeds. Options were produced for line speeds of 80 – 125mph.

Design Principles:	**Limiting Factors:**
• Option achieved 125mph, using Exceptional NR design values. • Welsh Government stressed their desire to maximise line speeds. • Bi-symmetrical loop with 1450m radius curves with 180mm cant.	• Clashes with multiple residential clusters (Seven Sisters, Dyffryn Cellwen, Caehopkin). • Enormous infrastructure costs associated with proposal. • Clashes with WPD & National Grid overhead lines.

Design Iteration 2 – 22/11/2018



Formalised drawings produced for initial steering group meetings. Additional ancillary facilities shown for context. Suite of options produced for track line speeds between 80 - 125mph (105mph shown above). Options were taken to a constraints workshop held 11/12/2018, which was used to refine the feasible options for further development to the 80, 95 & 105mph loops.

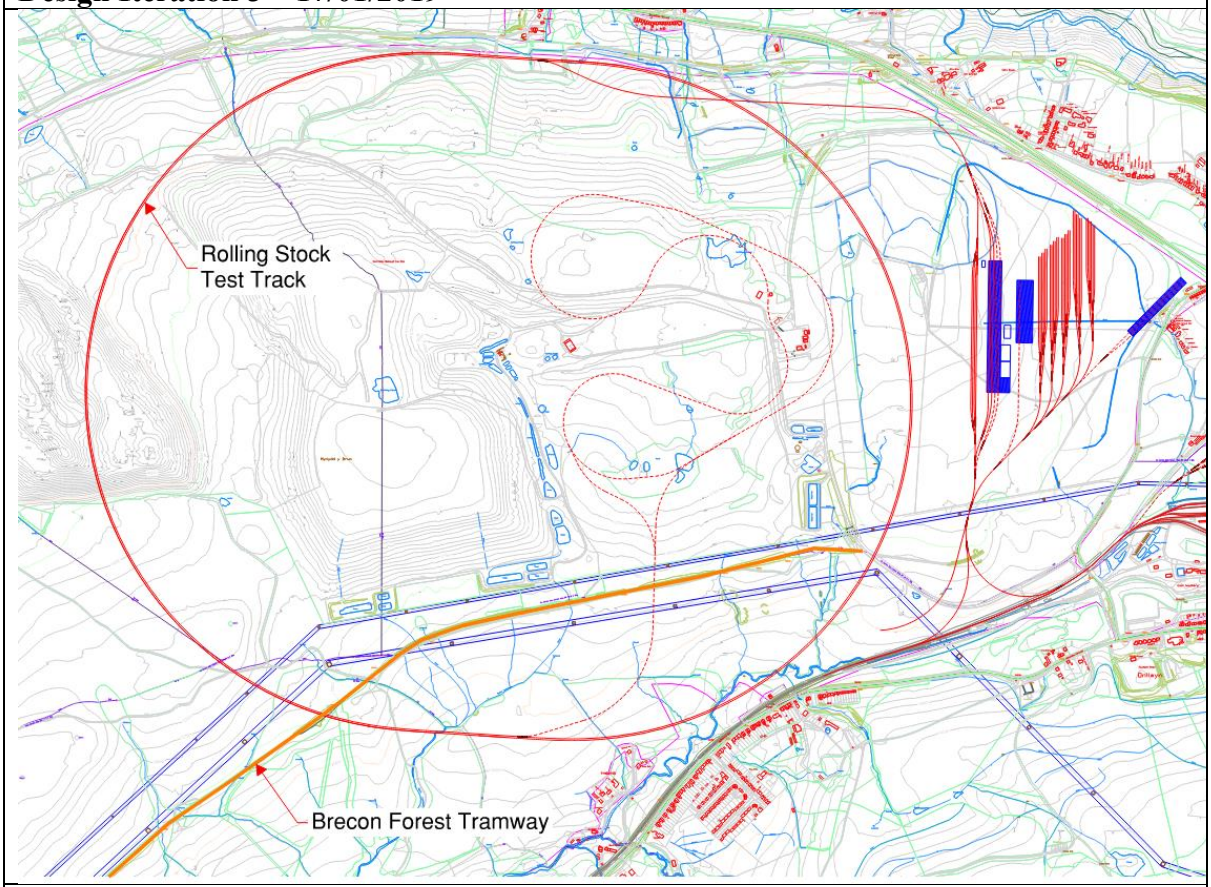
Design Principles:

- Option achieved 105mph, using Exceptional NR design values.
- Welsh Government wished to maximise line speeds as much as practicable.
- Bi-symmetrical loop with 1030m radius curves with 180mm cant.
- Additional internal loop with 60mph line speed for additional rolling stock testing.
- Ancillary features (reception sidings, branch line connection, stabling sidings and maintenance shed) shown.

Limiting Factors:

- Encroaches on multiple residential clusters (Seven Sisters, Dyffryn Cellwen, Caehopkin). Required track level means for significant earthworks, affecting said clusters.
- Enormous infrastructure costs associated with proposal.
- Clashes with WPD & National Grid overhead lines.
- Single-directional access onto loop limits operational flexibility.
- Largest options are too constrained / intrusive for future design consideration.

Design Iteration 3 – 17/01/2019



A result of the constraints workshop held 11/12/2018 was that Welsh Government wanted to maximise the achievable line speed of the test track. Subsequently, the 80mph option was dropped, leaving 95 and 105mph. Additional emphasis on potential business case around separate storage facility for Angel Trains fleet. Next suite of sketches shows additional sidings north of Onllwyn Distribution Centre and loops within the loop (conception of the 'Squeal track'). This stage saw the initial development of earthworks models to show extents of embankments / cuttings.

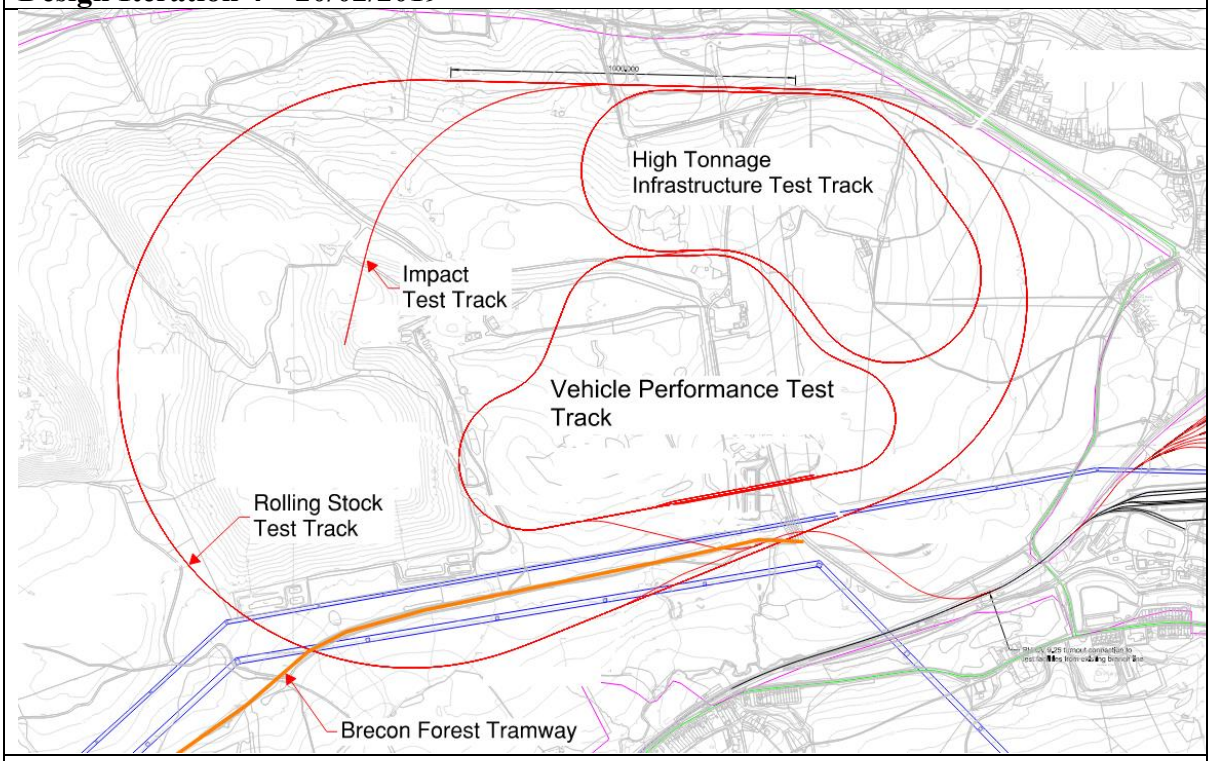
Design Principles:

- Option achieved 105mph, using Exceptional NR design values.
- Welsh Government wished to maximise line speeds as much as practicable.
- Bi-symmetrical loop with 1030m radius curves with 180mm cant.
- Internal 'squeal track' developed with extreme track geometry for testing of rolling stock in limiting conditions (high gradients / tight curves etc).
- Additional warm storage sidings provided for the storage of Angel Trains fleet – as per Welsh Government's request. Circa. 300 vehicle capacity.

Limiting Factors:

- Encroaches on multiple residential clusters (Seven Sisters, Dyffryn Cellwen, Caehopkin). Required track level means for significant earthworks, affecting said clusters.
- Enormous infrastructure costs associated with proposal.
- Clashes with WPD & National Grid overhead lines.
- Single-directional access onto loop limits operational flexibility.
- Location of sidings North of Onllwyn Distribution Centre is unsuitable and beyond agreed project red-line boundary.

Design Iteration 4 – 20/02/2019



Following multiple industry engagement sessions held January 2019, the most pertinent feedback was that maximising the line speed was not a necessity for the viability of the scheme. The 105mph option was dropped because of the earthwork implications and impacts on surrounding communities. Industry engagement provided clarity over importance of various facilities. Inclusion of multiple additional tracks within rolling stock test track.

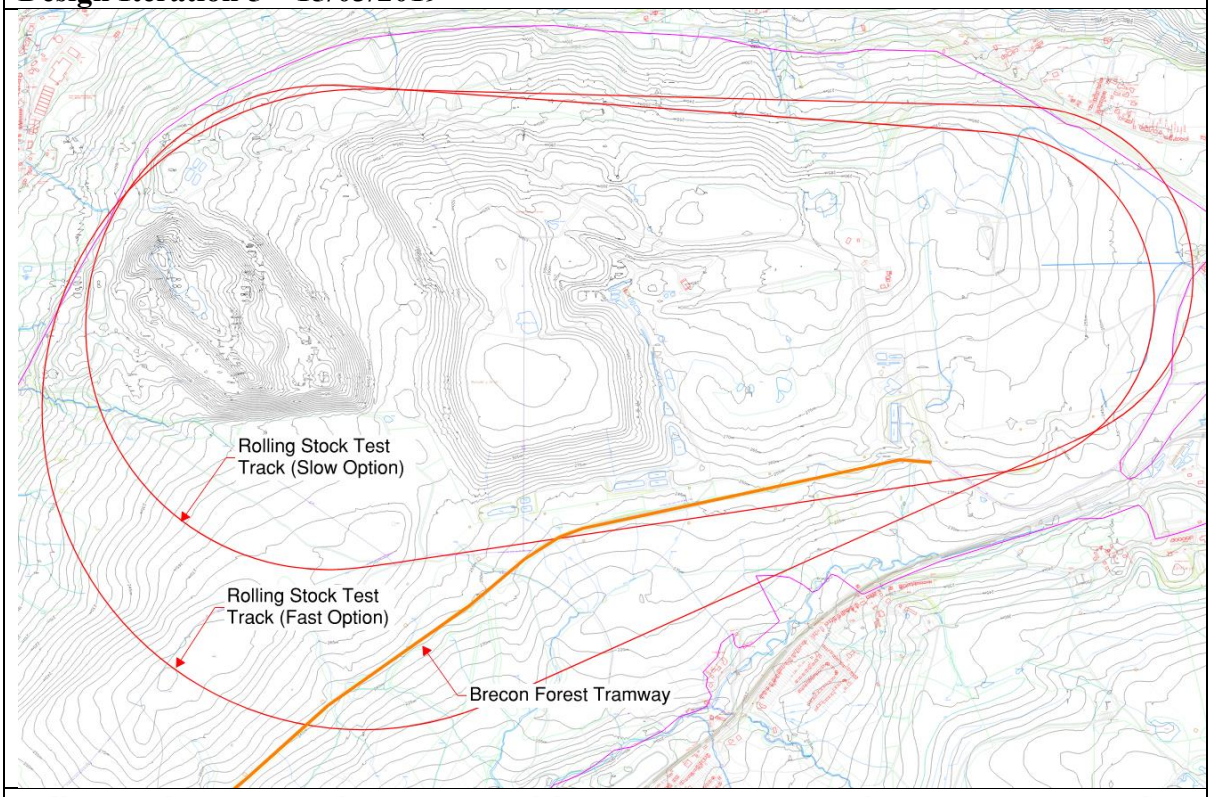
Design Principles:

- Position / size of track a combination of maximising rail performance capacity and earthworks cut / fill balance.
- Rolling stock test track with 1000m straight lengths for brake testing.
- Curves of 840m and 600m – eastern curve reduced to limit cut / fill earthworks imbalance.
- Achieves line speeds of 95mph and 80mph through curves.
- Additional impact testing track – resultant of industry engagement.
- Additional infrastructure testing track – resultant of discussion with Network Rail.
- Additional facilities provided in washery area as a result of industry engagement – rolling stock decommissioning and R&D centres.

Limiting Factors:

- Clashes with WPD & National Grid overhead lines.
- Single track connection onto test tracks limits operational flexibility (not possible to provide delta junction onto rolling stock test track).
- Connecting track required to pass beneath rolling stock test track – unviable level difference and associated track gradients of connecting track.
- Location of sidings North of Onllwyn Distribution Centre is unsuitable and beyond agreed project red-line boundary.
- Varied topography at North (infrastructure test track location) means for unfeasible cut / fill.

Design Iteration 5 – 15/03/2019



Following discussion with Siemens, Welsh Government instructed Arup to investigate the feasibility of providing straights of minimum 2140m. This is the length required to undertake brake testing on the entire Siemens fleet.

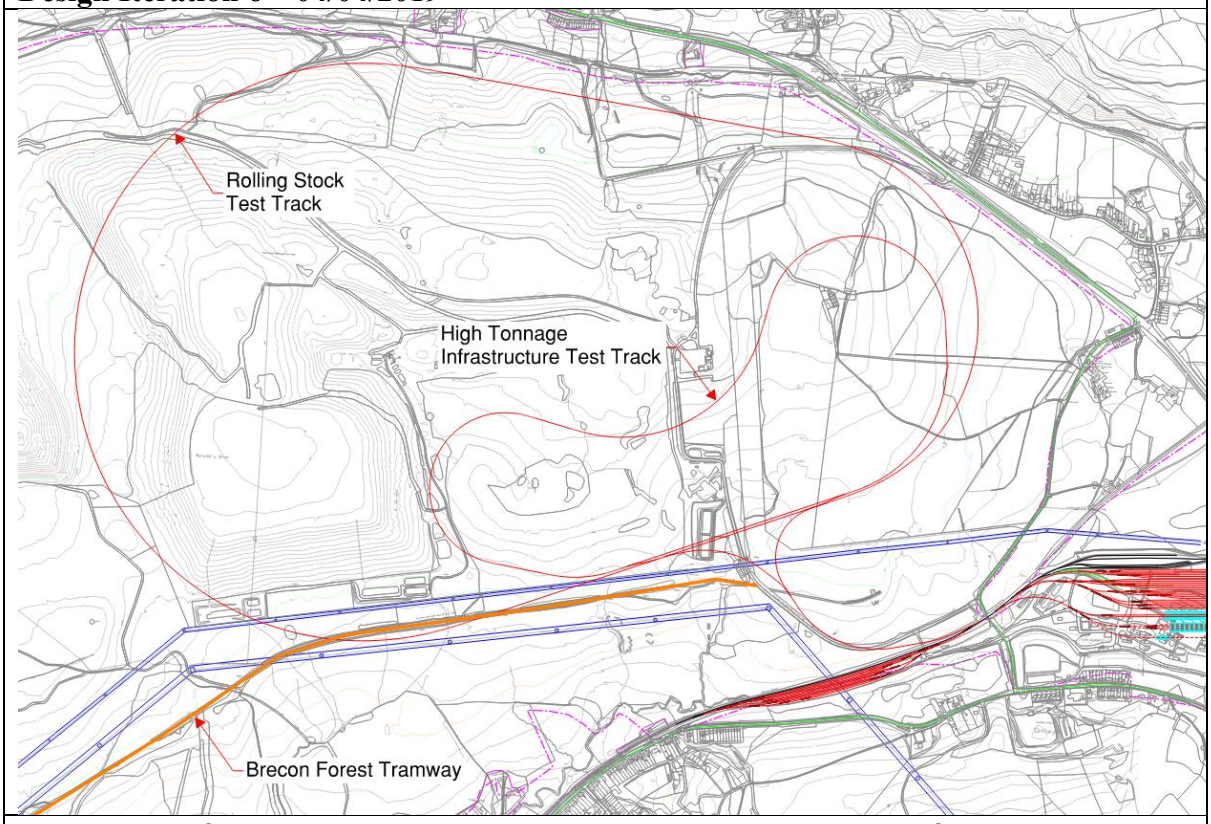
Design Principles:

- Provision of sufficiently long straights for the testing of Siemens trains.
- Test tracks of varying geometry – one track has curves of 840m & 600m radii (as per design iteration 4) and the other has curves of radii 600m & 680m.

Limiting Factors:

- Encroaches on multiple residential clusters (Seven Sisters, Dyffryn Cellwen, Caehopkin). Required track level means for significant earthworks, affecting said clusters.
- Enormous infrastructure costs associated with proposal.
- Clashes with WPD & National Grid overhead lines.
- Single-directional access onto loop limits operational flexibility.
- Options are too constrained / intrusive for future design consideration.

Design Iteration 6 – 04/04/2019



Introduction of the phased construction principles. Both the vehicle performance test track and impact test tracks were omitted. The eastern curve radius was reduced for operational and earthworks purposes. Relocation of washery facilities and inclusion of additional features in the area, based on conversations with multiple stakeholders (TrenItalia & Deutsche Bahn).

Design Principles:

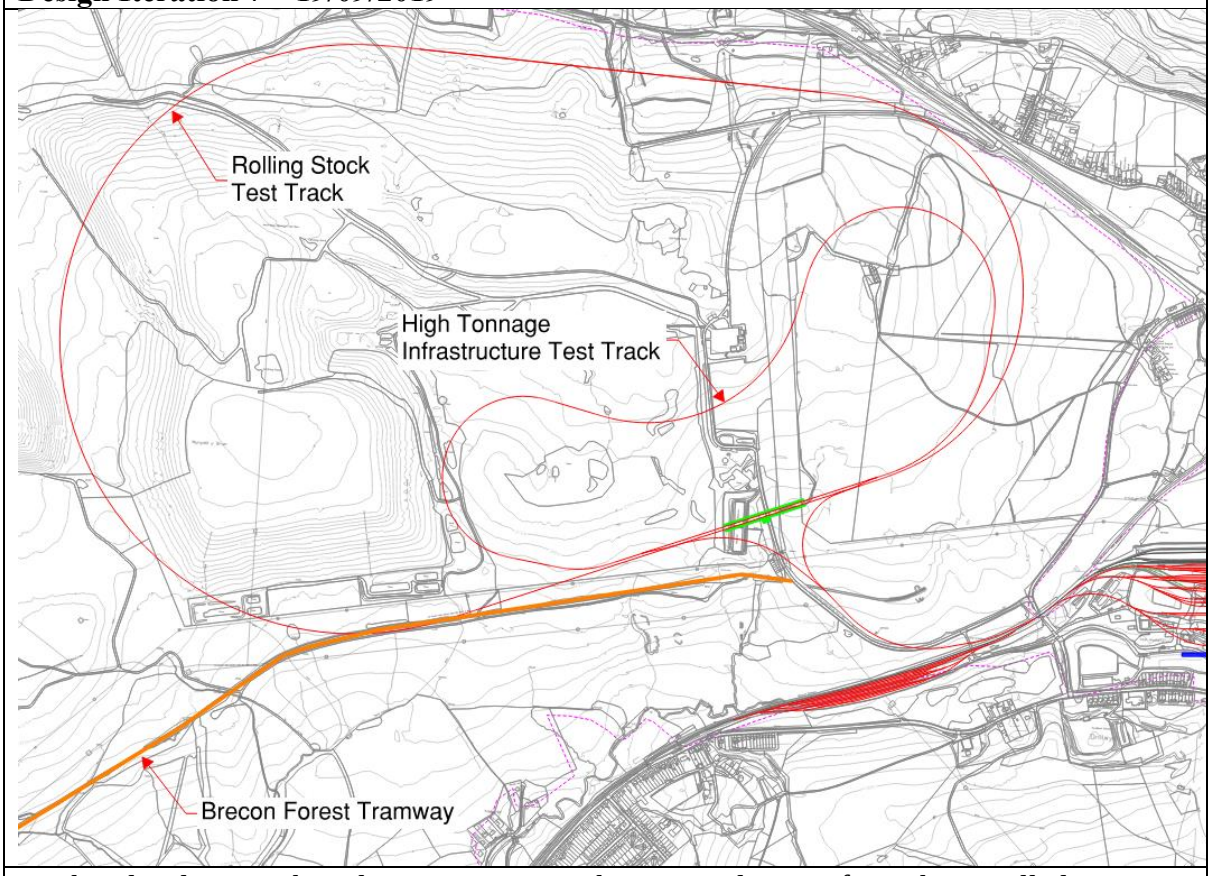
- Orientation of rolling stock test track adjusted for betterment of cut / fill balance.
- Radius of eastern curve reduced to 530m, reducing the line speed through the curve to 75mph – this reduction had multiple benefits:
    - Gained the ability to provide a delta junction onto the rolling stock test track, improving operational flexibility;
    - Allows the connecting track from the branch line to avoid clashing with the overhead lines.
- Branch line connecting track length maximised by moving connecting S&C to Onllwyn Rd overbridge, improving achievable track level and subsequent cut / fill balance. This was

Limiting Factors:

- Further reduction of rolling stock test tack line speed.
- Rolling stock test track line speeds based on 180mm of applied cant, which is atypical of the UK rail network. Typically, 150mm is the highest designed value.
- Limited flexibility of movement for trains within washery area. Single-directional access to / from maintenance shed could be limiting.

also aided by the eastern curve radius reduction. • Relocation of all washery facilities to South of existing sidings. • Increased length of maintenance shed to provide capacity for 400m trains. • Additional warm storage sidings provided South of branch line in currently unused area of land (which has historic rail-freight use). • Inclusion of carriage wash facility. • Removal of impact test track and vehicle performance test because of inviable existing topography and limited business case. Relocation of infrastructure test track to improve cut / fill balance.	

Design Iteration 7 – 19/09/2019



Further development based on construction phasing. Inclusion of winch-propelled test track. Further manoeuvring of rolling stock test track. Additional connecting track in washery area.

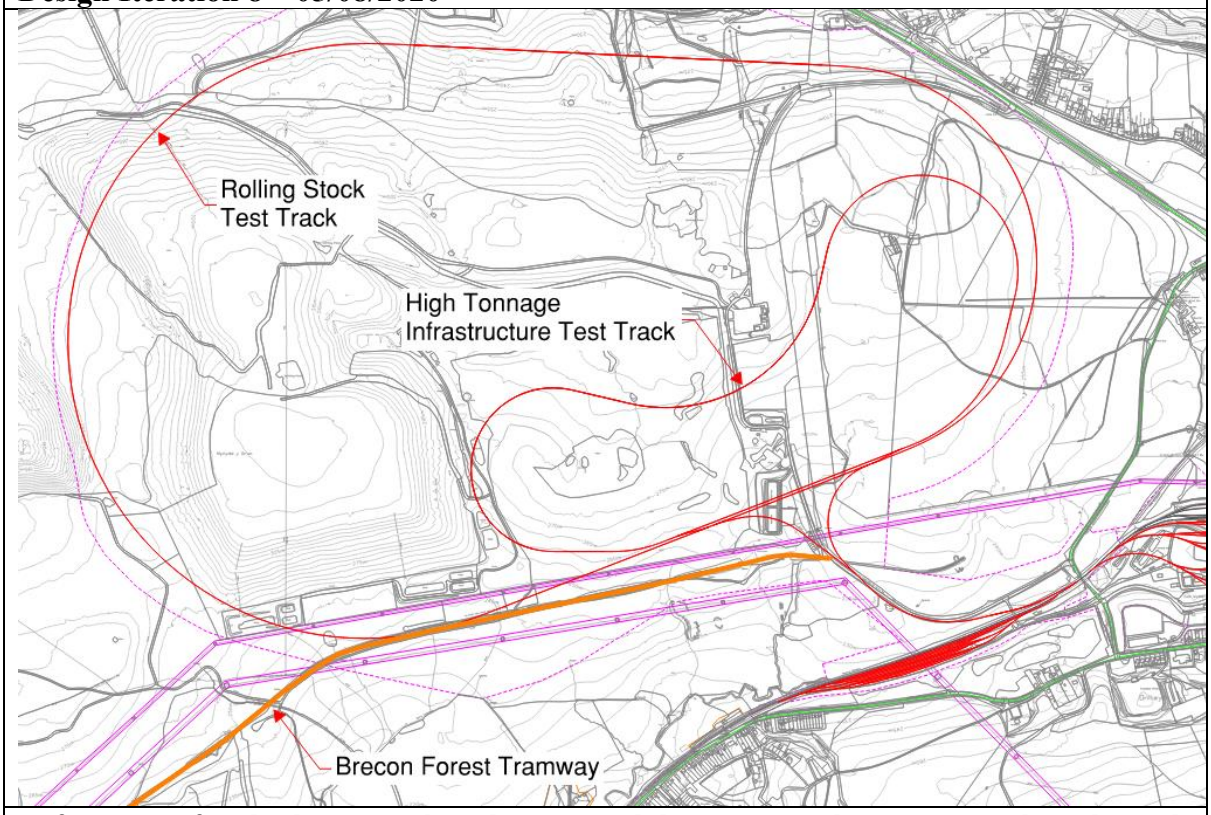
Design Principles:

- Rolling stock test track rotated to improve cut / fill, by matching topography along the northern straight as much as possible. Geometry consistent with design iteration 6.
- Winch-propelled facility added as a means of infrastructure testing during / prior to construction of main test tracks.
- Additional headshunt provided to rear of maintenance shed for improved flexibility of movement between washery facilities.
- Maintenance shed rationalised to provide 400m servicing length on 2 roads, and 230m on alternate 2 roads, based on the likelihood of having 4x 400m trains at the facility simultaneously.

Limiting Factors:

- Headshunt location potentially problematic for vehicle access into the site. Location also clashes with multiple animal habitats.
- Connecting track onto test tracks is of significant gradient (1:50) which could be problematic for long trains, in particular freight locos accessing the infrastructure test track.
- Rolling stock test track line speeds based on 180mm of applied cant, which is atypical of the UK rail network. Typically, 150mm is the highest designed value.

Design Iteration 8 – 05/08/2020



Refinement of multiple aspects based on internal discussion with Arup Geotechnical, Civil and Environmental teams. Construction phasing updated – Phase 1: Infrastructure Testing, Phase 2: Rolling Stock Testing, Phase 3: Aspirational Inclusions.

Design Principles:

- All test track geometry is as per previous design iteration.
- Connecting track length maximised to increase test track levels as much as possible, to best-suit existing topography.
- Winch-propelled facility omitted in-line with updated phasing approach.
- Headshunt alignment adjusted to avoid existing water courses and animal habitats. Alignment follows trace of historic railway.

Limiting Factors:

- Current design.
- Multiple clashes with existing watercourses and habitats.
- Proposed connecting track onto test tracks is of a significant gradient.

Appendix 6A

Desk Study

Welsh Government

Land at Nant Helen and Onllwyn Coal Washery

Geotechnical and Geoenvironmental Desk Study

Issue | 18 December 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 264904-00

Ove Arup & Partners Ltd
4 Pierhead Street
Capital Waterside
Cardiff CF10 4QP
United Kingdom
www.arup.com

ARUP

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1 Introduction

The Welsh Government is considering the development of a rail testing facility in South Wales. The aspiration is for the development of a nationally significant rolling stock and infrastructure testing facility (Hereafter referred to as the 'proposed development').

Celtic Energy's Nant Helen site and Onllwyn Washery, immediately to the north of Onllwyn village, has been identified as a potential site for the proposed development. The site is currently an operational opencast coal mine and coal washery. The proposed development would allow the site to be re-purposed once the opencast mining activities have ceased and the site has been restored.

Arup have been commissioned by the Welsh Government to undertake a desk study assessment for the proposed site near Onllwyn in Powys. This desk study includes a summary of the site's history and ground conditions, including topography, geology, hydrogeology, hydrology and the coal mining legacy at the site. A preliminary conceptual site model and preliminary engineering assessment is then presented, together with a summary of the identified geotechnical and geo-environmental risks and opportunities and recommendations for further work.

It is envisaged that 7km of cuttings and embankments will be constructed in two loops. Based on the complex topography of the site, the cuttings and embankments will likely require significant cut (~30m) and fill (~40m) earthworks to form the embankment level.

In addition to the track loops, it is envisaged that a platform environment, facilities for rail storage, train decommissioning areas and educational activities will also be included as part of the developed works. These are likely to be located both within the Nant Helen site and within the portion of the site currently occupied by the Onllwyn Washery.

2 Sources of Information

The following sources of information have been reviewed in the preparation of this report:

- British Geological Survey (BGS) published geological and hydrogeological mapping
- British Geological Survey (BGS) online GeoIndex viewer
- Published environmental information (Lle)
- Information contained within the 2011 Nant Helen Extension Environmental Statement
- Historical aerial photographs (Welsh Government)
- Historical and present-day mapping sets (Groundsure)
- Opencast completion plans and select underground working abandonment plans (provided by Celtic Energy)
- Groundsure EnviroInsight and GeoInsight reports
- Coal Authority online viewer
- Coflein, National Monuments Record of Wales

3 Site Location and Description

The Celtic Energy Nant Helen site is located approximately 20km north-west of Swansea, immediately south of the Brecon Beacons National Park (refer to Figure 1). The plan area of the site covers approximately 500 hectares and is located between the A4109 to the south, and the A4221 to the north-east To the north the site is bounded by an area of forestry and by forestry access tracks from the Brecon Road to the north-west. The majority of the site is located within the Powys county boundary however the southern boundary of the site lies along the Powys/Neath-Port Talbot county border and a small portion of the site lies within the county of Neath-Port Talbot.

The site boundary is shown on Figure 2. For ease of identification, throughout the report the site (as a whole) has been split into the main and the "washery" portions. The main portion refers to the central body of the site which contains the proposed rail test track whereas, the "washery" portion refers to the extension of the site to the southeast incorporating the Onllwyn Washery.

The topography of the site is shown on Figure 2. The northern site boundary starts at ~250m AOD in the north-western corner before dropping in an easterly direction to ~195m AOD. The land then climbs back up to the eastern arc of the site boundary which approximately follows the 250m AOD contour line. The southern site boundary also approximately follows the 250m AOD contour line and locally drops to ~235m AOD. The western arc of the site boundary rises up from 250m AOD in the south to 270m AOD in the south-western corner.

The topography of the site generally rises inwards from the site boundary. The central portion of the site sits at around 280m AOD with localised peaks reaching approximately 295m AOD. The "washery" portion of the site sits lower than the main portion of the site at roughly 230mAOD.

The Celtic Energy Nant Helen site is currently being used as an active open cast coal mine. The extreme west of the site contains the Nant Helen Extension opencast working which is typically 150m lower than the surrounding ground surface at its deepest point (refer to Figure 2). A series of access tracks are present across the site. These access tracks connect the current open cast workings in the west with the Onllwyn Washery located in the east of the site. The washery site accessed from the A4221 via a separate entrance, and is comprised several buildings, conveyer belts and material sorting facilities.

The central portion of the main site is dominated by a large 'Overburden Storage Area'. The overburden storage areas are understood to be spoil heaps placed above the natural ground level. The maximum height of the spoil material is understood to be approximately 80m above the natural ground surface.

3.1 Site Walkover

A site walkover was undertaken by an Arup geotechnical engineer on 28th November 2018 with a representative from Celtic Energy. Pertinent site walkover photographs are presented in Appendix A which should be referred to throughout

this section. Refer to Figure 3 for the approximate locations of the site walkover photographs.

The images presented in Appendix A include Photograph 1 showing the large overburden storage area. Photograph 3 shows the current Nant Helen Extension opencast site. Photographs 3, 4, 5 and 6 show examples of the material excavated during the opencast mining activities.

Photograph 1 was taken facing approximately NNW and shows the southern face of the large overburden storage area centrally located within the site. Photograph 1 also shows the electricity pylons that cross the southern portion of the site; the route of which is indicated on Figure 3.

Photograph 2 was taken facing approximately eastwards and shows a small pond type feature which is located on the current proposed track route. The western slope of the large overburden storage area is shown behind the pond feature.

Photograph 3 was taken facing northwest and looks down into the current Nant Helen Extension opencast mine extent. The depth of the excavation is evident (~150m) and a large lake feature is present at the base of the excavation. Assuming backfilling activity has been undertaken as shown by the batter slopes shown on the right-hand side of the photograph.

Photographs 3, 4, 5 and 6 show examples of the material excavated during the opencast mining activities. The material shown is predominantly gravel sized with larger cobble and boulder sized inclusions. Evidence of fracturing is present on many of the larger inclusions. The material is anticipated to be mudstone/siltstone and is dark in colour. This material is anticipated to be the non-coal bearing arisings excavated during the opencast mining activity and is likely to be indicative of the material used to backfill the opencast sites post completion.

Photograph 5 is facing roughly eastwards and shows the coal haul route running eastwards towards the centrally located site compound and offices. The land rising to the south (right-hand side of the photo) is the northernmost extent of the overburden storage area. The current proposed track route is anticipated to run eastwards from this point running through the southern edge of the forestry shown on the left-hand side of the photograph.

Photograph 6 is facing approximately ESE and is located along the coal haul route. The photograph shows the various stockpiles either side of the roadway. From review of the site context figure provided by Celtic Energy (Appendix H), this area is the coal stocking area. The coal stocking area is located atop the backfilled extent of the original Nant Helen opencast site. The site compound and offices are located over the horizon shown on photograph 6.

Photograph 7 shows four cylindrical tanks located to the northwest of the site compound and offices. These tanks display flammable warning signs and are anticipated to be fuel tanks used for the various motorised plant vehicles. A large motorised plant vehicle is shown to be parked behind the tanks.

Photograph 8 was taken facing NW and looks out over the eastern half of the main portion of the site. The land is shown to rise gently towards the northwest

with the forestry that borders the northern half of the site shown to be present lining the horizon on the left-hand side of the photograph.

Photograph 9 is facing approximately eastwards and looks back towards the Onllwyn washery site. The washery infrastructure is shown in the background with a large pond shown in the foreground beyond the road.

Photograph 10 is facing NW and looks in towards the centre of the site. The photograph shows the eastern extent of the electricity pylons and the left-hand portion of the horizon marks the anticipated southern extent of the second Onllwyn opencast site (refer to Section 9).

4 Site History

Historical features and constraints have been identified through a review of historical mapping sets (1876 - 2019) and historical aerial photography (1945 – 2019). The mapping sets have been purchased from Groundsure and are referenced accordingly; the mapping sets cover a range of scales from 1:1,250 to 1:10,560. The aerial photographs have been acquired from Welsh Government and provide a higher level of detail for portions of the site covered. Current online aerially imagery has also been reviewed to supplement the historical sources. The mapping source material reviewed is presented within Appendix B.

In general, the site has been subject to extensive surface and sub-surface coal mining activities over the past century. The majority of relevant features and potential constraints identified are related to the site's coal mining legacy. A detailed review of mining activity is discussed in further detail within Section 9 of this report.

Table 1 below provides a summary of each individual historical source reviewed. Refer to Figure 4, Figure 8 and Figure 9 throughout.

Table 1 – Summary of historical features and constraints

Source	Notable features and alterations
1876 / 1877 Historical Maps	The Gwaunclawdd and Abercrave Collieries are shown to the north of the site with the latter shown to be located within the site boundary. To the south of the Abercrave Colliery, numerous 'Old Quarry' and 'Old Coal Level' features are shown to be located within an area which appears to have been heavily worked. The Neath and Brecon Railway (Junction Line) is shown to run along the northern boundary of the site following a rough east to west alignment. The "Junction Line" forms a network with the Neath and Brecon Railway main line (see paragraph below) and links the Collieries located to the north of Mynydd Drum (Abercrave & Gwaunclawdd) to the Onllwyn Colliery and washery site to the south of Mynydd Drum. To the south of the southern main site boundary, the Neath and Brecon Railway runs from southwest to northeast before crossing into the "washery" portion of the site. The majority of the southern portion of the main site is shown to be undeveloped moorland with localised marshy areas; the marshy areas feed several streams which flow in a southerly direction to converge with the River Dulais. A selection of cuttings and embankments, labelled as an "Old Tramway", is shown to cross the southern boundary of the site running along a rough east to west alignment. Based on review of

Source	Notable features and alterations
	the Transport Trust and Forest Fawr online sources, the Old Tramway believed to have originally formed part of the "Brecon Forest Tramroad". The portion of the tramroad that passes through the site was called the 'Claypon extension' and was constructed circa 1827. The extension linked the existing Brecon Forest Tramroad network, constructed circa 1819, to the "Drum Coal Levels" (located ~500m to the southeast of the site) and to the Swansea Canal. In 1859 the majority of the Brecon Forest Tramroad was incorporated into the Neath and Brecon Railway; however, the Claypon extension, which crossed Mynydd Drum, was abandoned. An 'Old Coal Level (Entrance)' is shown to be located close to the southern boundary of the site. Numerous 'Old Quarries' are located towards the centre of the site, although these are all minimal in size. The washery portion of the site is shown as predominantly undeveloped moorland. A tramway links the Onllwyn Colliery to the Neath and Brecon Railway main line which passes through the washery portion of the site. The tramway initially follows the same alignment (SW to NE) of the Neath and Brecon Railway before spurring off in an easterly direction once past the Onllwyn Station. The tramway then runs along the northern boundary of the washery site before turning to the south east and running along the north-eastern boundary of the washery site towards the Maes-y-marchog Colliery. The land to the north of the washery portion of the site is a marshy area marked as Gors Llwyn.
1901/ 1903 Historical Maps	The Abercrave Colliery has increased in size and an additional colliery, the International Colliery, is shown to be located approximately 100m to the west of the Abercrave Colliery. The area to the south of the Abercrave Colliery is still shown to be heavily worked. Approximately 500m to the east of the Abercrave Colliery an 'Old Tramway' is shown. The tramway links a selection of 'Old Levels' and a singular 'Air Shaft' to the Neath and Brecon Railway (Junction Line). These workings are not named and are not shown on the mapping from 1876/77. The Gwaunclawdd Colliery is now shown in a new location approximately 500m to the east of the original location. The original site now contains an 'Old Shaft' and an 'Old Quarry'. The southern portion of the main site has remained relatively unchanged. However, a tramway is now shown to links a singular coal level to the Dulais Colliery (marked as "Drym Colliery"); an air shaft, believed to be associated with the coal level, is shown to the north of the level (see Figure 8). The Onllwyn Colliery has expanded and moved location to be situated within the site boundary. The Dulais Colliery (marked as "Drym Colliery") is shown within the site boundary to the north of the Neath and Brecon Railway main line which still runs through the washery portion of the site. The tramway identified within the washery portion of the site on the 1877 mapping is still present. A selection of 'Old Coal Levels', 'Old Quarries' and an 'Old Coal Pit' (all not shown on the 1877 mapping) are now present.
1914 Historical Maps	The Abercrave Colliery is shown to have expanded eastwards with a new tramway linking to new drift mine located approximately 400m to the east of the main colliery site. The 'Old Tramway' linking to the 'Old Levels' and 'Air Shaft' identified on the 1901/03 mapping is no longer present. The 'Glynllech Colliery' is now shown immediately to the east of the 'Old Levels' with an associated tramway spurring from

Source	Notable features and alterations
	the colliery in a north-eastern direction linking to the Neath and Brecon Railway (Junction Line). The tramway identified in the southern portion of the main site is no longer present. The remainder of the southern half of the site has remained unchanged. The 'Drym Colliery' is now marked as the 'Dulais Colliery' and has grown considerably with multiple structures located to the north of the Neath and Brecon Railway. The majority of the washery portion of the site has remained unchanged.
1945 Aerial Photographs	Extensive earthworks and stockpiles are shown to be surrounding the collieries along the northern boundary of the site (Abercrave, International, Gwaunclawdd and Glynllech). Two distinct areas containing a number of depressions in the ground surface are shown on the aerial photograph in the southern portion of the site. These areas are in the same location as the coal levels and air shafts identified on the 1876/77 historical mapping sets. The frequency of the depressions is indicative of 'bell pitting' extraction methods refer to Figure 12 Extract from 1945 aerial photography showing potential 'bell pitting' 2 within Section 9.3. The washery portion of the site is shown to have been developed with numerous rail tracks spurring from the Onllwyn Station in an easterly direction. The tramway identified on earlier historical sources is still present. A number of large stockpiles/spoil heaps are shown to be present within the washery portion of the site and to the west of the Onllwyn Colliery.
1948 Historical Maps	The Glynllech Colliery is still shown however the tramway linking the colliery to the Neath and Brecon Railway (Junction Line) is no longer present; this suggests that the colliery is no longer operational. The Abercrave and International Colliery footprints have reduced in size and much of the interlinking rail tracks and tramways are no longer shown. The Gwaunclawdd Colliery is no longer shown. No changes noted within the southern portion of the main site. The Dulais Colliery is now labelled as disused and all the coal mining related infrastructure associated with the colliery that was previously shown is no longer present. The Onllwyn Colliery is still present. A 'Brickworks' is shown to be present within the washery portion of the site. The brickworks is located to the south of the existing rail tracks and assumed 'Washery' infrastructure. An 'aerial ropeway' is shown within the site and is believed to be associated with the spoil heaps shown to be present within the washery portion of the site.
1951 Aerial Photographs	The Abercrave and International Collieries are shown to be present and the area of land previously occupied by the Gwaunnclawdd Colliery has been completely cleared of coal mining infrastructure; the only evidence of the colliery that remains are the earthworks located immediately to the south. The Glynllech Colliery is no longer shown.

Source	Notable features and alterations
	The first evidence of opencast coal mining activity is shown to be present within the southern half of the main portion of the site. These workings appear to have been recently filled are anticipated to be the original Onllwyn opencast site. The workings are shown to intersect the "Old Tramway" identified on the 1876/77 historical mapping; two sections of cuttings along the tramway alignment appear to have been filled with spoil which anticipated to have arisen from two of the opencast sites shown. The Onllwyn opencast sites shown appear to coincide with the locations of the "dimpling" noted from the 1945 photography; as a result, the "dimpling" (possible bell pitting extraction) is no longer shown on the 1951 photography.
1965 Historical Maps	The Abercrave Colliery is still shown on the map, however many of the levels and drifts are labelled as 'disused' and the majority of rail and tramway infrastructure is no longer present. The infrastructure within the washery portion of the site has increased in size and the plan extent of the stockpiles/spoil heaps in the east has grown.
1975 Aerial Photographs	The land previously occupied by the numerous collieries located along the northern boundary of the site appears to have been completely reprofiled with no evidence of the collieries, or the worked land immediately to the south of the collieries, present. This is believed to be the result of the Abercrave/Gwaunton opencast coal mine (refer to Section 9.5). Evidence of earthworks associated with the construction of the A4221 are shown to be located along the north-eastern boundary of the main portion of the site.
1977 Aerial Photographs	A large opencast coal mine is shown to be present in the eastern half of the main portion of the site. This opencast site is anticipated to be the second Onllwyn opencast site and covers a much greater plan area than the original workings. The land to the southwest of the opencast site is covered with numerous stockpiles/spoil heaps. The A4221 is shown to have completed construction and borders the north-eastern boundary of the site. The Onllwyn Colliery is no longer shown to be present. A large stockpile is now shown to occupy the original colliery site. The Neath and Brecon Railway line is still present and links to an extensive network of sidings which spur eastwards into the washery portion of the site. The washery has increased in size and the numerous pond features, shown on the most recent aerial imagery, are now present. The area of land to the east of the washery appears to be in the process of being filled with numerous stockpiles/spoil heaps present.
1985 Aerial Photographs (Colour)	A distinct area of darker land is shown along the northern boundary of the site. This is anticipated to be associated with the backfilling of the Abercrave/Gwaunton opencast site; extensive forestry planting operations appear to have taken place within the areas which have been backfilled. The larger Onllwyn opencast site is shown to have been backfilled with numerous man-made drainage features shown to be present across the surface.
1987 / 1988 Historical Maps	The northern half of the main portion of the site is shown to be covered with forestry. A collection of disused levels and drifts are shown to be present. These are likely to

Source	Notable features and alterations
	have been associated with the Glynllech Colliery. The Onllwyn opencast site is labelled as disused workings. No other major observable changes are shown with regards to the south of the main portion of the site or within the washery portion of the site.
1989 Aerial Photographs	The main site compound is shown to be present centrally located within the main portion of the site. The first evidence of the Nant Helen opencast workings are shown to be present immediately to the west of the site compound. To the west of the opencast workings the "layer cake" overburden storage area is being formed; it is likely that the layer cake was formed with arisings from the original Nant Helen opencast workings. Numerous pond features are present along the southern face of the overburden storage area and along the eastern and western edges of the Nant Helen opencast excavation. From review of the Site Context figure provided by Celtic Energy, see Appendix H, these pond features are labelled as water treatment areas.
1995 Aerial Photographs (Colour)	The Nant Helen opencast excavation has progressed northwards with the existing void having been backfilled. The large overburden storage area, now located to the southwest of the opencast workings, is shown to have been completed to its present extent.
2006 Aerial Photograph (Colour)	The Nant Helen Extension opencast coal mine is shown to extend westwards from the Nant Helen opencast coal mine identified in the 1989 and 1995 aerial photographs. The original Nant Helen opencast void appears to have been filled and the surface is now covered with numerous stockpiles. An access track runs westward through the stockpiles from the site compound to the Nant Helen Extension workings in the west. The site of the original Nant Helen opencast appears to have been restored with a collection of small pond features and areas of vegetation present
2009 Aerial Photograph (Colour)	The Nant Helen Extension opencast coal mine has grown westwards and the original extent has now been partially backfilled with what appears to be site-won material. No other major changes are noted between the 2006 and 2009 aerial photographs.
2019 Online Aerial Imagery	The Nant Helen Extension opencast is shown to have reached its maximum extent. The extent of excavation shown on the 2006 aerial photograph has been backfilled and the majority of the 2009 extent has been partially filled with batter slopes falling westward into the open excavation. The 'washery' portion of the site is shown to contain a varied array of coal processing infrastructure with a limited network of rail lines running along an east to west alignment towards the north of the site. The land to the north and east appears to be artificially raised industrial scrubland with minimal vegetation cover. The land to the south of the washery has a higher degree of vegetation.

4.1 Summary

Although certain areas, particularly the area close to southern boundary of site, have been left relatively undeveloped, the majority of the site is shown to have been impacted by extensive coal mining activity. These activities include both

surface and sub-surface workings and have been identified from the earliest historical mapping to the present day.

Several historical collieries have been identified along the northern and southern boundaries of the site. The majority of the collieries were located on the lower slopes of Mynydd Drum and workings were accessed via both drifts and vertical shafts. The Abercrave and Gwaunclawdd Collieries were present on the earliest historical mapping from 1876/77 and the last evidence of the collieries disappeared following the absence of the Onllwyn Colliery on the 1977 aerial photography (refer to Section 9.4 for greater detail regarding underground mining).

The first evidence of opencast workings was identified on the 1951 aerial photography which showed workings believed to be associated with the first Onllwyn opencast site. The subsequent aerial photographs show evidence of the second Onllwyn, the Abercrave/Gwaunton, the Nant Helen and the Nant Helen Extension opencast sites. The depth and extent of the opencast sites appears to have increased from the shallow workings associated with the first Onllwyn opencast site to the deepest workings associated with the Nant Helen Extension works which are shown on the present day online aerial imagery.

Various rail tracks and tramways are shown to have crossed through and run along the boundaries of the site. The earliest of which was marked as an ‘Old Tramway’ on the historical mapping from 1876/77; from a review of information presented on the Transport Trust [19] and Forest Ffawr online sources [20], this tramway is believed to have formed part of the “Brecon Forest Tramroad”. The section that passes through the site was known as “Claypon’s extension” and was constructed circa 1827. The tramroad is a historically significant site and is a scheduled ancient monument alternatively known as “Tramroad at Ystradgynlais”.

A selection of other short tramways are shown to have been present within the site linking collieries like the Glynllech Colliery to the Neath and Brecon Railway (Junction Line).

The washery portion of the site has contained rail tracks/sidings and tramways since the earliest historical mapping and as the opencast coal mining activity increased towards the end of the 20th century the extent of coal mining washery infrastructure and stockpile/spoil heaps also increased.

5 Published Geology

The geology beneath the site has been interpreted through a review of published geological sources. These sources include the BGS 1:10,560 geological mapping (sheet SN 81 SW) [1], the BGS 1:50,000 geological mapping (Sheet 231) [2] and the BGS GeoIndex online viewer [3]. Refer to Figure 5 and Figure 6 throughout.

5.1 Made Ground

A region of artificial ground is shown to be present in the north of the site; based on review of documents provided by Celtic Energy, this is anticipated to be made ground associated with the backfilling of the Abercrave/Gwaunton opencast coal mine (refer to Section 9.5 for greater detail).

Although not shown on published geological sources, based on the known extent of opencast coal mining across the site, backfill made ground is anticipated to be encountered beneath much of the proposed track route. Based on observations made during the site walkover the material excavated during mining are generally granular (see Photographs 3, 4, 5 and 6).

5.2 Drift (Superficial Deposits)

Geological mapping of superficial deposits at 1:50,000 scale shows that the site is predominantly void of superficial material with only localised areas to the west and south of Devensian Till and an area of peat located centrally within the site. Deposits of Devensian Till and peat are also shown to be present beneath a small section of the washery portion of the site. The Devensian Till is noted to be of glacial origins and is labelled as boulder clay on the 1:10,560 geological map. Glacial till typically comprises a heterogenous mixture of clay, sand and gravel with large cobble and boulder inclusions of various size and shape (diamicton). The 1904 geological memoir for sheet 231 describes the glacial till deposits within the Dulais valley *"…Old Red* (sandstone) *in a stiff bluish matrix* (clay)*"* [4]. Peat typically comprises a partially decomposed mass of vegetation that has grown under anaerobic conditions, usually found in bogs or swamps.

It should be noted that the area of glacial till identified to the west of the site coincides with the known extent of the Nant Helen Extension opencast site (refer to Section 9.5). It is therefore likely that these deposits are no longer present and will have been incorporated within the extensive 'overburden storage areas' formed from the surplus material excavated during opencast mining activity.

The area of peat shown in the centre of the site is also unlikely to be present due to the fact that the plan extent of the peat coincides with the Nant Helen opencast site. It is not known whether these peat materials were stockpiled on site of disposed of offsite.

Given the location shown, the area of glacial till shown to the south is unlikely to have been impacted by the earthworks associated with opencast activities and is therefore likely to remain present.

The geological map shows glacial till deposits to be present in the eastern end of the washery portion of the site. Peat deposits are shown to encroach into the north of the washery site, but it is considered likely that these materials would have been removed from beneath developed areas.

5.3 Solid (Bedrock)

The majority of the site is underlain by solid geology of the South Wales Middle Coal Measures Formation. The remainder of the site is shown to be underlain by South Wales Lower Coal Measures Formation. The South Wales Coal Measures generally comprise rhythmic sequences of mudstones (commonly containing pyrite), siltstones, sandstones, grits, fireclays, seatearths and coals; the coals found in these measures tend to be amongst the thickest and most economically significant in South Wales. According to the geological memoir (Sheet Memoir 231) from 1988, nodular masses of pyrite, up to 0.15m thick, are often present within the Middle and Lower Coal Measures formations [5].

The Middle and Lower Coal Measures reach their maximum thickness of around 900m in the Swansea district and decrease in thickness towards the northeast and east with a thickness of around 425m near Merthyr Tydfil [5]. Based on the location of the site, and assuming a linear reduction in thickness, the thickness of the Middle and Lower Coal Measures Formations beneath the site is anticipated to be to the order of 700m.

Based on review of dip angles presented on the 1:10,560 geological mapping, the solid geology is anticipated to Have a regional dip in a west south-westerly direction at angles ranging from between 5° and 15° [1]. The sequence is folded with a syncline and anticline indicated to be present beneath the site and as a result of which the bedding dip angles will vary in these locations. Within the South Wales Coal Measures, there is the potential for instability within rock cuttings as a result of planar failure along bedding plans of weaker beds such as seatearths.

5.4 Linear Features

Five faults, three of which are named, have been identified to cross the site from review of published geological mapping. All of the faults are roughly aligned along a NNW to SSE alignment.

Refer to Figure 6 and Figure 11 throughout.

The easternmost fault, the Glyncorrwg Fault, is shown to pass through the washery portion of the site. The cross-mark on the 1:10,560 geological mapping indicates that the fault downthrows to the west [1]; the geological memoir for sheet 231 from 1904 suggests that the Glyncorrwg Fault has a downthrow of *"forty yards"* (~36.6m) [4]. Moving westwards, there is an unnamed fault (potentially associated with the Glyncorrwg Fault) which crosses into the eastern half of the main portion of the site that is also indicated to be downthrown to the west. The Chapel Fault is shown to cross through the eastern half of the site and is indicated to be downthrown to the east; the geological memoir for sheet 231 from 1904 suggests that the Chapel Fault is downthrown *"sixteen yards"* (~14.6m) eastwards [4].

To the west of the Chapel Fault is the Pwllau Bach Fault. The alignment of the Pwllau Bach Fault splits the main portion of the site roughly down the middle and

downthrows to the west. The downthrow is stated to be as much as *"eighty yards"* (~73.2m) within the 1904 geological memoir [4].

The Glyncorrwg, Chapel and Pwllau Bach Faults form part of a horst and graben formation which is shown to be located beneath the eastern half of the site. The final fault shown to cross into the site is also unnamed. The fault crosses into the north-western most corner of the main portion of the site and downthrows to the east.

Numerous coal seams are shown to outcrop within the boundary of the site. A review of the coal resource shown to be present beneath the site and the associated mining activities, both surface and sub-surface, is provided in Section 9 which focuses on mining.

6 Ground Conditions

The anticipated ground conditions beneath the site have been interpreted through review of borehole and trial pit logs from previously undertaken ground investigations. The logs have been sourced from information provided by Celtic Energy and BGS borehole scans accessed from the BGS online GeoIndex. The logs reviewed are provided within Appendix C and Appendix D.

The stratigraphy noted on each log is presented in Table 2 below before a summary of the anticipated ground conditions is provided. For the approximate locations of the borehole logs reviewed refer to Figure 5.

Table 2 – Borehole Logs from previous Ground Investigations

Reference	Stratigraphy (m bgl)	Groundwater
Completion plan vertical sections		
Onllwyn [1] (1949)	GL @ 261.2m AOD Base of Nine Feet Seam @ 258.0m AOD – Coal Seam (3.2m bgl) Base of Brass Seam @ 249.3m AOD – Coal Seam (11.9m bgl)	No groundwater remarks noted
Onllwyn [1] (1982)	GL @ 247.4m AOD Base of Upper Peacock @ 242.3m AOD – Coal Seam (5.1m bgl) Base of Peacock @ 232.5m AOD – Coal Seam (14.9m bgl) Base of Bluers @ 198.4m AOD – Coal Seam (49m bgl)	No groundwater remarks noted
Nant Helen Geotechnical Boreholes [2, 3]		
BH 2002 (1986)	GL @ 278.2m AOD GL – 0.5: Peat 0.5 – 2: Clay 2 – 3.1: Till 3.1 – 3.4: Mudstone 3.4 – 3.5: Coal 3.5 – 5: Mudstone	No groundwater remarks noted
BH 2005 (1986)	GL @ 280.6m AOD GL – 0.5: Peat 0.5 – 3.6: Till 3.6 – 4.5: Sandstone 4.5 – 4.75: Siltstone 4.75 – 6.8: Mudstone	No groundwater remarks noted
BH 2008 (1986)	GL @ 279.3m AOD GL – 0.5: Peat	No groundwater remarks noted

Reference	Stratigraphy (m bgl)	Groundwater
	0.5 – 1.0: Clay 1.0 – 3.6: Till 3.6 – 5.4: Mudstone	
BH 2009 (1986)	GL @ 282.5m AOD GL – 0.45: Peat 0.45 – 1.45: Clay 1.45 – 3.7: Till 3.7 – 5.7: Mudstone	No groundwater remarks noted
BH 2010 (1986)	GL @ 277.2m AOD GL – 0.2: Peat 0.2 – 1.05: Clay 1.05 – 2.4: Till 2.4 – 4.2: Mudstone 4.2 – 7: Siltstone 7 – 7.5: Sandstone	No groundwater remarks noted
BH 2011 (1986)	GL @ 271.7m AOD GL – 0.2: Peat 0.2 – 1.8: Clay 1.8 – 3: Mudstone 3 – 3.4: Siltstone 3.4 – 6.4: Mudstone	No groundwater remarks noted
BH 2013 (1986)	GL @ 263.4m AOD GL – 0.5: Peat 0.5 – 1.5: Clay 1.5 – 3.5: Till 3.5 – 4.1: Mudstone 4.1 – 4.5: Unknown strata 4.5 – 5.9: Mudstone	No groundwater remarks noted
BH 2018 (1986)	GL @ 253.0m AOD GL – 1.6: Peat 1.6 – 2.6: Clay 2.6 – 3.6: Till 3.6 – 5.7: Mudstone	No groundwater remarks noted
BGS Borehole Scans		
SN81SW30 (1989)	GL @ 236.48m AOD GL – 6: MADE GROUND: Loose to medium dense black sand and gravel mudstone with coal in a black silty clay matrix (colliery waste) 6 – 7: MADE GROUND: Soft grey brown mottled orange and black silty clay with much gravel of weathered sandstone and mudstone 7 – 8.05: Grey highlight to completely weathered silty MUDSTONE very weak laminated and micaceous 8.05 – 8.65: Dark grey IRONSTONE with some SILTSTONE 8.65 – 8.9: Light grey slightly to moderately weathered fine SANDSTONE, strong massive to occasionally cross laminated 8.9 – 9.6: Grey and light grey interlaminated moderately weathered silty MUDSTONE and sandy SILTSTONE, moderately weak occasional grey sandstone bands 9.6 – 11: Grey moderately weathered silty to very silty MUDSTONE, moderately weak 11 – 11.95: Dark grey slightly weathered silty SANDSTONE, weak. Thin sub horizontal laminations 11.95 – 14.2: Dark grey slightly weathered very slightly silty MUDSTONE moderately weak to weak laminated. Becoming very carbonaceous with depth. 14.2 – 15.03: Vitreous COAL 15.03 – 16.08: Dark grey to grey slightly weathered silty MUDSTONE, moderately weak many carbonaceous plant remains	Groundwater level ranging between 3.45m and 7.2m bgl during drilling

Reference	Stratigraphy (m bgl)	Groundwater
	16.08 – 19.7: Light grey slightly weathered clayey SILTSTONE moderately weak with occasional bands of thinly laminated silty mudstone. 19.7 – 21.65: Light to dark grey slighty weathered fine and medium SANDSTONE, strong massive with occasional cross bedding 21.65 – 22.3: Grey slightly weathered silty fine SANDSTONE moderately weak thin sub horizontal laminations very occasional plant remains and occasional sub vertical joints 22.3 – 25: Dark grey/black slightly weathered slightly silty MUDSTONE moderately to very weak. Often highly fragmented, often highly carbonaceous with occasional plant traces and occasional slickenside on joint surfaces 25 – 30: Open hole; Dark grey MUDSTONE	
SN81SW36 (1989)	GL @ 237.2m AOD GL – 3.2: MADE GROUND: Medium dense black sands and gravel of carbonaceous silty mudstone and coal with occasional black silty clay matrix 3.2 – 3.4: Firm brown organic CLAY with many rootlets and some peat 3.4 – 5.8: Firm to stiff grey brown mottled orange and black silty sandy CLAY with much gravel and occasional cobble of sandstone and mudstone and occasional coal fragments 5.8 – 6.7: Firm grey brown silty clay with mudstone fragments 6.7 – 7.2: Grey brown highly weathered silty micaceous MUDSTONE weak laminated and fragmented some iron staining 7.2 – 9: Grey moderately to slightly weathered SILTSTONE moderately weak laminated sub horizontal to massive iron staining on 45º joint planes 9 – 11.59: Grey moderately weathered slightly silty MUDSTONE weak often highly fractured 11.59 – 12.4: COAL with 45-60º slickensided joint surfaces 12.4 – 13: Grey slightly weathered silty MUDSTONE moderately weak massive many carbonaceous plant remains 13 – 18: Grey slightly weathered SANDSTONE and MUDSTONE 18 – 23: Dark grey slightly weathered SILTSTONE	Seepage of groundwater noted at 3.2m bgl at the base of the made ground Groundwater level ranging between 3.5m and 6.4m bgl during drilling
SN81SE4 (1977)	*GL not provided* GL – 0.6: MADE GROUND: Stiff grey/brown stony clay with sandstone cobbles 0.6 – 3.9: MADE GROUND: Firm dark grey silty clay with coal fragments 3.9 – 5: Stiff brown and grey mottled sandy CLAY with mudstone fragments	Groundwater struck at 1.5m bgl which rose to 1.3m bgl after 10 minutes
SN81SE5 (1977)	*GL not provided* GL – 0.2: Topsoil 0.2 – 0.5: MADE GROUND: Clay with coal wood and stones 0.5 – 1.5: MADE GROUND: Firm brown and grey mottled silty clay with sandstone and coal fragments 1.5 – 2.6: MADE GROUND: Stiff brown mottled silty clay with sandstone and coal fragments 2.6 – 3: MADE GROUND: Stiff dark grey shaly clay with coal fragments 3 – 4: Very stiff brown grey shaly CLAY with large angular sandstone fragments	Borehole dry
SN81SE6 (1977)	*GL not provided* GL – 0.1: Topsoil 0.1 – 0.7: MADE GROUND: Coal and clay 0.7 – 2.5: MADE GROUND: Firm grey/brown sandy stony clay with mudstone fragments and disseminated coal particles 2.5 – 4: Stiff grey/brown sandy stint CLAY with mudstone and large sandstone fragments	Groundwater struck at 3.0m bgl. Standing water level was measured at 1.6m bgl.
SN81SW37 (1991)	*GL not provided* GL – 0.8: Firm orange silty sandy CLAY with some fine and medium angular mudstone gravel and occasional coarse gravel and cobbles of sandstone	Slight groundwater seepage at 1.0m bgl within mudstone

Reference	Stratigraphy (m bgl)	Groundwater
	0.8 – 1.9: Highly weathered grey and orange laminated MUDSTONE, very weak. Generally recovered as angular gravel size fragments in a clay matrix	
SN81SW38 (1991)	*GL not provided* GL – 0.6: MADE GROUND: Grey shale and coal fragments with occasional brick and clinker 0.6 – 1.1: Firm grey and orange silty sandy CLAY with occasional fine gravel 1.1 – 1.8: Dark grey completely weathered MUDSTONE, recovered as clay with very occasional very weak mudstone lithorelicts 1.8 – 2: Highly weathered grey and orange laminated MUDSTONE, very weak. Generally recovered as angular gravel size fragments in a clay matrix.	Trial pit was dry throughout
SN81SW39 (1991)	*GL not provided* GL – 0.25: MADE GROUND: Grey shale fragments with occasional gravel 0.25 – 0.45: Stiff orange and grey silty sandy CLAY with occasional fine sandstone gravel and occasional boulder 0.45 – 1.5: Grey and orange highly weathered laminated MUDSTONE, very weak. Recovered as gravel size fragments	Trial pit was dry throughout

Notes

1. Detailed stratigraphy is not provided on the vertical sections shown on the opencast completion plans. Vertical sections have been reviewed to reveal the depth to coal seams.
2. The level of detail regarding 'Nant Helen Geotechnical Boreholes' is as presented on logs, refer to Appendix C. Logs reviewed to ascertain anticipated thicknesses of strata and depth to bedrock rather than for a detailed description of the materials encountered.
3. The boreholes appear to have been progressed in the same location as the large overburden storage area. Given the ground levels provided on the logs reviewed, it has been interpreted that these boreholes were progressed through the land currently underlying the large overburden storage area.

6.1 Interpretation

Made ground deposits are anticipated to be encountered beneath the majority of the proposed track route and within the washery portion of the site. The made ground backfill material anticipated to be present within the areas where opencast mining has been undertaken is likely to comprise gravel and cobble sized fragments of mudstone, siltstone and occasional sandstone.

Based on the descriptions provided in the logs reviewed, the made ground material anticipated to be encountered beneath the washery site is likely to comprise a mixture of varied granular backfill material within a cohesive clay matrix. The various gravel inclusions within the made ground were noted to be mudstone, sandstone, coal, clinker and wood. The thickness of this material is anticipated to range between 0.25m and 7m, although locally thicker deposits could be encountered in the locations of any stockpiles/spoil heaps within the washery site.

Natural superficial deposits of peat and glacial till are anticipated to be encountered beneath the southern portion of the site that has avoided opencast

activities and locally beneath the made ground materials anticipated to be encountered beneath the washery portion of the site.

In areas of the site that have not been subject to historical opencasting, peat deposits with thicknesses of circa 1-2m may be encountered. This material is anticipated to be soft/highly compressible and would need to be excavated and replaced with suitable earthworks fill or be subjected to ground improvement/treatment if it is encountered in the locations of proposed track alignment or the associated earthworks.

Glacial till deposits are also anticipated to be encountered in the locations that have not been subject to opencast mining activities within the main body of the site. The thickness of the glacial till material materials is likely to be limited (~3m) and discontinuous. No detailed descriptions of the glacial till material encountered were provided on the logs reviewed . Based on review of the published geological sources, glacial till typically comprises sand, gravel and cobble inclusions within a clay matrix.

Firm to stiff grey/brown clay with various mudstone, siltstone and sandstone gravel inclusions was encountered beneath the made ground deposits within the washery portion of the site. Based on the description and the published geological mapping, these materials are anticipated to be glacial till. Where encountered, the glacial till material beneath the washery portion of the site ranged between 0.2m and 2.4m thick. In some locations within the washery portion of the site, no natural superficial materials were encountered; in these locations the made ground material (described above) was encountered directly overlying the weathered bedrock.

As a result of the historical opencast workings within the site area, the depth to rockhead will vary greatly depending on location. Within the areas of the main site that have not been subject to opencast mining, the depth to rockhead is anticipated to be relatively shallow, with recorded depths ranging between 1.8m and 3.6m. However, in the locations that have been subject to opencast activity and have since been backfilled, the depth to rockhead could vary significantly over short distances (as detailed above). The bedrock material is anticipated to comprise interbedded mudstones and siltstones with occasional sandstone bands. The detailed descriptions from boreholes progressed within the washery portion of the site suggest that the mudstones and siltstones are slightly to moderately weathered and are moderately weak to strong. The materials are generally grey to dark grey in colour and occasionally micaceous. Where encountered close to surface, bedrock was recovered as highly weathered fragments of mudstone and sandstone within a clay matrix. Given this description, it is likely to be difficult to distinguish between the weathered head of bedrock and the overlying Glacial Till material.

From review of the vertical sections presented on the opencast completion plans for the Onllwyn site (1949), the base of the Nine Feet and Brass seams were encountered at 3.2m and 11.9m bgl ground level respectively. In addition, reference to the base of the Upper Peacock and Peacock seams were shown to have been encountered at 5.1m and 11.9m bgl respectively on the vertical section presented on the opencast completion plan for the Onllwyn site (1982). For

further detail regarding coal mining activity and the risk of shallow workings being present, reference should be made to Section 9 of this report.

Groundwater remarks were only provided on the logs reviewed within the washery portion of the site. The logs for the two deep boreholes reviewed within the washery portion of the site provided no indication of distinct groundwater strikes; however, the measured standing water level ranged between 3.45m and 7.2m bgl. Slight seepages and groundwater strikes were presented on the other logs within the washery portion of the site with some as shallow as 1.0m bgl. A detailed review of the groundwater beneath the site is provided in Section 8.3.

7 Hydrology

The hydrological features that pass through and surround the site have been identified through review of aerial online imagery and through review of the Groundsure EnviroInsight report (refer to Appendix E for the Groundsure report). The flow direction of the watercourses has been determined through interpretation of contours presented on the OS mapping covering the site area.

Figure 7 shows the location of identified hydrological features.

7.1 Watercourses

The site overlaps with three principal river catchments. The northern half of the main portion of the site sits within the Tawe catchment and contains several small unnamed streams which drain in a northerly direction towards the River Tawe. The River Tawe is the largest watercourse within the vicinity of the site and flows roughly from east to west approximately 500m to the north of the site boundary.

The Nant Llech, a tributary of the River Tawe, flows from east to northwest where it feeds into the Tawe and passes within 300m of the north-eastern site boundary. The Nant Llech is also an SSSI (refer to Section 10). A collection of small unnamed stream features to the northeast of the main portion of the site are shown to drain in a north-easterly direction towards the Nant Llech.

The southern half of the site sits within the Dulais catchment. The River Dulais flows roughly from east-northeast to west-southwest and runs through the washery portion of the site and along a portion of the south-eastern boundary of the main site.

The Nant Ystalwyn, a tributary of the Dulais, is shown to be fed by a selection of ponds which are located at the base of the large overburden storage area which is centrally located within the body of the main site. These ponds have been identified as water treatment areas and are fed by the drainage features present on the southern face of the large overburden storage area.

A collection of other tributary streams which originate within the central portion of the site flow in a southerly direction to their respective convergences with the River Dulais.

A small portion of the eastern half of the main portion of the site is shown to sit within the Pyrddin catchment. However, from review of OS mapping contours and the Groundsure EnviroInsight report, the drainage features within this portion of the site are anticipated to contribute to flows within the Dulais and not the Pyrddin (located ~1km to the east of the eastern site boundary). The drainage features identified appear to be man-made and initially flow in an easterly direction. Once they pass beneath Onllwyn Road the direction of flow turns south-westwards and runs parallel to the Onllwyn Road before feeding into a collection of ponds within the washery portion of the site. These ponds are located at the apparent source of the River Dulais and based on contours in the area are likely to feed into the flows within the Dulais.

One unnamed stream is shown to be located to the south of the washery portion of the site. From review of information presented within the Groundsure EnivoInsight report, this stream flows in an easterly direction before being culverted beneath the A4109 that borders the washery site to the south. The stream is then shown to re-emerge within the washery site before passing through another culvert beneath a section of the washery site. The stream eventually converges with the Camnant which in turn is a tributary of the Pyrddin.

As shown on the 'Site Context' figure provided by Celtic Energy (refer to Appendix H), several small pond features are shown to be located within the boundary of the site. Most of these appear to be 'water treatment areas', refer to Figure 7.

Through consultation with Celtic Energy it is understood that the easternmost water treatment area comprises ponds which are lined with a plastic liner. The water treatment areas that lie at the southern base of the large overburden storage area were constructed in 'virgin ground' and are possibly clay lined/sealed; if un-lined, it is likely that water is retained within these features due to the cohesive nature of the glacial till likely to be present in the area.

In addition to the water treatment areas, a collection of pond features are shown to be present in the area of 'restored land' above a portion of the Nant Helen opencast workings. It is understood that these ponds are an attempt to re-naturalise and create an ecological habitat post backfilling and are possibly lined with low permeability/cohesive materials.

8 Hydrogeology

This section of the report provides details on the anticipated hydrogeological regime beneath the site. Published hydrogeological sources have been reviewed alongside the Groundsure Report purchased for the site and data provided by Celtic Energy regarding groundwater levels beneath the site.

8.1 Hydrogeological Mapping

The information presented below has been based on review of the BGS 1:125,000 Hydrogeological Map of South Wales [6].

8.1.1 Drift (Superficial Deposits)

Till is a variable deposit of boulder clay and morainic drift. The principal lithology is unsorted stones of gravel, cobble and boulder within a silty clay matrix; however, in places lenses and more continuous bands of stratified sand and gravel are anticipated to be present. These predominantly granular lenses can act as localised perched aquifers however the main hydrogeological significance of till deposits is in limiting recharge to, and confining water within, underlying formations.

8.1.2 Solid (Bedrock)

The coal measures likely to be encountered beneath the site comprise rhythmic sequences of mudstones, siltstones, sandstones, grits, fireclays and coals. The South Wales Upper Coal Measures Formation (not shown to be present beneath the site) is known to contain large quantities of groundwater and form a multi-layered aquifer system with separate water bodies found within each sandstone horizon. The Middle and Lower Coal Measures (shown to be present beneath the site) tend to have lower porosities than the overlying Upper Measures with the highest values of porosity occurring in areas of intensive folding and faulting. However, the extensive disturbance and subsidence caused by mining in the South Wales region has resulted in hydraulic conductivity between the sandstone horizons comprising the South Wales Upper Coal Measures Formation and, locally, hydraulic conductivity exists between the Upper and Middle/Lower Coal Measures Formations.

The groundwater within the Middle and Lower Measures tends to contribute towards baseflow of rivers and usually emerges as springs at the bases of the subordinate sandstones. Groundwater yields from the Middle and Lower Coal Measures rarely exceeds 1l/s.

8.2 Aquifer Designations

The aquifer designations of the various geological strata identified to be present beneath the site have been ascertained through review of the Groundsure EnviroInsight report (refer to Appendix E).

The glacial till deposits shown to be present in the southern and western portion of the site are designated as a ‘Secondary Aquifer’. A ‘Secondary Aquifer’ designation is attributed to a stratum where it has not been possible to differentiate between a ‘Secondary (A)’ or ‘Secondary (B)’ designation. A ‘Secondary (A) Aquifer’ refers to a stratum defined as *“permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers”*. Whereas, a ‘Secondary (B) Aquifer’ refers to a stratum defined as *“predominantly lower permeability layers which may store and yield amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering”*. As identified on the hydrogeological mapping, granular lenses of sands and gravels within glacial till deposits can occasionally act as aquifers however, due to the cohesive nature of clays that are typical of glacial till, till deposits predominantly limit recharge to

and confine groundwater within underlying permeable stratum. It is therefore unlikely that the glacial till deposits located to the south of the site will form part of a large aquifer.

The deposits of peat shown to be present within the site are designated as 'unproductive strata'. Unproductive strata are defined as *"rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow"*.

The South Wales Coal Measures Formations (both Middle and Lower) shown to be present beneath the entirety of the site are both designated as 'Secondary (A) Aquifers' which are as defined above.

No principal aquifers are located beneath the site.

8.2.1 Abstraction Licenses

From review of the Groundsure EnviroInsight report, a singular groundwater abstraction license pertaining to a groundwater abstraction point ~800m to the northeast of the north-eastern boundary site is present. According to the date within the Groundsure report, this groundwater abstraction license is no longer active and the water abstracted was used for 'General Farming and Domestic' purposes.

However, it should be noted that opencast dewatering operations are known to be in operation which will be artificially lowering the groundwater level in the vicinity of the Nant Helen Extension opencast site.

A total of eight surface water abstraction licenses are held within a 700m radius of the northern boundary of the site. Six of these licenses pertain to abstraction points along the River Tawe or unnamed tributaries of the Tawe and are all designated as 'historical' suggesting that the licenses are no longer in effect. The remaining two surface water abstraction licenses pertain to two abstraction points from a reservoir at Gwaunclawdd Farm (not covered on the figures). These are also noted as 'historical' which suggest the licenses are no longer in effect.

8.3 Groundwater Levels

The groundwater levels beneath the site have been interpreted through review of ground investigation logs held by the BGS and through review of documents provided by Celtic Energy. It should be noted that the groundwater data presented on the logs held by the BGS is limited in nature and only pertains to the washery portion of the site.

Groundwater remarks presented on the BGS logs reviewed suggests that the groundwater level within the washery portion of the site sits between 3.45m and 7.2m below ground level. Shallower strikes and slight seepages were also noted as shallow as 1.0m bgl.

No indication of groundwater strikes were provided on the logs reviewed within the main body of the site. However, within the Environmental Statement submitted for the expansion of the Nant Helen Extension opencast site in 2011,

details regarding groundwater levels in the locale of the opencast area were provided (refer to Appendix H). It should be noted that these boreholes were not located within the boundary of the site.

Extensive exploratory drilling was undertaken by British Coal in the late 1990s in the location of the Nant Helen Extension opencast. It should be noted that these boreholes are located to the west of the western site boundary and do not pertain to the site directly. The boreholes were progressed through the known workings within the "Nine Feet" and "Brass" seams and the water levels within each were recorded. The groundwater level within these workings was recorded to be standing at approximately 126m AOD beneath the easternmost extent of the Nant Helen Extension opencast site and approximately 100m AOD at the westernmost extend of the Nant Helen Extension opencast site (refer to Appendix H). Based on current LiDAR elevation data, this would put the groundwater level between ~170m below current ground level (east) and ~50m below current ground level (west); the disparity in these levels is due to the existing Nant Helen Extension void in the west and the overburden storage area to the east.

These levels are corroborated by two piezometers which were also installed by British Coal during the ground investigation in the 1990s. These piezometers indicate that the groundwater level to the west of the Nant Helen Extension site was between 109m AOD and 99m AOD (refer to Appendix H).

Through consultation with Celtic Energy, it has been determined that current dewatering operations within the Nant Helen Extension opencast site aims to maintain the water levels at approximately 100m AOD. As highlighted in the Environmental Statement for the Nant Helen Extension opencast, the lowest projected level of excavation within the Nine Feet seam could be as low as 76m AOD (refer to Appendix H). As dewatering would be required to reach this depth, it is likely that the groundwater level would be locally reduced to a similar level. Post completion of opencast excavation in the area it is possible that the groundwater levels will re-bound to a similar level that was encountered within the boreholes progressed during the British Coal ground investigation in the 1990s (between ~100m AOD and ~120m AOD).

In addition, there are numerous adits that allowed access to workings within the Nine Feet and Brass seams to the west of the site. The lowest of which, the Cwm Du adit, underdrains the opencast workings within the Nant Helen Extension site. The Cwm Du adit has an invert level of 93.6m AOD where it discharges to the River Tawe (refer to Appendix H).

The hydrogeological regime beneath the site is anticipated to be complex and highly varied across the site. As highlighted in the 2011 Environmental Statement, there is evidence that the Nant Helen Extension site is under-drained by existing adits. This is likely to also be the case for the other areas of opencast working which have excavated through underground workings in the past; the groundwater levels within these regions is likely to be heavily dependent on the outflow capacity of the adits and secondary permeability of the underlying bedrock. In order to gain an appreciation for the groundwater levels in the various areas of opencast, identification of the likely under-draining adits (potentially through review of a comprehensive set of mine abandonment plans and/or a future site

visit) coupled with deep intrusive ground investigation including subsequent groundwater monitoring would likely be required.

It should also be noted that there are numerous surface water features that appear to originate within the site, particularly in the southern half. The levels (~250m AOD) of the ponds and the headwaters of the streams are unlikely to represent an overall piezometric surface for the site and instead are likely to represent locally perched groundwater controlled by areas of geology with low permeability (e.g. shallow impermeable bedrock or cohesive superficial deposits (both natural and made ground)).

9 Coal Mining

The entirety of the proposed site is situated within a Coal Authority 'Development High Risk Area'. A 'Development High Risk Area' is defined as an *"area which contains one or more recorded coal mining related features which have the potential for instability or a degree of risk to the surface from the legacy of coal mining operations"* [8]. These *"features"* typically include mine entries (shafts and adits) and shallow coal workings (recorded and probable).

New development in areas defined as high risk needs to demonstrate that the development will be safe and stable taking due account of former coal mining activities. This section of the report aims to highlight the particular features and constraints associated with mining activities in the area and identify 'risk zones' along the proposed route where the risk of subsidence on account of shallow workings is considered greatest. The features and risk zones are marked on Figures 8 and 9 which should be referred to throughout.

The sources reviewed during the preparation of this report are presented in Section 2 above; however, with regards to the information presented in this section of the report it should be noted that the basis of many of the findings is sourced from primary data sources such as BGS geological plans (various scale ranges), historical mapping sets and historical aerial imagery. The findings presented within the primary data sources have then been supplemented with data from secondary sources such as Coal Authority data and records provided by Celtic Energy.

9.1 Outcrops

As identified in the Published Geology section above, the site is primarily underlain by South Wales Middle and Lower Coal Measures Formations. Numerous coal seam outcrops associated with the aforementioned formations, both observed and inferred, have been identified from review of BGS published geological sources (refer to Figure 6). It should be noted that there is a discrepancy between the seam outcrops shown on the BGS published geological mapping and the seam outcrops shown on the Coal Authority online viewer. As the BGS published geological mapping is considered to be the primary data source, the locations of the seam outcrops shown on the BGS published geological mapping have been assumed to take precedence within this report.

The site is roughly split in half by the Pwllau Bach Fault along a north to south centrally located axis. Significant outcropping of seams within the South Wales Middle Coal Measure Formation is shown to the west of the Pwllau Bach Fault on the published geological mapping sources. The "Soap" seam is shown to outcrop along an east to west alignment from the Pwllau Bach Fault in the east to the site boundary in the west. Moving down through the Middle Coal Measures sequence, with the outcrops progressing northwards, and following a similar alignment, are shown for the "Stwrin", "Rock", "Little", "Four Feet", "Nine Feet" and "Brass" seams. To the north of the "Brass" seam the outcrop of the Amman Marine Band is shown to be located which marks the boundary between the Middle and Lower Coal Measures Formations. No outcrops are shown in the southern portion of the site to the west of the Pwllau Bach Fault. This is likely due to the dip of the solid geology (5° – 15°, WSW – SW) shown on the 1:10,560 geological mapping and the similar dip of the topography also towards the southwest.

Between the Pwllau Bach Fault and the Chapel Fault, the observed and partially inferred outcrops of the "Nine Feet" and "Brass" seams are shown on the published geological mapping reviewed. The outcrops of both are shown to follow a north to south alignment before turning 90° to run along an east to west alignment. To the south of the site within the bounds of the Pwllau Bach and Chapel faults, the inferred and partially observed outcrops of the "Cornish", "Lower Eighteen Feet" and "Stwrin" are shown to be present.

To the east of the Chapel fault (downthrow to the east) the "Nine Feet" and "Brass" seam outcrops are once again shown to be present within the site boundary. The alignments of both are shown as observed and are believed to have been mapped during the opencast mining activity located in the eastern half of the main portion of the site. The outcrops of the "Cornish" and "Stwrin" seams are shown to be located to the south of the site; the "Lower Eighteen Feet" outcrop is not shown to the east of the Chapel fault and instead the outcrops of the "Lower Four Feet" and "White Four Feet" seams are shown to be located between the outcrops of the "Cornish" (north) and "Stwrin" (south).

To the north of the Chapel fault in the north-eastern corner of the main portion of the site, the outcrops of the "Upper Bluers", "Middle", "Lower" and "Bryn" seams are shown to be present situated along an east to west alignment. An anticlinal axis is shown to manipulate the alignment of the "Upper Bluers" seam outcrop. All of these outcrops refer to seams located within the South Wales Lower Coal Measures Formation.

To the east of the Glyncorrwg Fault the inferred outcrops of the "Upper Bluers", "Grey" and "New" coal seams are shown to be present beneath the washery portion of the site. These inferred outcrops are shown to be situated along an approximate southeast to northwest alignment.

Through review of the BGS geological memoir for the site area (Sheet Memoir 231) and the Nant Helen old workings file provided by Celtic Energy, the anticipated sequencing of the seams within each formation has been determined and is presented in Table 3 below. In addition, from review of the various sources, inconsistency regarding naming of the various seams has been noted and so the other names (and deviations of the same seam, e.g. "Four Feet" and "Lower Four

Feet") associated with each seam are also noted in Table 3. Typical seam sections have been identified through review of the Nant Helen old workings file provided by Celtic Energy.

Table 3 – Interpreted coal seam sequencing

Seam	Other names	Typical seam section
South Wales Middle Coal Measures		
Soap	Two Feet-Nine	-
Stwrin	Two Feet-Nine	-
Four Feet	Upper Four Feet, Lower Four Feet, White Four Feet, White, Stwrin	0.9m
Eighteen Feet	Lower Eighteen Feet, Six Feet, Black	-
Cornish	Red Vein, Two Feet	0.76m
Harnlo	-	-
Nine Feet	Big	2.7 – 3.0m
Brass	Bute, Peacock	0.9 – 1.4m
South Wales Lower Coal Measures		
Yard	Lower Peacock, Lower Brass	-
Bluers	Blewers, Upper Bluers, Lower Bluers, Seven Feet	0.6 – 0.85m
Rhyd	Five Feet, Little Brass	0.75m
Grey	Gellideg	0.66m
Middle	Gellideg	0.63m
New	Lower	0.69m
Bryn	Gnapiog	0.5m

9.2 Collieries

The following information for each of the identified collieries has been gathered from the Welsh Coal Mines website [9]. The information contained is not necessarily complete but identifies the seams worked by each colliery and provides information regarding years of operation. A short paragraph is provided on each colliery before the seams worked are listed; the seams are listed from shallowest to deepest based on published geological sequencing.

The approximate locations of each colliery are shown on Figure 4. The locations of the collieries have been determined through a review of historical mapping and photographic sources and not from information presented on the Welsh Coal Mines website.

Abercrave Colliery

The Abercrave Colliery was opened in 1872 and predominantly worked the "Eighteen Feet" seam and lower measures seams beneath the site. By 1923 the colliery was working the "Big Vein" (also known as "Nine Feet"), "Four Feet" and "Peacock" seams. The Abercrave Colliery was closed in 1967 [9].

Operational years: 1872 - 1967

Seams worked:
Middle Coal Measures
Four Feet
Eighteen Feet
Big (Nine Feet)
Peacock (Brass)

Lower Coal Measures
*Lower measures seams**

**no distinction between indivual seams within the Lower Coal Measures is provided in the source material.*

International Colliery

Records suggest that the International Colliery was opened in 1893 and was operated by the French Anthracite Company. The colliery is shown to have worked the "Four Feet", "Nine Feet", "Peacock" and "White" seams. The International Colliery was absorbed into the Abercrave Colliery in 1913 and both were eventually closed in 1967 [9].

Operational years: 1893 - 1913

Seams worked:
Middle Coal Measures
White (Four Feet)
Nine Feet
Peacock (Brass)

Gwaunclawdd Colliery

The Gwaunclawdd ("Gwaun Clawdd" or "Gwaun-y-clawdd") Colliery was opened in 1864 as an anthracite drift mine. The colliery produced anthracite from the "Big" (also known as "Nine Feet"), "Lower", "Brass" and "Four Feet" seams. The colliery was closed in 1938 [9]. From review of historical mapping sources, the Gwaunclawdd Colliery moved from its original site to a new site approximately 500m to the east between 1877 and 1903, refer to Figure 4.

Operational years: 1864 - 1938

Seams worked:
Middle Coal Measures
Four Feet
Big (Nine Feet)
Brass

Lower Coal Measures
Lower (Gellideg)

Onllwyn Colliery

Developed in the 1840's, the Onllwyn Colliery was originally a collection of drift mines situated in the upper Dulais valley working the "Big" (also known as "Nine Feet"), "Red Vein" and "Peacock" seams. Detail suggesting working of the "Brass", "Eighteen Feet", "White" and "Bluers" seams is also provided on the Welsh Coal Mines website. The various drift mines were closed between 1962 and 1964 [9].

Operational years: circa 1840 - 1964

Seams worked:
Middle Coal Measures
White (Four Feet)
Eighteen Feet
Red Vein
Big (Nine Feet)
Peacock (Brass)

Lower Coal Measures
Bluers

Dulais Colliery

The Dulais Colliery (also referred to as Drym Colliery) was originally an anthracite slant (drift) mine built along the Neath and Brecon Railway; the colliery was located to the west of the Onllwyn Colliery. In 1905 a shaft was sunk to work the "Bluers" seam within the Lower Coal Measures. In 1930 the Dulais Colliery was working the "Peacock" seam and in 1935 the workings included the "New" seam. The drift mines associated with the "New" and "Bluers" seams were abandoned in 1917 and the "Nine Feet" seam was abandoned in 1926 (Note: no details regarding the initiation of workings within the "Nine Feet" seam are provided). The Dulais Colliery was closed prior to Nationalisation in 1947 [9].

Operational years: circa 1905 – circa 1947

Seams worked:
Middle Coal Measures
Nine Feet
Peacock (Brass)

Lower Coal Measures
Bluers
New (Gellideg)

Hendre Ladis Colliery – Ynyscedwyn Colliery

Note, neither of these collieries are shown on Figure 4. The Hendre Ladis Colliery was located approximately 1km to the west of the western site boundary and the Ynyscedwyn Colliery (which absorbed the Hendre Ladis) was located approximately 1.4km to the west of the western site boundary.

The Hendre Ladis Colliery, circa 1840, originally comprised a singular steeply inclined drift mine owned by the Ynyscedwyn Iron Company. No details of seams worked, whilst under the name "Hendre Ladis", are provided. Towards the end of the 19th century the colliery was absorbed by the Ynyscedwyn Colliery. The

'Ynyscedwyn Slant' (drift mine) worked the "Big" (also known as "Nine Feet") and "Peacock" seams. The Ynyscedwyn Colliery was closed by the National Coal Board in 1967/8 [9].

Operational years: circa 1840 - 1968

Seams worked: Middle Coal Measures
Big (Nine Feet)
Peacock (Brass)

Seven Sisters Colliery

The first of two shafts at the Seven Sisters Colliery was sunk in 1872. The two shafts were sunk to the "Nine Feet" seam which was encountered 183m below surface level. A list from 1923 shows that the "Four Feet" and "Brass" seams were being worked alongside the "Nine Feet" seam. The Seven Sisters Colliery was closed in 1963/4 [9].

Operational years: 1872 - 1964

Seams worked: Middle Coal Measures
Four Feet
Nine Feet
Brass

Glynllech Colliery – Cwm Tawe Colliery

Although no records of the Glynllech/Cwm Tawe Colliery are presented on the Welsh Coal Mines website, from review of historical mapping sources (Groundsure OS) the colliery is shown to be present to the north of the main site. The colliery is first shown on the 1914 mapping and is absent on the 1948 mapping suggesting a short period of operation.

Based on the location of the Glynllech Colliery and interpretation of published geological mapping, the Glynllech Colliery is anticipated to have worked the "Bluers", "Middle" and "Lower" seams; all of which sit within the South Wales Lower Coal Measures Formation.

9.3 Mine Entries

Based on review of the Coal Authority online viewer a total of 95No. mine entries have been identified within the site boundary. Sixty-four of the entries, both shafts and adits, are shown to be located within the main portion of the site. Thirty-one mine entry locations are shown to be present within the "washery" portion of the site [8]. The majority of the entry locations within the main portion of the site have been plotted on Figure 8 based on review of opencast completion plans and abandonment plans provided by Celtic Energy. However, the entry locations within the washery site were not shown on the source material provided by Celtic Energy.

In the north-western portion of the site a total of 24No. mine entries have been identified; seven of these entries are shown to be shafts (no depths provided) and the remaining seventeen are shown to be adits [8]. Based on the location, these

entries are anticipated to have been associated with the Abercrave and International Collieries; it should be noted that these entries have most likely been excavated out during the opencast mining activities associated with the Abercrave/Gwaunton opencast site (1973) and are therefore are unlikely to still be present (refer to Figure 9).

In the north-eastern portion of the site a total of 28No. mine entries are shown to have been present; nine of the entries have been identified as shafts and the remaining nineteen entries pertain to adits. Of the nine shafts identified, depths for three of the shafts were provided and range between 5.5m and 9.15m. Based on review of historical mapping, these entries are likely to have been associated with the Glynllech/Cwm Tawe Colliery. Two of the adits shown are located within the extent of the Abercrave/Gwaunton opencast site and have likely been excavated out. However, the majority are shown to be located in an area that has not been opencast and are therefore both the shafts and associated mine workings are still potentially present. No details on any 'treatment' (e.g. backfilling) of the entries in this location are provided on the Coal Authority online viewer.

A total of 12No. mine entries were identified to be present within the south of the site. Six of these entries pertained to shafts with known depths ranging between 3.6m and 4.6m and the remaining six entries were shown to be adits. These entries are likely to be associated with the Dulais Colliery and based on review of abandonment plans, the entries accessed the "Nine Feet" and "Brass" workings.

The presence of coal seams at shallow depth beneath the ground surface (both in the north and south of the site) means that they could be worked by bell pitting. Bell pitting as a method of extraction was often prevalent in areas where mineral deposits that are near-surface and shafts rarely extended beyond 10-12m in depth. From review of historical aerial photography from 1945, surface depressions have been identified that could be the result of bell pitting activities, see Figure 12 below.



Figure 12 Extract from 1945 aerial photography showing potential 'bell pitting'

A total of 31No. mine entries were identified to be present within the washery portion of the site. As the locations of these entries were not shown on any of the materials provided by Celtic Energy, the locations of these entries are not shown on Figure 8. The thirty-one entries within the zone include eight recorded shafts and twenty-three recorded adits. No depths were provided for the shafts identified on the Coal Authority viewer.

9.4 Underground Workings

Through review of abandonment plans provided by Celtic Energy (see Appendix F), the plan area extent and anticipated depth to workings for identified coal seams have been reviewed. It should be noted that the Coal Authority online viewer shows that the majority of the site is underlain by some form of underground workings. Abandonment plans held by the Coal Authority for these workings have not yet been acquired. (It is recommended that the available abandonment plans are acquired and reviewed as part of a more detailed desk study assessment).

Given the age and geographical location of the workings, 'partial extraction' methods are anticipated to have been used. As a result, residual voids associated with mining roadways and open stalls are likely to be present in the worked seams lying beneath the site.

Based on the '10t rule of thumb' (noted within CIRIA C758D) corresponding to 10 times the thickness (t) of an assumed unsupported high void/mining roadway [10]. If a 2m thick void is assumed – corresponding with the typical dimensions of a mining rowadway, the risk of subsidence associated with potential mining related voids is genrally considered to be sufficiently high to require mitigation or treatment when workings <20m below rockhead are anticipated to be present.

This bedrock cover value has been applied to the underground working plans reviewed to determine where the greatest risk of subsidence currently lies.

Table 4 – Underground workings summary table

ID	Description	Level (mAOD)	Depth to workings (m below current rock head)
A	Workings within the 'Nine Feet' seam anticipated to be associated with the Hendre Ladis/Ynyscedwyn Colliery.	Not provided	>>20 [1]
B	Workings within the 'Brass' seam anticipated to be associated with the Hendre Ladis/Ynyscedwyn Colliery.	Not provided	>>20 [1]
C	Workings within the 'Brass' seam anticipated to be associated with the Seven Sisters Colliery.	Not provided	>>20 [1]
D	Workings within the 'Nine Feet' seam anticipated to be associated with the Seven Sisters Colliery.	93.87	169

ID	Description	Level (mAOD)	Depth to workings (m below current rock head)
E	Workings within the 'Nine Feet' seam anticipated to be associated with the Dulais Colliery.	245.36 (Adit entry level)	<20 [2]
F	Workings within the 'Peacock' (Brass) seam known to be associated with the Dulais Colliery.	192.14 – 276.78	5 - 25
G	Unnamed adit believed to be associated with the Dulais Colliery. 'No Coal' notation on abandonment scan suggest it was a trial adit which was not progressed further.	243.84 (Adit entry level)	<20 [2]
H	Unnamed workings (assumed to be Bluers Seam within the Lower Coal Measures) anticipated to be associated with the Dulais Colliery.	143.43 – 176.78	87 - 97

Notes

1. Although depth to working and/or working levels were not provided on the plans used to identify these workings, based on the level provided on the plan to identify the level of working 'D', the depth to these workings is anticipated to be far greater than the 20m below rockhead range identified as highest risk within CIRIA C758D.
2. No in seam levels are provided. The depth to workings has been assumed to be less than 20m due to the limited plan area extent of the workings that spread from the adit entry points which are shown to be situated at surface level.

As highlighted in Table 4 above, underground workings at depths shallower than 20m below the current anticipated rock head are anticipated to be present. This particularly applies to workings 'E', 'F' and 'G' (refer to Figure 8).

It should be noted that cuttings (~10m) are currently proposed through the area that is anticipated to be underlain by workings 'E', 'F' and 'G'. These cuttings will lower the rock cover and in some instances underground workings may be encountered during excavation of the cuttings currently proposed (refer to Figure 11).

In these locations there is a risk of subsidence as a result of collapsed underground mine workings; in order to mitigate against the risk of subsidence, remedial actions such as grouting of voids may be required.

9.5 Open Cast Coal Mining

In addition to the extensive deep mine working continued beneath the site up until ~1966, the site has also been subject to extensive opencast coal mining activity from as early as 1946. From review of opencast completion plans (see Appendix G) and review of historical aerial photography, the various opencast sites have been identified and are shown on Figure 9.

A summary of the opencast sites identified is provided in Table 5 below; the operational years and an estimate of the maximum depth of excavation is also tabulated. The depth of excavation has been determined through review of opencast completion plans, where available, and current levels ascertained from online OS elevation data.

The depths of excavation provide indicative figures for the depth of fill material which is now present within the opencast sites that have been backfilled post completion of opencast activity. The backfill material is likely to comprise the non-coal bearing site won rock arisings which have been excavated during opencast working.

Table 5 – Opencast workings summary table

Name	Operational Years	Maximum depth of excavation
Onllwyn	1946 – 1949	~15m
Cefn Byrle [1, 2]	1952 – 1953	-
Abercrave / Gwaunton [1]	1963 – 1973	~40m
Onllwyn	1972 – 1982	~82m
Nant Helen	1986 – 1999	~130m
Nant Helen Extension	2002 - Present	~150m

Notes

1. Completion plans for the Cefn Byrle and Abercrave/Gwaunton opencast sites were not provided.
2. The existence of the Cefn Byrle opencast site has been determined through review of the 'History of Coal Mining' figure contained within the Nant Helen Extension Environmental Statement from 2011. Refer to Appendix H.

Refer to Figure 11 for an illustrative geological section which passes through the Onllwyn (1972-1982) and Nant Helen (1986-1999) opencast workings. The depths of the workings shown have been interpreted through review of the relevant opencast completion plans.

It should be noted that the extent of the Abercrave/Gwaunton opencast site shown on Figure 9 has been determined through review of figures provided within the Nant Helen Extension Environmental Statement (refer to Appendix H) rather than abandonment plans.

9.6 'Risk Zones'

A preliminary risk assessment has been undertaken in order to identify particular 'risk zones' along the proposed track route. The risk zones aim to highlight where the risk of subsidence as a result of shallow mine working collapse is highest. The

risk zoning has been primarily based on the areas that have are anticipated to have not been subject to opencast mining activity.

The risk zones are shown on Figures 8 and 9.

'Risk Zone A' is located in the south-eastern quarter of the main portion of the site. The zone covers the sections of proposed track from the western border of the second Onllwyn opencast site (1982) in the east to the eastern border of the Nant Helen opencast site (1999) centrally located within the site. There is a risk of subsidence in this zone due to the known presence of underground workings at shallow depth within the "Nine Feet" and "Brass" seams (see workings 'E', 'F' and 'G' on Figure 8); based on review of abandonment plans (provided by Celtic Energy), some of these workings are potentially as shallow as 5m below the current anticipated rock head and are therefore within the 20m below rockhead range which poses a crown-holing subsidence risk as determined from review of the CIRIA C758D guide. As highlighted in Section 9.4, as cuttings in the range of ~10m are proposed in this region of the site, the rock head cover is likely to be reduced and in some cases, workings are anticipated to be exposed by the proposed cuttings. In addition, potential 'bell pitting' activities have been identified within this zone from review of historical aerial photographs which further increases the risk of potential subsidence in this zone.

'Risk Zone B' is located in the north-eastern quarter of the main portion of the site. The zone covers the section of proposed track between the northern border of the second Onllwyn opencast site (1982) in the east to the eastern boundary of the Abercrave/Gwaunton opencast site (1973) located in the north of the site. There is a risk of subsidence in this zone due to the presence of numerous shaft and adit mine entries associated with the Glynllech/Cwm Tawe Colliery. Although a comprehensive set of abandonment plans for this region of the site have not yet been reviewed, there is the potential that shallow underground workings will be present in this area on account of the numerous shafts and adits; the depths of the shafts in this region (~5.5 – 9.15m) also indicate the potential presence of shallow workings within the 20m below rockhead range determined from review of the CIRIA C758D guide.

'Risk Zone C' is located in the south-western quarter of the main portion of the site. The zone covers the section of proposed track which runs from the southern border of the Nant Helen opencast site (1999) to the southern boundary of the Nant Helen Extension (2002 – present) located along the westernmost border of the site. There is a risk of subsidence in this zone due to the known presence of underground workings beneath the proposed track route. It should be noted that the risk of subsidence in this zone isn't considered to be as great as it is in zones 'A' and 'B' as the workings are anticipated to be much deeper than the 20m below rockhead range determined.

'Risk Zone D' covers the washery portion of the site. The zone has not been defined further as the exact locations of the shaft and adits identified to be present within the washery portion of the site could not be confirmed through review of opencast competition plans or abandonment plans provided by Celtic Energy. It is likely that Coal Authority data will have to be purchased in this region to cross

check the recorded locations of the mine entries shown on the Coal Authority online viewer.

It is recommended that a comprehensive set of abandonment plans are purchased and a ground investigation (including both intrusive and non-intrusive works) is scoped and undertaken to confirm the potential presence of shallow workings within the zones identified. If identified, remedial actions such as grouting of voids may be required in order to mitigate the risk of subsidence.

10 Sensitive Land Uses

Through review of information presented within the Groundsure EnviroInsight report, the following sensitive land uses have been identified within a 500m buffer of the site the site boundary. Refer to Figure 10 for the locations of the sensitive land uses identified.

Table 6 – Sensitive land uses

Sensitive Land Use	Name	Location
National Parks	Brecon Beacons	85m (NE)
Sites on Special Scientific Interest (SSSI)	Gorsllwyn, Onllwyn	19m (NE)
	Nant Llech	111m (N)
Ancient Woodland	Ancient semi natural woodland	On site
	Plantation on ancient woodland site	On site
Scheduled Ancient Monuments	"Tramroad at Ystradgunlais" *(a.k.a. Brecon Forest Tramroad – Claypons Extension)*	On site
	Bryn Llechwen ring cairn	90m (SW)

The border of the Brecon Beacons National Park is located approximately 85m to the NE of the northern site boundary.

The Gorsllwyn SSSI covers an area of approximately 40 hectares and comprises an upland mire located on a col between the Pyrddin and Dulais valleys. The peatlands within the mire are surrounded by an area of acidic grassland. The Gorsllwyn is deemed to be of interest as the mire landscape is rare with few other examples of this formation known in mid and south Wales.

The Nant Llech is a mountain stream that flows through a steep-sided valley of special interest on account of its rich variety of woodland species, cliff plant communities and Westphalian rock exposure. The site has been deemed critical for understanding the stratigraphy of the South Wales Coalfield due to the exposed sequence of over 120m of rock strata.

Through review of information presented within the Groundsure EnviroInsight report, multiple areas of 'ancient semi-natural woodland' and 'plantations on ancient woodland sites' have been identified. A small portion of the track route is shown to pass through an area of 'plantation on an ancient woodland site'. As set out in the National Planning Policy Framework (February 2019), *"development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland…) should be refused, unless there are wholly exceptional reasons…"*. However, as the areas identified refer to areas of 'ancient semi-natural woodland' and 'plantations on ancient woodland sites', it is anticipated that these will have limited impact on the planning process for the future developments.

The 'Tramroad at Ystradgynlais' (also referred to as the Brecon Forest Tramroad – Claypon's Extension) is a Scheduled Ancient Monument and was built in the 1830s to link the Brecon Forest Tramroad and the Swansea Canal with the Drum Colliery.

The Bryn Llechwen ring cairn is also a Scheduled Ancient Monument and is located approximately 90m to the southwest of the western site boundary.

11 Preliminary Conceptual Site Model

The following section details a preliminary conceptual site model. The conceptual site model highlights the potential sources of contamination, identifies the potential receptors and sets out the potential pathways which would allow for a pollutant linkage to form.

11.1 Sources

The potential sources identified are highlighted in individual sub-sections below. It should be noted that the presence of potentially contaminated ground and groundwater beneath the site can only be confirmed through intrusive ground investigation and subsequent chemical analysis of geo-environmental samples gathered. The following identified contaminants for each identified source are purely indicative.

Made Ground

Based on review of the BGS online GeoIndex, review of borehole logs from previous ground investigations and from review historical mapping/photographs, made ground deposits are anticipated to be encountered beneath the majority of the proposed track route. The made ground materials are anticipated to comprise material used for infilling of the various opencast sites (refer to Figure 11). This material is likely to comprise gravels, cobbles and occasional boulders of mudstone, siltstone and sandstone (refer to photographs 3, 4, 5 and 6 in Appendix A).

No chemical testing on the made ground (fill) materials has been undertaken to date. This material is unlikely to be impacted by significant contamination; however, given the extensive usage of motorised plant in opencast mining

activities over the past 75 years there is the potential to encounter localised pockets of hydrocarbon (TPHs) contamination as a result of spillages.

As previously highlighted within this report, the site has been impacted by both sub-surface and surface coal mining activities. The Abercrave/Gwaunton opencast mine excavated the area previously occupied by the Abercrave, International and Gwaunclawdd Collieries. There is the potential that contaminants associated with coal mining activities could be encountered within the backfill in these locations. Contaminants arising from the coal mining infrastructure and activity in the area may be present; typical contaminants may include various metals, metalloids, sulphates, PAHs, TPHs and asbestos.

Rail/Tram Lines

The Neath and Brecon Railway (main and junction lines) have been identified to have run adjacent to the northern (junction line) and southern (main line) site boundaries through review of historical mapping and historical aerial photographs. In addition, three tramways (including the Brecon Forest Tramroad) have been identified to have crossed into the site through review of historical mapping and historical aerial photographs. Potential contaminants associated with rail/tram lines typically include various metals, TPHs, PCBs, PAHs, herbicides, ferrous residues, metal fines, ash, sulphates and asbestos.

Fuel Tanks

From review of site walkover photographs (see Photograph 7), a group of four large cylindrical tanks were identified to be present close to the site compound and offices centrally located within the site.

These tanks are likely to be fuel tanks or at the very least contain some form of hydrocarbon-based substance due to the nature of the flammable warning signs observed to be present. The tanks are above ground however, there is the potential that spillages and leakages may have occurred and as a result the soils and groundwater present in this location could potentially be impacted by hydrocarbon contamination.

Pollution Incidents

From review of the Groundsure EnviroInsight report, two pollution incidents have been recorded by the NRW within the site; an additional two pollution incidents were recorded <5m away from the site boundary taking the total to four. All four of the incidents were located within or within the direct vicinity of the washery portion of the site. The pollution incidents are detailed below.

In 2013 a pollution incident was recorded within the washery portion of the site (E: 283823, N: 210346). The pollutant was identified as ‘Coal’ and the impact to water was categorised as Category 2 (significant impact). No impact to land or air was recorded (both Category 4).

In 2001 a pollution incident was recorded within the washery portion of the site (E: 285452, N: 210250). The pollutant was identified as ‘Sewage Materials’ and the impact to water was categorised as Category 3 (minor impact). No impact to land or air was recorded (both Category 4).

In 2014 a pollution incident was recorded 1m to the south of the washery portion of the site (E: 285288, N: 210222). The pollutant was identified as 'Construction and Demolition Materials and Wastes' and the impact to both land and air was categorised as Category 3 (minor impact). The impact to water was not categorised.

In 2001 a pollution incident was recorded 4m to the northeast of the washery portion of the site (E: 285503, N: 210298). The pollutant was identified as 'Sewage Materials' and the impact to water was categorised as Category 3 (minor impact). No impact to land or air was recorded (both Category 4).

The pollution incidents presented above are anticipated to have had a localised impact to the soils and groundwater beneath the washery portion of the site. However, given the categorisation of these incidents the level of contamination is anticipated to be minor.

Landfills

No landfill sites have been identified within the site. From review of the Groundsure EnviroInsight report, the following historic landfills, see are located within 1km of the site boundary:

Table 7 – Historic Landfill sites – NRW Dataset

Name	Direction and distance from site	Type of Waste Accepted	Year of Closure
Moorside Villas	473m (NW)	Commercial Household	1974
Cowlbren	612m (N)	Unknown	Unknown

As neither of these landfills impact the site directly, the risk of encountering potential contamination associated with these two locations is considered to be negligible.

11.2 Receptors

The following potential receptors have been considered within the preliminary conceptual site model.

Human

- Construction workers/maintenance workers

  During the construction of the proposed cuttings and embankments, construction workers will be exposed to the soils and groundwater present beneath the site.

  Post construction, maintenance workers have the potential to be exposed to the soils and groundwater present beneath the site if works involving excavation activity is required.

- Site users

Post construction, site users are anticipated to include train drivers and maintenance workers carrying out works on the proposed test track. The train drivers are not considered to be vulnerable as they are highly unlikely to come into contact with soils and groundwater found beneath the site.

- Site neighbours

  Site neighbours includes people living in the various towns and villages that surround the site. This is particularly relevant to residents of Onllwyn which directly borders the site.

Environmental

- Surface Water

  Numerous surface water features have been identified to pass through the proposed site. These features are all small streams which are tributaries of the larger streams and rivers that surround the site.

- Groundwater

  The South Wales Coal Measures Formations that lie beneath the site are designated as Secondary (A) Aquifers. There are no known groundwater abstraction licenses within 500m of the site boundary however there may be unlicensed groundwater abstraction points surrounding the site.

11.3 Pathways – Pollutant Linkages

For a pollutant linkage to exist, an identified pathway has to be present to link a source to a receptor. The pathways identified have been split between human and environmental receptors and are presented below.

Human

- Ingestion of soils, soil dust and groundwater

  During construction, construction workers and site neighbours have the potential to come into contact with contaminated soils through ingestion of soils and soil dust.

  Post construction limited migration of soils and soil dust is anticipated to occur and therefore the likelihood of site neighbours to come into contact with potentially contaminated soils is negligible. However, maintenance workers have the potential to come into contract with contaminated soils through ingestion of soils and soil dust.

- Dermal exposure to soils, soil dust and groundwater

  During construction, construction workers are likely to experience dermal exposure to potentially contaminated soils, soil dust and groundwater. In addition, site neighbours also have the potential to experience dermal exposure to potentially contaminated soil dust that migrates from the site works.

  Post construction, maintenance workers are likely to experience dermal exposure to potentially contaminated soils, soil dust and groundwater.

- Inhalation of particulate matter and soil vapours

  During construction, construction workers and site neighbours have the potential to be impacted by contaminated soils through inhalation of particulate matter and soil vapours.

  Post construction, particulate matter and soil vapour is unlikely to migrate and therefore the risk of exposure to sit neighbours is considered to be negligible. However, there is a residual risk of exposure to maintenance workers.

Environmental

- Leaching and vertical/lateral migration

  The various excavation works currently proposed have the potential to introduce preferential flow paths for groundwater from the potentially contaminated superficial material (made ground) to the Secondary (A) Aquifer of the underlying solid geology.

- Surface run-off

  Breaking the ground, moving materials and formation of temporary storage stockpiles of made ground/fill may result in increased contaminant mobilisation due to increased exposure to rainfall. As this material has the potential to be contaminated, there is therefore the risk of surface run-off from the earthworks migrating migrate to the various surface water features that originate within the site.

- Direct discharge as a result of dewatering

  During the earthworks there may be a need to dewater the excavations. The removed water could be discharged to the wider site drainage or ground and, if contaminated, could potentially impact the receiving controlled water receptors.

12 Unexploded Ordnance

A preliminary risk assessment for the presence of buried unexploded ordnance (UXO) covering the site has been undertaken in accordance with CIRIA C681. The preliminary risk assessment has not been carried out by a UXO specialist and the assessment has been based on a desktop review of historical information regarding site location and previous site development.

12.1 The Site

The site is approximately 500 hectares in plan area. The site lies roughly ~20km to the northeast of Swansea and is bordered by the town of Ystradgynlais to the west and the village of Onllwyn to the east.

The site boundary roughly sits at around 250m AOD with the land rising towards the centre of the site. The majority of the central portion of the site is at around 295m AOD with localised artificially raised areas of land reaching 335m AOD. The “washery” portion of the site sits lower than the main portion of the site at roughly 230m AOD.

Based on review of current online aerial photography, the main portion of the site is shown to be a moorland type area with significant evidence of opencast mining activity. The majority of the active opencast evidence is present to the west of the main portion of the site although areas of land that appear to have been backfilled opencast sites are present in the east of the site. The centre of the main portion is shown to contain artificially raised "overburden storage area/layer-cake" spoil heaps. These areas of land are significantly raised compared to the surrounding area with the largest

The "washery" portion of the site is shown to contain a varied array of coal processing infrastructure with a limited network of rail lines running along an east to west alignment towards the north of the site. The land surrounding the coal processing infrastructure appears to be raised industrial scrubland with minimal vegetation cover.

12.2 Geology

Based on review of published geological sources, the site is shown to have a limited and discontinuous cover of superficial deposits. Glacial till deposits, covering a minimal plan area, are shown to be present along the southern and western boundaries of the site. Glacial till material tends to comprise a heterogenous mixture of predominantly clay sized material, with sand, gravel and larger cobble and boulder sized inclusions. In addition, a small peat deposit is shown to be present within the central portion of the site.

12.3 Proposed Works

The proposed earthworks include comprehensive cut and fill activities to form a range of embankments and cuttings; the embankments and cuttings are required to form the base for a rail test track facility. Based on current ground levels it is anticipated that cuttings of up to ~30m deep and embankments of up to ~40m high will likely be required. The majority of the cuttings proposed are through backfilled opencast sites with a few sections of rock cut anticipated.

12.4 Site History

Based on review of aerial photography from 1945, the main portion of the site is shown to be free from any major development and appears to comprise moorland with numerous small fluvial valleys originating from the centre of the site. Significant coal mining activity is shown along the northern boundary (Abercrave, Gwaun Clawdd and Ynyscedwyn Collieries) and the southern boundary (Onllwyn, Dulais and Seven Sisters Collieries). A linear alignment of minor cuttings and embankments is shown to cross along the southern boundary of the site. From review of historical mapping this alignment is labelled as an 'Old Tramway'; the tramway is labelled 'Old' on the earliest available historical mapping from 1876 which suggests that the tramway had long been disused at the time of WWII. The "washery" portion of the site contains the Onllwyn Washery with multiple rail lines and stockpiles present.

Post WWII, the site has undergone significant opencast mining activities. The progression of opencast activity has progressed from east to west with the earliest opencast site, Onllwyn (1949), being located beneath the eastern boundary of the main portion of the site and the most recent opencast site, Nant Helen Extension (2002 - present), being located beneath the western boundary of the site. The "washery" portion of the site appears to have remained relatively unchanged since WWII with a slight reduction coal processing infrastructure noted; a raised portion of the industrial scrubland to the north of the Onllywn Washery has possibly been formed from the stockpiles noted from the 1945 aerial photography.

12.5 Evidence of previous military land-use

The site located has historically been used for coal mining with no evidence of military use in the direct vicinity of the site. From a review of potential military sites collated on the Coflein website, no major military targets have been identified within a 10km radius of the site [18].

Swansea is located approximately 20km to the southwest of the site. Swansea was a target of major Luftwaffe bombing raids during WWII and was the most heavily bombed location in South Wales. However, given the distance, it is unlikely that the site will have been impacted by Luftwaffe bombing raids targeted at Swansea.

12.6 Potential for aerially delivered ordnance

The Zetica regional unexploded bomb risk map for Glamorgan shows that the site is located within a low bomb risk map. In addition to the regional unexploded bomb risk map, a bespoke unexploded bomb risk map for the site has been freely downloaded from the Zetica website, see Figure 13 below.

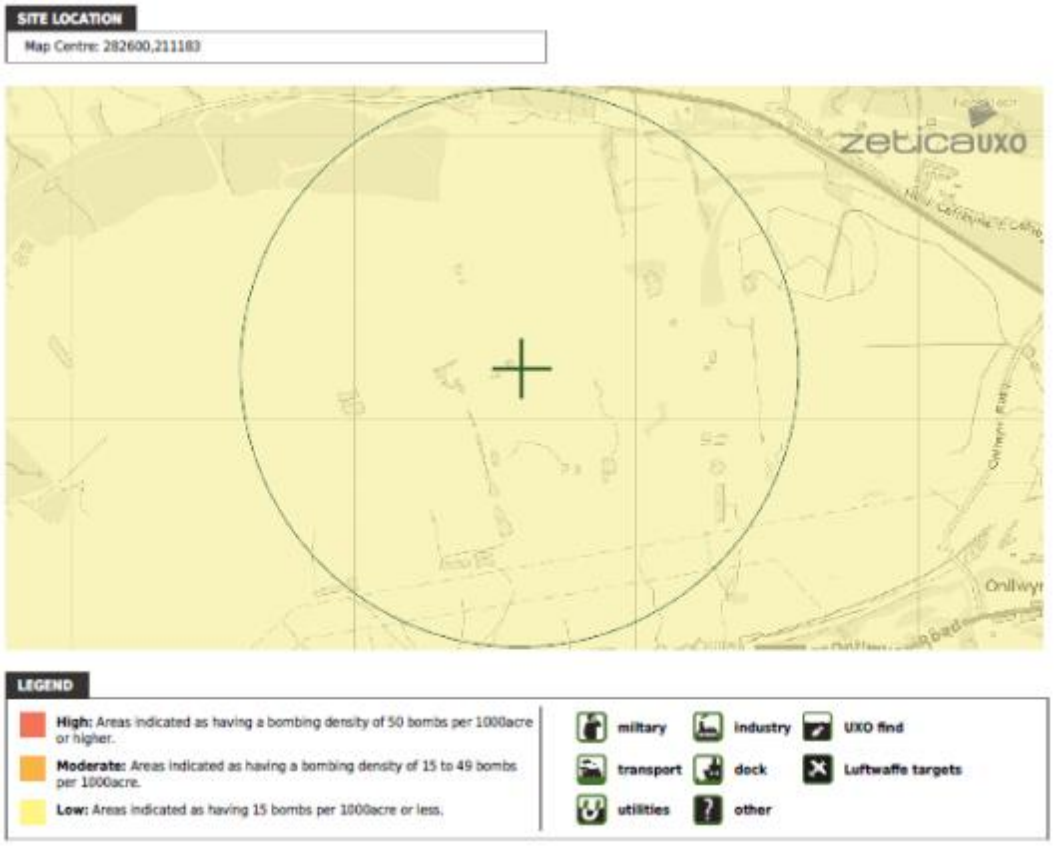

Figure 13 Zetica Unexploded Bomb Risk Map

As shown above, the site sits within a low risk area. A low risk area is defined as an *"area indicated as having 15 bombs per 1000 acres or less"*. As set out by Zetica, a low risk area suggests that there is no greater probability of encountering UXO than anywhere else in the UK. Therefore, the potential for aerially delivered ordnance is low.

12.7 Consideration of mitigating factors

The predominantly firm nature of the glacial till superficial geology and reported lack of superficial geology in some areas of the site, means that had any aerially delivered ordnance been dropped it is highly likely to have detonated upon impact. Also, given the general absence of soft superficial deposits, other than areas of peat in the central areas of the site it is likely that any UXO would have been discovered on the ground surface and dealt with.

No previous military land use was identified within a 10km radius of the site. The collieries and rail infrastructure present surrounding the site at the time of WWII do represent a potential target for WWII Luftwaffe bombing raids. However, given the localised nature of Luftwaffe bombing raids in Wales (primarily concentrated on Swansea, Cardiff and Milford Haven), it is unlikely that the collieries surrounding the site would have been targeted.

The extensive nature of post WWII development to the site, primarily regarding opencast mining activity, further reduces the risk of UXO encounter. This is particularly relevant when considering that the majority of cuttings currently

proposed pass through areas of previously backfilled opencast sites. The remaining cuttings are proposed through areas where superficial deposits are anticipated to be minimal. The areas of peat which were historically present will generally have been worked out during the open-casting operations that historically took place on the site.

12.8 Conclusions and recommendations

Based on the preliminary UXO risk assessment detailed above, the risk of UXO encounter beneath the site is considered negligible. As a result, a detailed UXO risk assessment is not deemed to be required.

13 Preliminary Engineering Assessment

From the information available, a preliminary geotechnical and geo-environmental assessment has been undertaken to identify the potential constraints at the site.

The engineering assessment has considered issues regarding settlement, the earthworks proposed, the potential for material re-use, issues regarding groundwater and potential foundation options for the structures proposed.

13.1 Settlement

A literature review regarding the estimation of settlement at the site was undertaken using the following documents:

- BRE Report – Building on Fill: Geotechnical Aspects (3rd edition)[13];
- BRE Information Paper IP 5/97 – Building on Fill: Collapse Compression on Inundation [14];
- BRE Information Paper IP 15/85[15];
- British Coal Opencast: State of the Art Review of The Compaction of Opencast Backfill. Report No. 90CPC/GEO/095 dated March 1997 by Scott Wilson Kirkpatrick (3 vols) [16];
- Building on uncompacted dumps in the Rhenish brown coal area of the Federal Republic of Germany. Lange S. 1986 [17].

For opencast backfills such as the ones on site, the mechanisms of ground movement include:

- long term creep settlement – most settlement occurs;
- settlement due to inundation;
- heave movements associated with inundation and/or stress relief;
- movements as a result of load imposition.

The primary factor affecting magnitude of these settlements is degree of compaction. Uncompacted fills (e.g. by end tipping in thick layers) show the most settlement. Other controlling factors which need to be considered include backfill properties (e.g. particle size and shape, grading, particle strength hydraulic properties), shape, depth and extent of excavation, location of spoil mounds, haulage roads and hydrogeological effects.

13.1.1 Creep settlement

Most settlement occurs during and soon after backfilling. Assuming that the majority of backfill is granular; major settlements are likely to have occurred almost immediately upon backfilling.

Further movement then occurs gradually and is known as long term creep settlement, the rate of movement decaying linearly when plotted on a log-time scale. The slope of the graph of movement versus log time is known as the logarithmic creep compression parameter, α.

For opencast backfills containing sandstone/mudstone rockfill, conservatively assumed to have been non-engineered (i.e. has had no systematic compaction), this parameter typically lies in the range 0.9% to 1.5% [13]. This range of α values have been used to determine the likely rate of creep settlement occurring in the areas of opencast that have since been backfilled.

In addition, following the BRE building on fill guidance [13], a less conservative logarithmic creep compression parameter value of 0.34% for the Nant Helen opencast site has been calculated for engineered (i.e. heavy vibrating roller compaction) sandstone/mudstone rockfill. The backfill has been assumed to be dry ($\therefore \sigma_v' = \sigma_v$).

Sandstone/mudstone rockfill	Heavy vibrating roller	0.13 σ'_v
Sandstone/mudstone rockfill	No systematic compaction	0.9–1.5

The creep settlement has been estimated for various values of a logarithmic creep compression parameter (α) using the equation below.

$$\alpha = \Delta s/[H \log (t_2/t_1)]$$

Where, 'Δs' refers to the settlement of an embankment of height 'H' between times 't_2' and 't_1'.

A general assessment of the magnitude and timescale of future movements, considered sufficient to establish the feasibility of development plans, has been made using desk study information on the geometry/depth, age, type and hydrogeological regime of the backfill, together with settlement monitoring records.

Refer to Figure 14 for the estimated rate of creep settlement for different α values for the Nant Helen opencast site. The Nant Helen opencast site was chosen to illustrate the potential rates of creep settlement as the site represents the deepest of the backfilled sites (~130m).

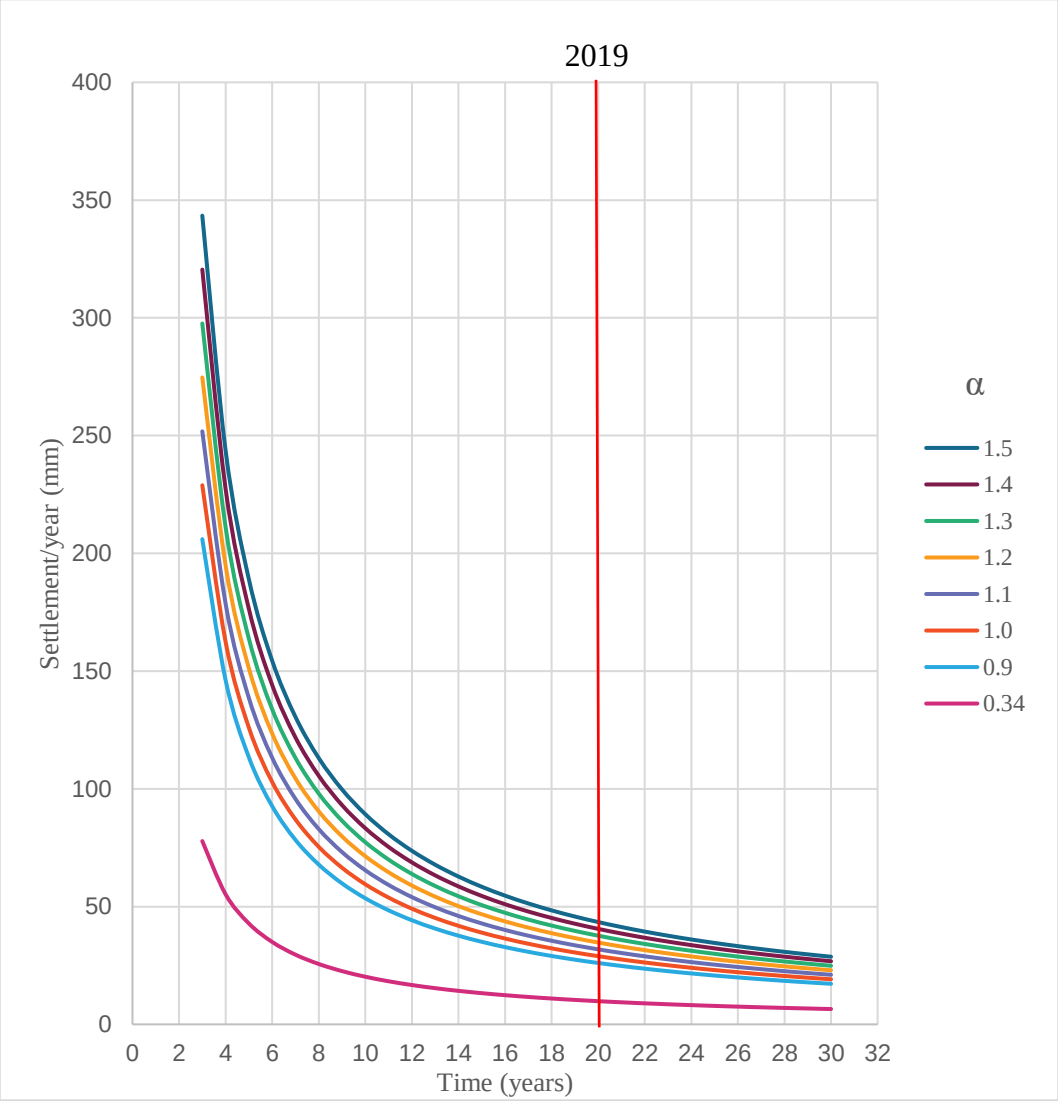

Figure 14 Creep settlement rate for different α values (Nant Helen 1999)

For all alpha values, based on this assessment the current creep settlement rate is anticipated to be in the range of 10-50mm per year.

As highlighted in Figure 14 above, the risk of creep settlement is considered to be greatest within the areas that have been recently been backfilled. This risk particularly pertains to the Nant Helen Extension site beneath the western boundary of the site where the opencast void is yet to be backfilled.

The detailed design of remediation works and foundation solutions will need to consider the effects of specific features such as spoil mounds, sloping sides of excavation, potential “hard spots” at edge of excavation and hydrological/ hydraulic features in the proposed development.

A suitable scope of ground investigation works will need to be undertaken to provide information on the detailed geotechnical properties of the backfill.

13.1.2 Inundation settlement of fill following the rebound of the groundwater level

Inundation settlement occurs relatively rapidly following inundation of susceptible fill materials by groundwater or surface water. Sensitivity to inundation settlement depends on air voids content prior to saturation. Inundation settlement is negligible when air voids are less than 5% and of small magnitude when air voids are less than 10%. On the other hand, linear strains of the order of 3% to 5% have been measured in many loose fills [14].

This is likely to affect the western part of the site mainly, where dewatering activities are currently being undertaken to allow for the excavations within the Nant Helen Extension opencast site. Once dewatering is ceased, the groundwater levels in this region will rebound to a certain level. Given the general lack in groundwater information for the site, this rebound will have to be monitored to determine the level to which groundwater will rise post completion of opencast working. This monitoring should be undertaken site wide; initially to gain an appreciation for the groundwater level currently beneath the site and to then measure the change in groundwater level, if any, that occurs once the dewatering measures are stopped.

As inundation settlement can be mitigated somewhat through control of air voids within the fill material, opportunities to minimise this risk during the filling of the current opencast voids located to the west of the site should be fully explored.

13.1.3 Potential differential

There is the potential for differential settlements to occur along the proposed track route. This is due to the fact that the areas of backfill will settle whereas the areas that have not been subject to opencast working are unlikely to settle.

There is likely to be a degree of differential settlement within the areas of backfill themselves. This is due to the fact that total settlement is dependent on the thickness of fill; as the thickness is not constant, the areas with greater thicknesses of fill will settle more than those with a shallower thickness.

In order to mitigate against differential settlements at the surface, improvement of near surface materials could be considered. It should be noted however that this would not eliminate total settlements. Improvement of near surface materials could be achieved by:

1. Excavating and recompacting
2. High Energy Impact Compactions (HEIC) (likely to improve the upper ~3m)
3. Dynamic Compaction (likely to improve the upper ~10m)
4. Surcharge
5. Grouting

Alternatively, a rigid base to track bed could be proposed. This would mitigate against the risk of minor differential settlements but would likely require comprehensive piled foundations, which would not be a feasible solution for the deeper areas of fill.

As settlement is likely to occur at the highest rate within the areas that have most recently been backfilled, altering the proposed alignment to avoid the most recent areas of opencast mining would minimise the risk of differential settlement. Ideally the alignment should be altered to avoid the areas of recently backfilled material where possible.

13.1.4 Heave

Elastic heave movements can occur when cuttings are formed through fill material or on removal of surcharge mounds. Heave can also result from the swelling of near surface deposits caused by water ingress and seasonal moisture content changes.

The risk of heave should be considered in any areas where removal of material from the large overburden storage areas is proposed or any areas where extensive cuttings are proposed.

13.2 Proposed Earthworks

The extent and size of cuttings and embankments required is dependent on the proposed track level. The slope angles of the cuttings and embankments are dependent on material. Based on the anticipated nature of the material used for the embankments and cuttings, and the anticipated groundwater regime across the site, the following slope gradients have been estimated to ensure stability with adequate factors of safety:

- Embankments – 1:3
- Cuttings (coal measures) – 1:1
- Cutting (backfill) – 1:2.5

It should be noted that the slope angles for the cuttings and embankments proposed here are indicative only, and should be verified following ground investigation on the basis of stratigraphy, material and mass properties and the results of groundwater monitoring.

13.2.1 Areas at Risk of Shallow Mine Workings

The risk zones identified in Section 9 of this report highlight the areas where opencast working has not been undertaken and shallow mine workings may be present. Within such areas of shallow mine workings, the development proposals may be susceptible to impacts from potential subsidence events. Excavation of cuttings would reduce the thickness of cover over the workings, increasing the risk that ‘crown hole’ collapse could propagate to the surface and affect the proposed development.

For example, in 'Risk Zone A' workings <20m below the existing rockhead are anticipated. Workings within this range present the highest risk of subsidence as a result of roadway collapse. Given the age of the workings, roadway collapse may occur due to the degradation of supports present at any time.

The cuttings are likely to reduce the depth to workings, and in some cases expose wokrings, due to the removal of material. This is likely to bring more workings within the 20m (particularly in 'Risk Zone A') range which has been highlighted as highest risk.

Engineering measures are likely to be required to effectively lower the risk of shallow working related subsidence within risk zones. This could include bulk infilling of mining voids such as grouting of voids (or use of gravel where drainage pathways need to be maintained), or use of high strength geogrids to temporarily or permanently span potential subsidence features.

13.3 Potential for Material Re-use

An assessment of the suitability of material re-use in the construction of the numerous embankments proposed will be necessary as part of the scope of ground investigation works. From review of the site walkover photographs, much of the made ground fill material anticipated to be encountered within the backfilled opencast sites is likely to comprise gravels, cobbles and occasional boulders of mudstone, siltstone and sandstone. This material is expected to be predominantly granular, predominantly comprising the non-coal bearing material that has been excavated during opencast working.

This material is also likely to be representative of the material that would be generated during the excavation of the cuttings required through areas of previously unworked Coal Measures Formations.

From a geotechnical perspective, this material is likely to be suitable for re-use subject to processing to reduce the maximum particle size and achieve a suitable grading, and removal of any coal that may still be present.

The glacial till natural superficial material is also likely to be geotechnically suitable for re-use in the formation of the embankments required.

The deposits of peat are likely to be unsuitable for reuse as a fill material. Furthermore, if present, it is likely that any peat present in at grade sections or beneath the proposed embankments will have to be excavated and removed from the areas or treated prior to construction.

The geotechnical suitability for material re-use, can only be confirmed through geotechnical sampling and subsequent testing of the materials present within the opencast areas that have been backfilled.

From a geo-environmental perspective, the potential contaminative nature of made ground fill material must be assessed in order to determine the suitability for re-use. Human health and controlled waters risk assessments will be required to determine the geo-environmental suitability for re-use.

13.4 Groundwater

As discussed in Section 13.1.2, further understanding of groundwater levels beneath the site is required to inform assessment of inundation settlements.

Groundwater has the potential to impact the settlement in the areas of backfill and affect the proposed cuttings. It is recommended that a ground investigation is undertaken to ascertain the groundwater level beneath the site.

13.5 Foundation Options – Structures proposed

In addition to the track loops, it is envisaged that a platform environment, facilities for rail storage, train decommissioning areas and other testing facilities may also be included as part of the developed works.

The proposals are likely to comprise the construction of numerous structures of various sizes. These structures may be located within the main area of the site and also within the washery portion of the site.

In the main portion of the site outside any areas of historical opencast activity it may be feasible to found buildings on pad or raft foundations with the glacial till or on top of the relatively shallow bedrock.

The layout of the development should consider the risks presented by ongoing settlement of the backfill.

It may be feasible to found buildings within the areas of previous opencast activity on pad and raft foundations. This is subject to future ground investigation of the ground conditions and careful consideration of the potential magnitude of settlements; in-particular, the differential settlement that may occur within the backfilled opencast workings. Understanding the location of the historical workings will be important for assessment of potential variations in settlement across the site.

Regardless of ongoing settlements, any heavily loaded buildings in these areas may require the use of piled foundations or some form of ground improvement to limit potential settlements under loading to acceptable limits.

As highlighted within the ground conditions section of this report, artificial material (made ground) overlying natural superficial material (predominantly glacial till, potential for peat) is likely to be encountered within the washery portion of the site. The depth to weathered rockhead is anticipated to vary, up to depths of 7.0m bgl based on the logs reviewed. The descriptions from boreholes progressed within the washery portion of the site suggest that the bedrock is comprised of mudstones and siltstones which are slightly to moderately weathered and are moderately weak to strong.

Based on the anticipated ground conditions in the washery portion of the site, it is possible that piled foundations may be required; however, it should be noted that the foundation type is highly dependent on the loading of the structures proposed. For example, smaller structures with lower loading may be able to be founded on pad or raft foundations.

The subsidence risks associated with shallow mine workings will need to be considered as part of the foundation selection regardless of the foundation type selected some form of mine workings treatment or mitigation is likely to be required within identified risk zones.

The extent of ground treatment and foundation selection will need to be reviewed once more detailed assessment of mining risks and ground investigations have been undertaken.

It is recommended that the development masterplan is developed to minimise risks associated with potential total and differential settlement associated with former backfilled opencast areas, potential mining related subsidence associated with shallow underground mine workings.

14 Geotechnical Risk Register

The Geotechnical Risk Register has been established and will be updated as the scheme progresses and when constraints or opportunities are identified.

Table 8 – Geotechnical Risk Register

Hazard		Consequence	Mitigation Measures
1.	Differential settlement between areas of undisturbed ground and infilled ground.	Potential for structural damage and serviceability issues with the test track and associated structures and infrastructure.	Ground investigation and testing to better understand the make-up of infill – determine geotechnical design parameters for undisturbed and infilled ground. Monitor existing ground movements in order to test theoretical information regarding ongoing ground movements in areas of backfilled opencast workings. Monitor groundwater and undertake detailed hydrogeological risk assessment to understand potential changes in the hydrogeology and potential for future inundation settlement.
2.	Continuing total and differential settlement of infilled areas (associated with backfilled former opencast works).		Develop masterplan and detailed design taking account of areas of higher risk and avoiding these where possible.
3.	Inundation settlement of the infilled areas due to groundwater rebound once dewatering stopped as a result of changes in groundwater regime due to installation of new drainage/soakaways.		Ensure that foundation solutions for structures make due allowance of potential ground movements during design life.
4.	Inundation settlement of the infilled areas due to creation of new drainage paths e.g. installation of drainage across the site.		Design for ground movements e.g. ensure flexible joints in any drainage pipes, incorporate suitable gradients for drainage runs to minimise risks of drainage backing up in the event of differential ground movements occurring.
5.	Potential for significant ground heave in areas of deep cuttings.		Design for regular maintenance, e.g. tamping of track as part of overall development strategy.
6.	Shallow underground coal workings and associated mine entries, including shafts and adits have been identified to be present beneath sections of the proposed cuttings and embankments	Potential subsidence as a result of underground working of mine entry collapse leading to failure of track and potential train derailment in the permanent case.	Comprehensive review of all available mine abandonment plans pertaining to workings that are closest to the surface of rockhead (~20m below rockhead).

Hazard		Consequence	Mitigation Measures
		Risk of encountering underground workings or intact coal seams in the areas of proposed cut. This will need to be considered both in terms of developing safe construction methodologies and permanent works to ensure stability and safety of the final earthwork.	Undertake ground investigation comprising a mixture of intrusive and non-intrusive (e.g. non-intrusive gravity surveys) works in order to locate potential shallow mine workings. If shallow mine workings are identified, mitigatory measures such as grouting of voids may be required to negate the risk of subsidence beneath the proposed track route.
6.	Oversteep slope angles in proposed cuttings and earthworks	Failure of earthworks: Cutting – material on the tracks causing derailment Embankment – failure of embankment and track causing derailment.	Ground investigation – design geotechnical parameters and slope stability calculations.
7.	Encountering potentially hazardous material from historical and current mining activities within the infilled areas.	Risk of encountering made ground which is potentially hazardous to human health and controlled waters.	Undertake ground investigation and sub-sequent sampling on geo-environmental samples gathered to determine the type and degree of contamination if present.
8.	Potential for instability within rock cuttings or beneath embankments as a result of failure along discontinuities and weak bedding layers within the coal measures (such as coal seat earths).	Large scale instability of rock cuttings.	Design appropriate cutting slopes and if necessary incorporate stabilisation measures such as rock anchors.
9.	Pyrite is known to be present within the Coal Measures bedrock.	Pyrite containing bedrock can present aggressive conditions to concrete foundations.	Undertake ground investigation and subsequent aggressivity testing of samples gathered to determine the potential threat to concrete foundations.

15 Conclusions and Recommendations for Further Work

Through undertaking this desk-based study of the 'Land at Nant Helen and Onllwyn Coal Washery' site the following conclusions have been made.

As identified through review of published geological sources, whilst the majority of the site is shown to have limited natural superficial soil cover, localised areas of glacial till and peat are likely to be encountered.

The superficial material is underlain by the South Wales Lower and Middle Coal Measures Formation. A significant number of coal outcrops are present within the site boundary. A number of approximately North-South trending faults cross the site. The solid geology beneath the site is likely to be complicated on account of the various anticline and syncline features which have been identified through review of published geological mapping sources.

The site has been significantly impacted by both opencast and underground coal mining activity. Large areas of the site have been subject to opencast mining activity. Most of the former opencast areas have been backfilled. The depth of backfill pertaining to each has been estimated from review of opencast completion plans with ~130m of backfill material likely to be present within the original Nant Helen opencast site. The Nant Helen Extension opencast site has reached depths of up to 150m, however this site is yet to be backfilled. The backfill material is likely to be settling at variable rates due to the varied depths of deposition and the assumed 'non-engineered' backfilling methods.

From review of limited abandonment plans provided by Celtic Energy, localised areas of shallow underground mine workings are present; in places these workings are anticipated to be within 20m of rock head. Based on review of the coal mining information provided on the site, four risk zones (A through D) have been identified. These risk zones cover the sections of proposed track where underground workings are likely to be present at less than 20m depth below rockhead; essentially these zones pertain to the sections of the track that are shown to lie on land that has not been opencast previously.

Numerous watercourses are shown to flow through and originate from certain sections of the main portion of the site. These watercourses are predominantly small in nature and are tributaries to the River Tawe, Dulais River and River Pryddin that surround the site. Multiple pond features have been identified within the site; these features are a mixture of natural and man-made features. The majority of the site is not at risk of flooding with only a very small section at the easternmost corner of the washery portion of the site being at risk.

The groundwater level beneath the site is relatively unknown as the Nant Helen Geotechnical borehole logs reviewed provided no information regarding the groundwater level. However, from review of the Nant Helen Extension Environmental Statement from 2011, the groundwater level in the west of the site was previously recorded to sit at around 120m AOD; this suggests that

groundwater is at around 170m below ground level in this location. Due to the extensive nature of the underground workings anticipated beneath the site, it is likely that the site is underdrained by these workings particularly by adit mine entries discharging to the River Tawe to the north of the site. Shallow groundwater strikes were recorded in the borehole scans reviewed pertaining to boreholes within the washery portion of the site.

The preliminary conceptual site model has identified the potential for certain pollutant linkages to be formed during future site works. These linkages pertain to the potentially contaminated nature of materials that will be encountered beneath the site. The level of contamination is yet to be assessed however a number of potential sources, primarily based on the site's industrial past, have been identified.

Following a preliminary unexploded ordnance (UXO) risk assessment, the risk of encountering UXO beneath the site is considered to be negligible. As a result, a detailed UXO risk assessment is not likely to be required.

15.1 Settlement Monitoring

In order to better understand the potential settlements that are occurring within the areas of opencast workings which have since been backfilled, settlement monitoring using permanent ground markers installed at surface is recommended. The monitoring information would be useful and would be supplemented with intrusive ground investigation as the project progresses.

Settlement monitoring will be useful to ascertain the current rate of ongoing creep settlement within the areas of backfill and potentially monitor settlements which occur post-inundation once dewatering activity associated with the current opencast workings is ceased. Groundwater level monitoring will be required to determine the rebound of the groundwater level that occurs once dewatering measures are stopped. The scope of settlement monitoring should be developed to allow an assessment of potential total and differential creep movements over the design life of the development to be better understood and provide greater certainty regarding the potential impacts of this; the monitored settlements can then be compared with the theoretical 'creep movements' determined as part of this study.

15.2 Detailed Mine Workings Study

Given the extensive nature of underground working shown to be present beneath the site it is recommended that an additional study is undertaken to provide a comprehensive review of the underground workings that are likely to be present beneath the site.

Through consultation with the Coal Authority, a total of 42No. abandonment plans have been identified in relation to the shallow workings beneath the site. It is recommended that these plans are purchased at a later date and a comprehensive review of the shallow workings recorded beneath the site is undertaken. This review would allow for the areas that are potentially at risk of subsidence to be

much better understood and will better inform the scope of ground investigation ultimately proposed.

15.3 Ground Investigation

It is recommended that ground investigations are undertaken. This ground investigation is likely to require both intrusive and non-intrusive works in order to ascertain information on the site that is currently lacking. Ground investigation is required to;

- Confirm the ground and groundwater conditions beneath the site, including the different areas of former opencast workings - primarily focusing on the current proposed track route. In-situ testing and geotechnical sampling with subsequent testing will be required to determine the geotechnical properties of the materials encountered which will then feed into the design of the cuttings and embankments proposed;
- Investigate the composition and in-situ properties of the fill material within the backfilled opencast sites which are located beneath the proposed track route. This is required to be able to better understand the potential settlements that are likely to arise as a result of long term creep settlement. Investigation of the groundwater level within these areas and interpretation of the change in groundwater level, post completion of all opencast activity, will help inform the likely inundation settlements that could occur as a result;
- Identify the potential presence and significance of contaminated ground and groundwater beneath the site. Geo-environmental testing with subsequent chemical analyses will be required to allow suitable risk assessments to be undertaken both for the discharge of planning conditions and for the design and specification of any necessary site remediation works required;
- Determine the depth to underground workings, if present, beneath the proposed track route through intrusive investigation (probing) and potentially also geophysical methods (e.g. Gravity surveys or magnetic surveys to locate shaft locations). If identified information will need to be suitable to allow for the design of treatment measures such as grouting of mining related voids. The information should also be sufficient to allow an assessment to be made of the potential impacts of mine-workings treatment on the hydrogeological regime.

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Figures

Figure 1 Site Location Plan

Figure 2 Outline Scheme Earthworks Proposals

Figure 3 Site Walkover Photo Locations

Figure 4 Select Historical Features

Figure 5 Solid and Drift Geology

Figure 6 Linear Geological Features

Figure 7 Hydrological Features

Figure 8 Identified Extents of Below Ground Workings

Figure 9 Identified Extents of Opencast Workings

Figure 10 Sensitive Land Uses

Figure 11 Illustrative Geological Section

The following figures have been included in the main body of the report.

Figure 12 Extract from 1945 aerial photography showing potential ‘bell pitting’

Figure 13 Zetica Unexploded Bomb Risk Map

Figure 14 Creep settlement rate for different α values (Nant Helen 1999)

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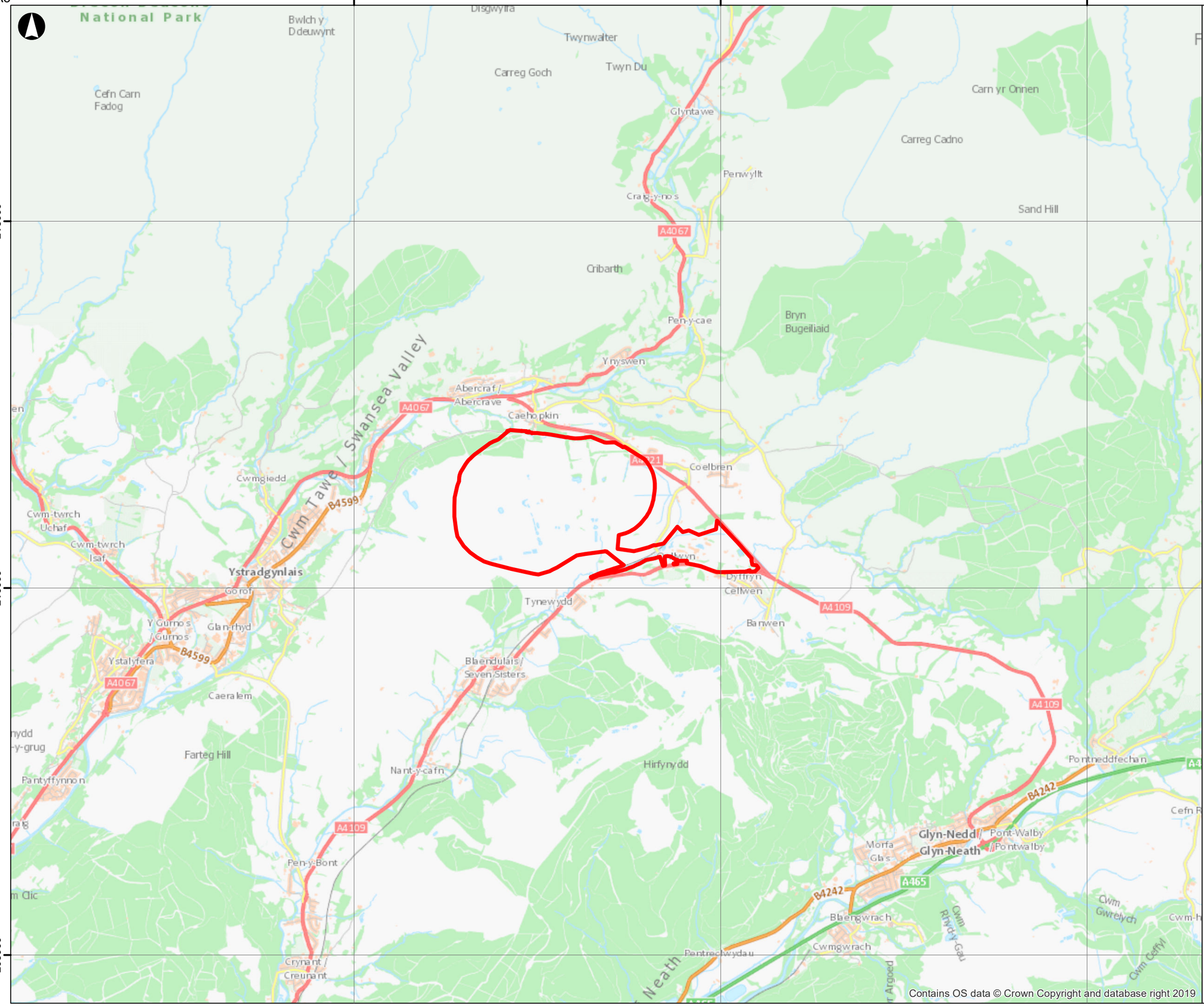

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Coordinate System: British National Grid

Metres

0 500 1,000 2,000

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Project Title
Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Site Location Plan

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Role
Geotechnical

Suitability
For Information

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Name
Figure 1

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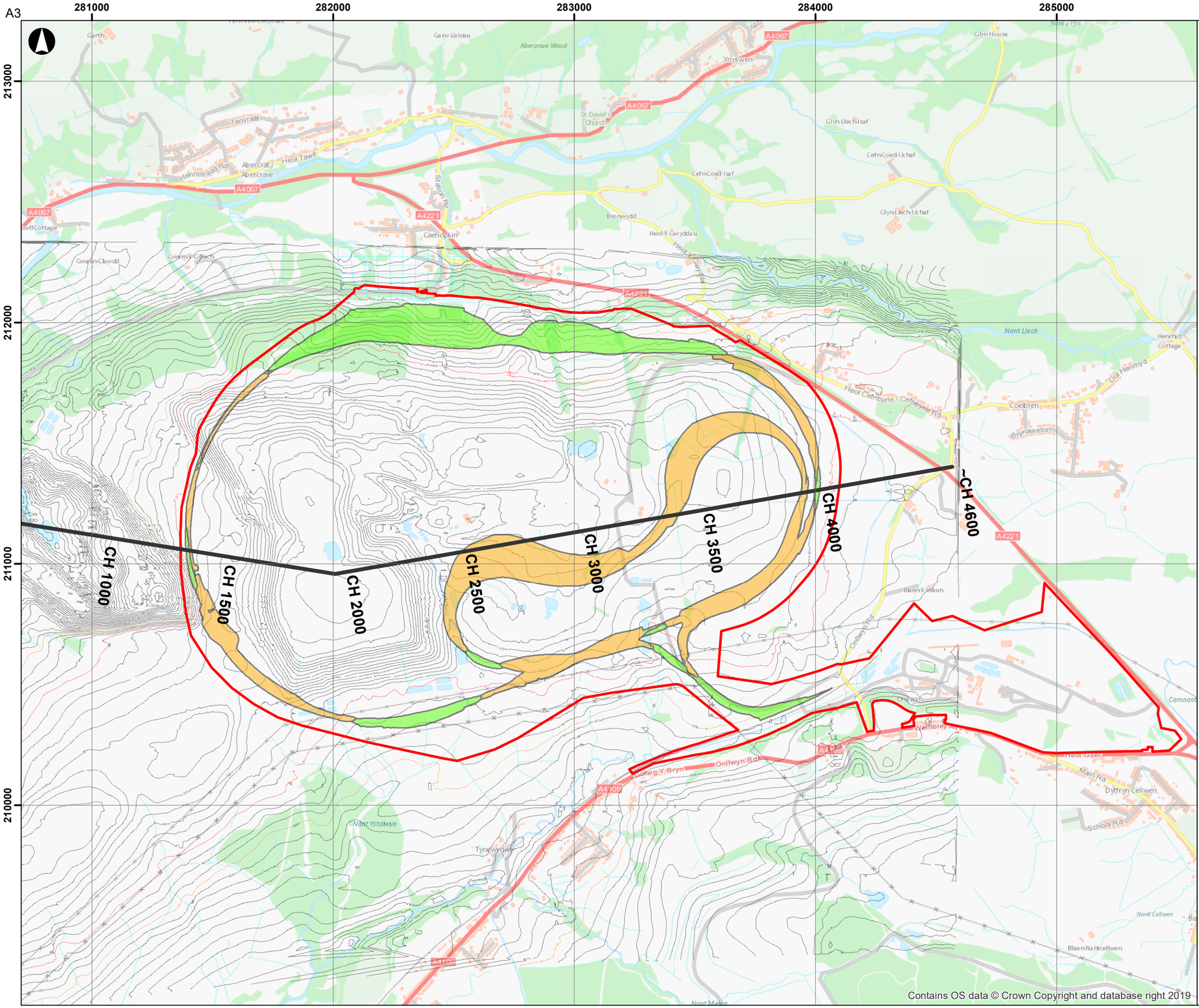

Legend

Site Boundary

Indicative Extent of Proposed Earthworks

Cuttings

Embankments

Figure 11 Section Line

Coordinate System: British National Grid

Metres

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Outline Scheme Earthworks Proposals

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Figure 2

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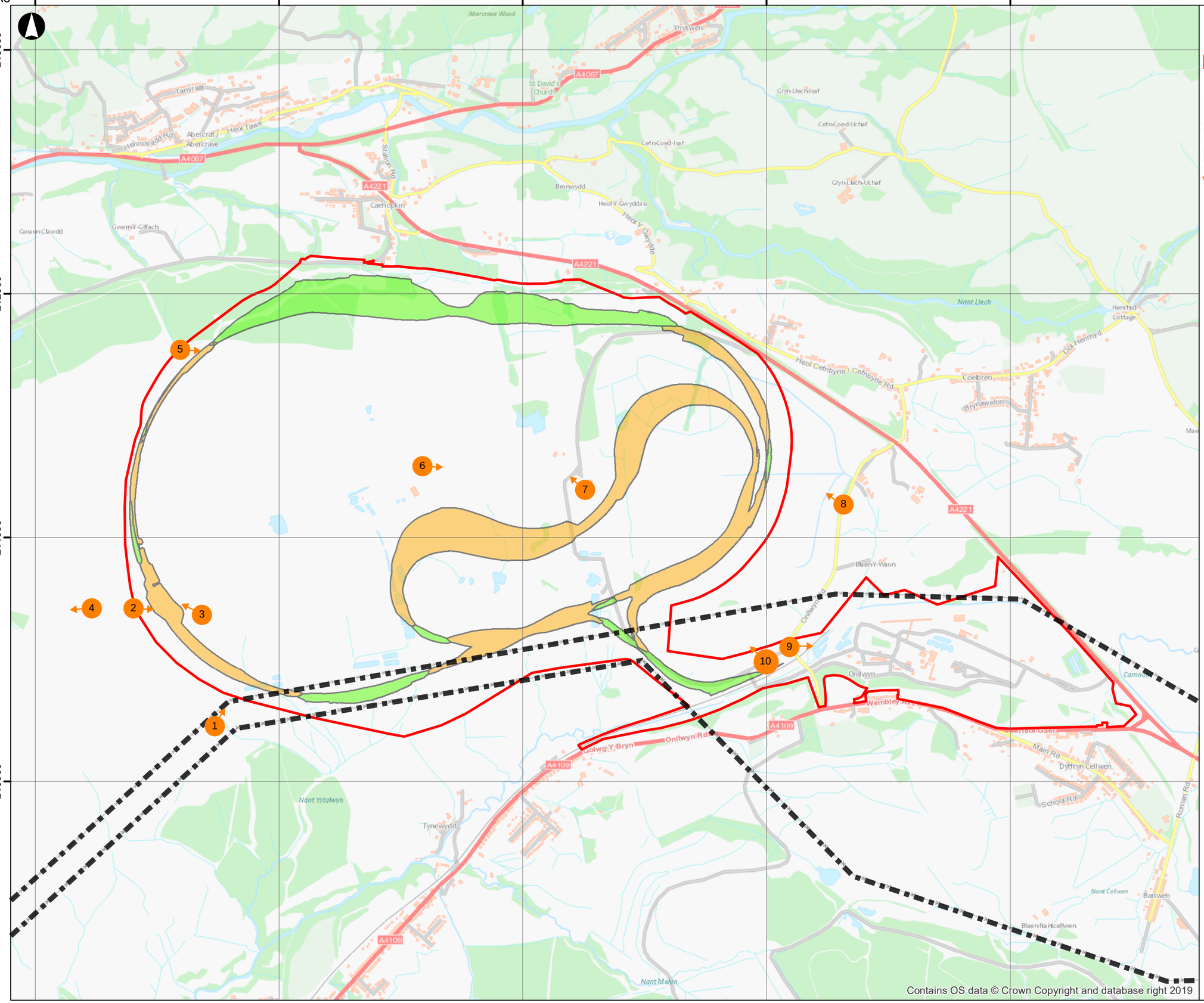

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Legend

- Site Boundary

Indicative Extent of Proposed Earthworks

- Cuttings
- Embankments
- # Photo Location
- Overhead Electricity Cables

Coordinate System: British National Grid

Refer to Appendix A for site walkover photographs.

Metres

0 400 800

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Site Walkover Photo Locations

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Figure 3

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Gwaunclawdd Colliery

Gwaunclawdd Colliery

Neath and Brecon Railway (Junction Line)

International Colliery

Abercrave Colliery

Unnamed Colliery

Glynllech/Cwm Tawe Colliery

Tramway

Tramway

Brecon Forest Tramroad

Neath and Brecon Railway

Dulais/Drym Colliery

Onllwyn Colliery

Seven Sisters Colliery

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Legend

- Site Boundary
- Rail & Tram Lines
- Collieries

Indicative Extent of Proposed Earthworks

- Cuttings
- Embankments

Coordinate System: British National Grid

Colliery locations and rail/tram line routes have been determined through review of OS historical mapping (Groundsure).

Refer to Figure 8 and Figure 9 for the identified extents of underground workings and opencast workings respectively.

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Drawing Title
Select Historical Features

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Role
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Suitability
For Information

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Figure 4

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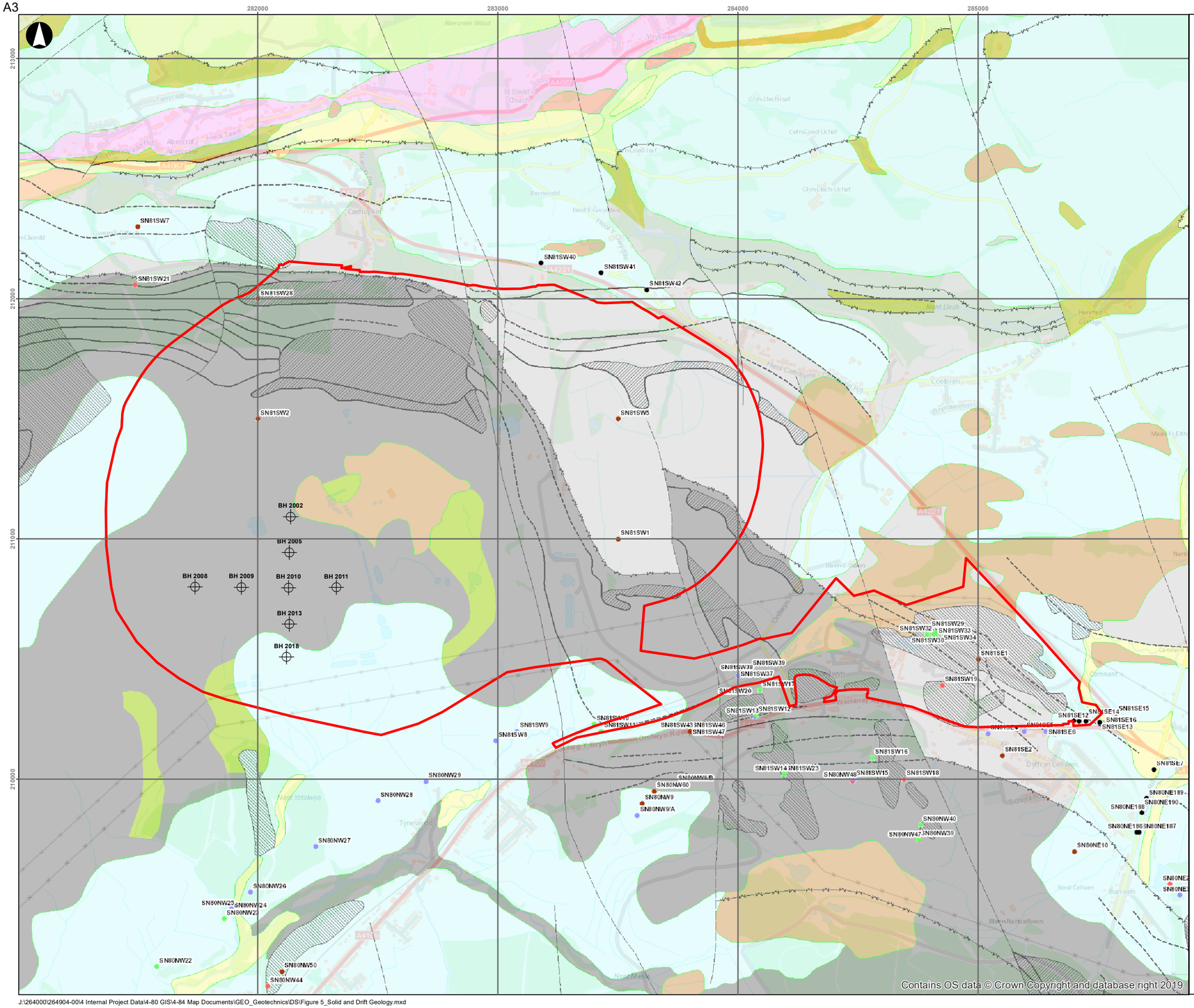

Legend

- Site Boundary

Published Geology

- Made Ground
- Alluvium
- Peat
- Glaciofluvial Deposits
- Glacial Till
- South Wales Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone
- South Wales Middle Coal Measures Formation - Sandstone
- South Wales Lower Coal Measures Formation - Mudstone, Siltstone and Sandstone
- BGS Borehole Scans
- Nant Helen Geotechnical Boreholes (1986)

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Drawing Title
Solid and Drift Geology

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Role
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Suitability
For Information

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Figure 5

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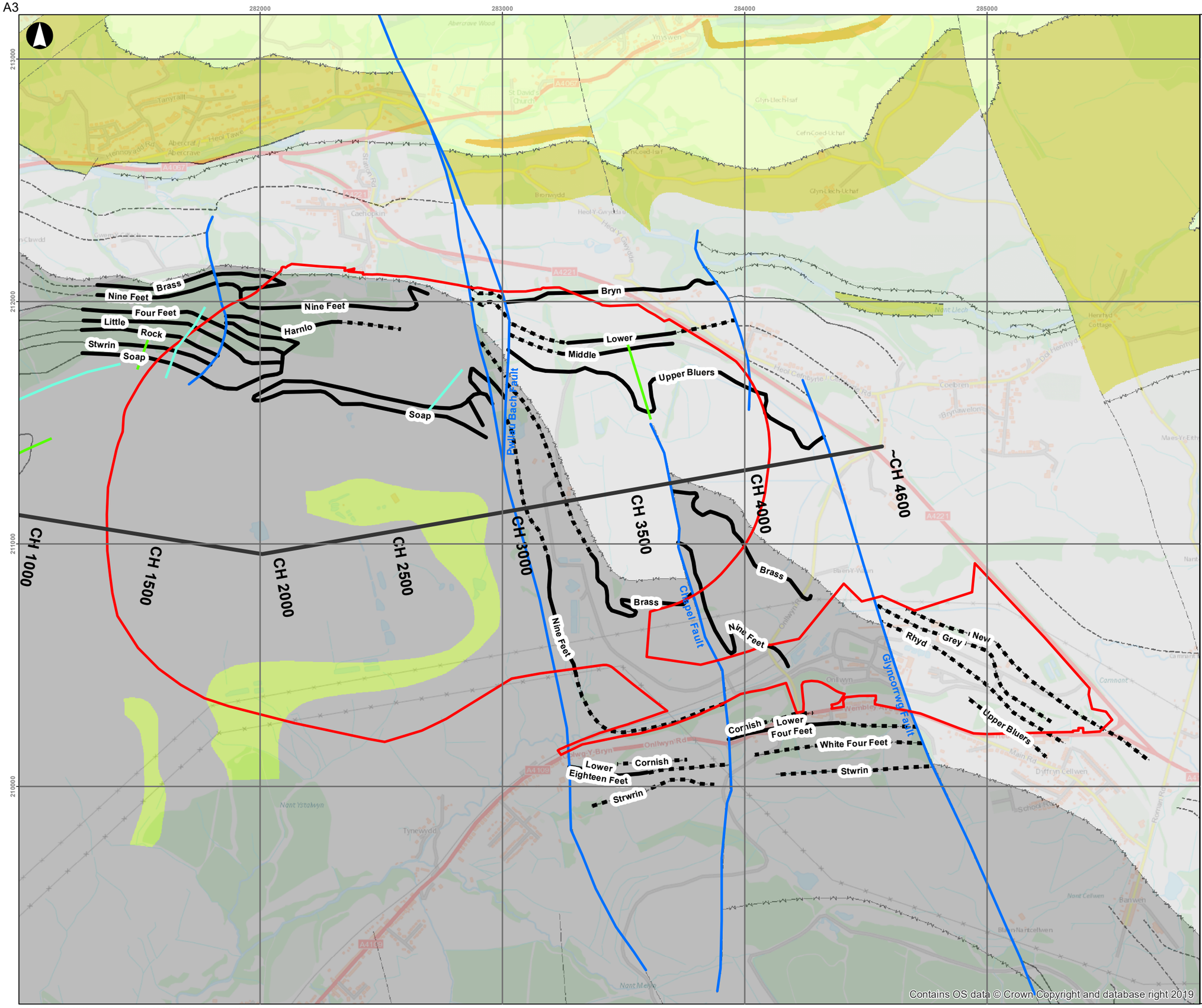

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Legend

- Site Boundary

Coal Seams

- *Observed*
- *Inferred*

Published Geology

- South Wales Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone
- South Wales Middle Coal Measures Formation - Sandstone
- South Wales Lower Coal Measures Formation - Mudstone, Siltstone and Sandstone
- Faults
- *Anticlinal axis*
- *Synclinal axis*

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Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Linear Geological Features

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Drawing No
Figure 6

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River Tawe

Nant Llech

Restored Pond Feature

Water Treatment Area

Water Treatment Area

Water Treatment Area

Camnant

Nany Ystalwyn

River Dulais

Abercrave Wood
Onbarth
Ynyswen
St David's Church
Glyn-Llech-Isaf
Cefn-Coed-Uchaf
Cefn-Coed-Isaf
Glyn-Llech-Uchaf
Tanyrallt
Tanygarn St
School Rd
Heol-Tawe
A4067
Hennoyadd Rd
Abercrave/Abercrave
Station Rd
Heol-Y-Gwyddde
Bronwydd
Heol-Y-Gwyddau
Morgan St
Davies St
Gaehopkin
Gwaun-Clawdd
Gwern-Y-Gilfach
Nant Llech
Henrhyd Cottage
Dol Henrhyd
Heol Cefnbyrle / Cefnbyrle Rd
A4221
Coelbren
Brynawelon
Blaen-Y-Waun
Onllwyn Rd
Onllwyn
Abbey Ave
Camnant
A4109
Dyffryn Cellwen
Main Rd
Highland Cres
School Rd
Roman Rd
Nant Ystalwyn
Northerwaun Uchaf
Nant Melyn
Heol-Y-Waun
Heol-Y-Fainmary St
Nant Llwyn
Banwen
Blaen-Nantcellwen

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Legend

- Site Boundary
- Surface Water Features
- Culverted Watercourses
- Existing Water Treatment

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Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Hydrological Features

Scale at A3
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Role
Geotechnical

Suitability
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Figure 7

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Gwaunclawdd Colliery

Gwaunclawdd Colliery

International Colliery

Unnamed Colliery

Abercrave Colliery

RISK ZONE B

Glynllech/Cwm Tawe Colliery

RISK ZONE C

CH 3000

CH 3500

CH 4000

~CH 4600

RISK ZONE A

RISK ZONE D

CH 1000

CH 1500

CH 2000

CH 2500

G

H

E

F

B

A

C

C

D

Onllwyn Colliery

Seven Sisters Colliery

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Legend

- Site Boundary
- Shafts
- Adits
- Collieries
- Cuttings
- Embankments

Old Workings

- Brass
- Peacock (Brass)
- Nine Feet
- Big (Nine Feet)
- Unnamed

- Risk Zones — *Risk of subisdence on account of potential shallow workings*
- Figure 11 Section Line

Old workings have been geo-referenced from files provided by Celtic Energy. The extents shown are for indicative purposes only.

Coordinate System: British National Grid

Metres

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Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Identifed extent of below ground workings

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Role
Geotechnical

Suitability
For Information

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Drawing No
Figure 8

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Gwaunclawdd Colliery

Gwaunclawdd Colliery

International Colliery

Unnamed Colliery

Abercrave Colliery

RISK ZONE B

Glynllech/Cwm Tawe Colliery

Abercrave/Gwaunton

Nant Helen Extension

Nant Helen

CH 1000

CH 1500

CH 2000

CH 2500

CH 3000

CH 3500

CH 4000

~CH 4600

Onllwyn

RISK ZONE A

Onllwyn

Onllwyn Colliery

Dulais/Drym Colliery

RISK ZONE C

Seven Sisters Colliery

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Legend

- Site Boundary
- Collieries
- Shafts
- Adits
- Cuttings
- Embankments

Opencast Sites

- *Onllwyn (1946-1949)*
- *Abercrave/Gwaunton (1963-1973)*
- *Onllwyn (1972-1982)*
- *Nant Helen (1986-1999)*
- *Nant Helen Extension (2002-2006)*
- *Nant Helen Extension (2006-2009)*
- *Nant Helen Extension (2009-2019)*
- Cefn Bryle License Area *(1952-1953)*
- Risk Zones *Risk of subsidence on account of potential shallow underground mine workings*
- Figure 11 Section Line

Opencast site extents have been determined through review of Opencast abandonment plans provided by Celtic energy and cross-referenced with historical aerial photography provided by the Welsh Government. The extents shown are for indicative purposes only.

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Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Identified extents of opencast workings

Scale at A3
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Role
Geotechnical

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Drawing No
Figure 9

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Brecon Beacons

NANT LLECH

GORSLLWYN, ONLLWYN

Ancient Semi Natural Woodland

Plantation on Ancient Woodland Site

Ancient Semi Natural Woodland

Plantation on Ancient Woodland Site

Tramroad at Ystradgynlais

Bryn Llechwen ring cairn

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Legend

- Site Boundary
- National Parks
- Sites of Special Scientific Interest
- Ancient Woodland
- Scheduled Ancient Monuments

Indicative Extent of Proposed Earthworks

- Cuttings
- Embankments

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Land at Nant Helen and Onllwyn Coal Washery

Drawing Title
Sensitive Land Uses

Scale at A3
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Role
Geotechnical

Suitability
For Information

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264904

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Name
Figure 10

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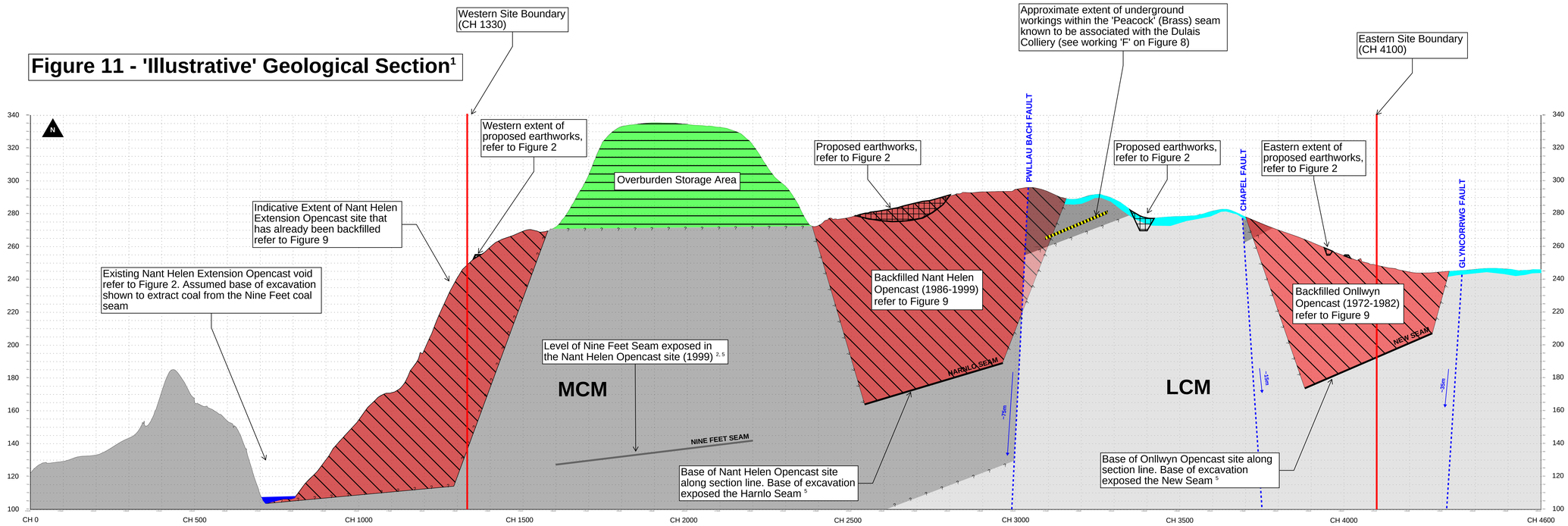
Figure 11 - 'Illustrative' Geological Section[1]



LEGEND

Geology

- Glacial Till
- South Wales Middle Coal Measures (MCM)
- South Wales Lower Coal Measures (LCM)
- Faults
- Coal Seams

Workings

- Overburden Storage Area
- Backfilled Opencast
- Underground Workings
- Proposed Earthworks (Cuttings and Embankments)

NOTES

1. This figure is for illustrative purposes only and has been included to highlight the anticipated geology beneath the site and the depths of the various opencast sites within the Land at Nant Helen and Onllwyn Coal Washery site.

2. The level of the Nine Feet Seam exposed pertains to a section of the Nant Helen opencast site which is offset approximately ~400m to the north of the long section shown.

3. Ground surface level from LiDAR data.

4. Fault orientations displayed for indicative purposes only. Fault displacements and directions indicated on each fault.

5. Coal Seams shown refer to those used to determine the indicative extents of opencast excavation. For an indication of the overlying and underlying seams within each formation refer to Table 3.

6. As stated within Section 5.3 of thisproposed earthworks, refer to figure 2 report, the solid geology beneath the site is anticipated to dip between 5° and 15° in a west-south-westerly direction.

7. Groundwater level not indicated on figure due to the anticipated complex and varied nature of the hydrogeological regime and the lack of current groundwater data held within the site. Refer to Section 8 of the report.

SCALE

V 1: 1000 @ A0

H 1: 5000 @ A0

Appendix A

Site Walkover Photographs



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



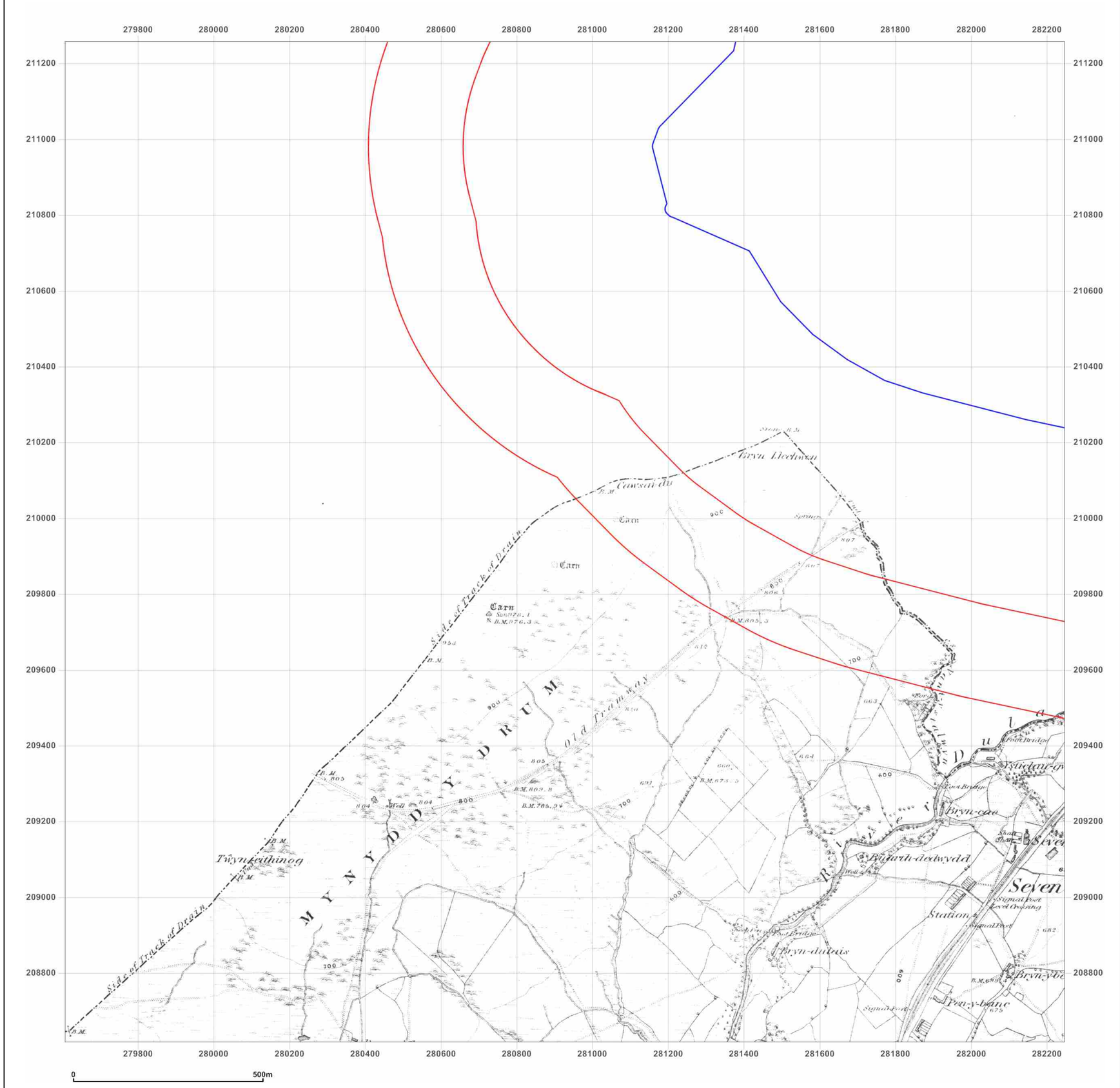
Photograph 9



Photograph 10

Appendix B

Groundsure Historical Maps



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211100.677756288

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Report Ref: GS-6396071_SS_1_1
Grid Ref: 280926, 209937

Map Name: County Series
Map date: **1876**
Scale: 1:10,560
Printed at: 1:10,560

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Revised 1876
Edition N/A
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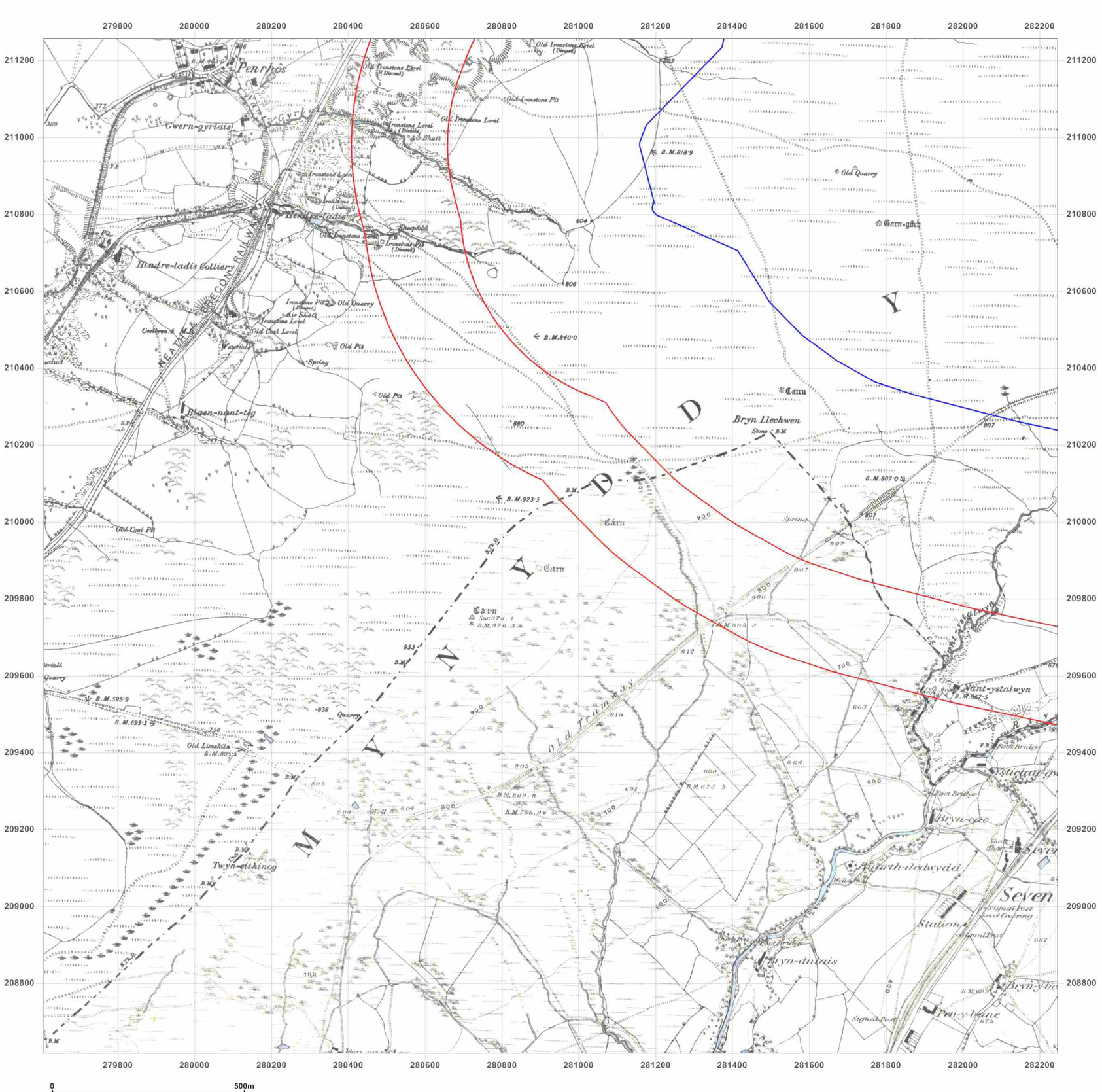

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Map date: **1877**

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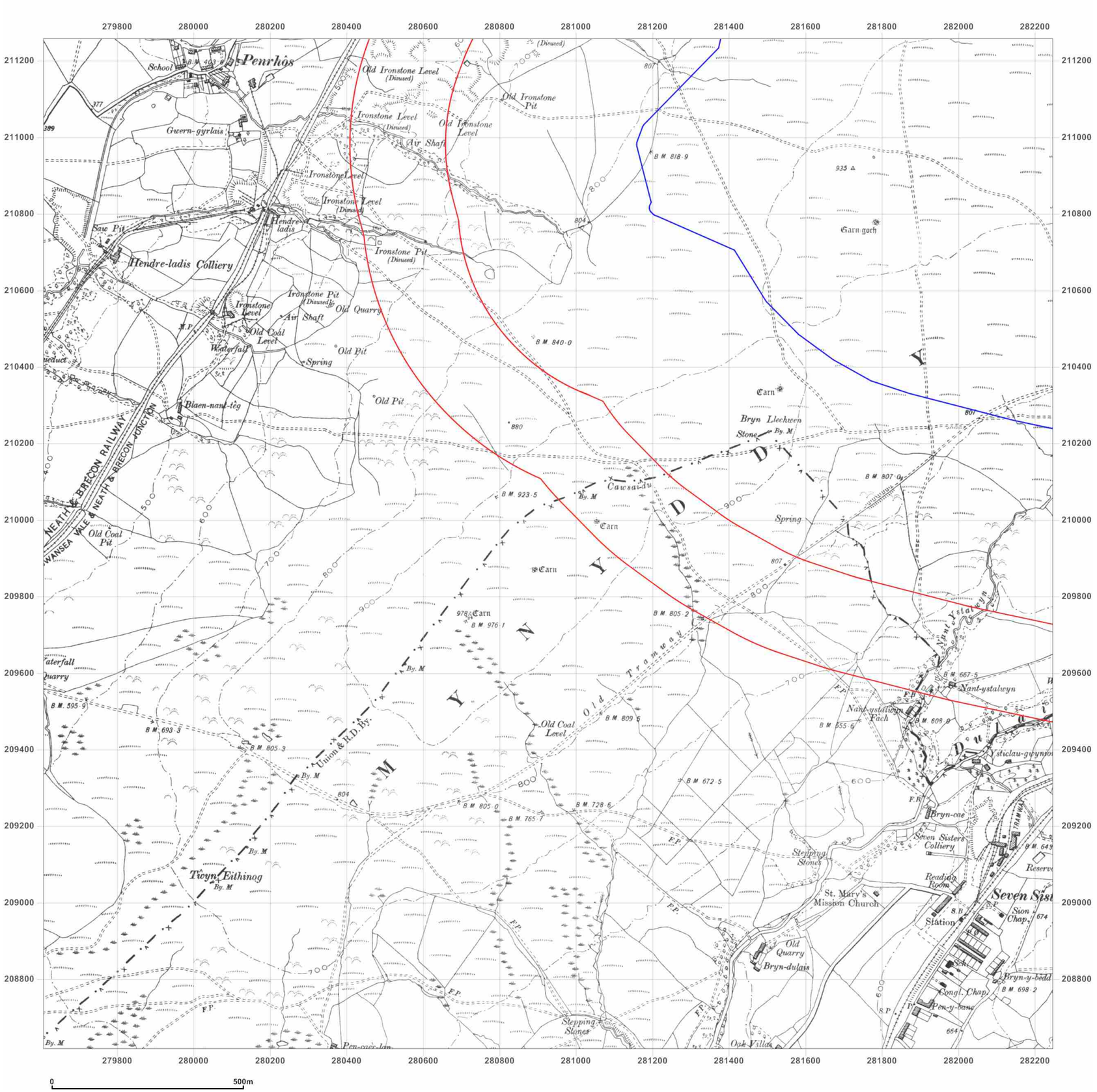

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Map Name: County Series

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Scale: 1:10,560

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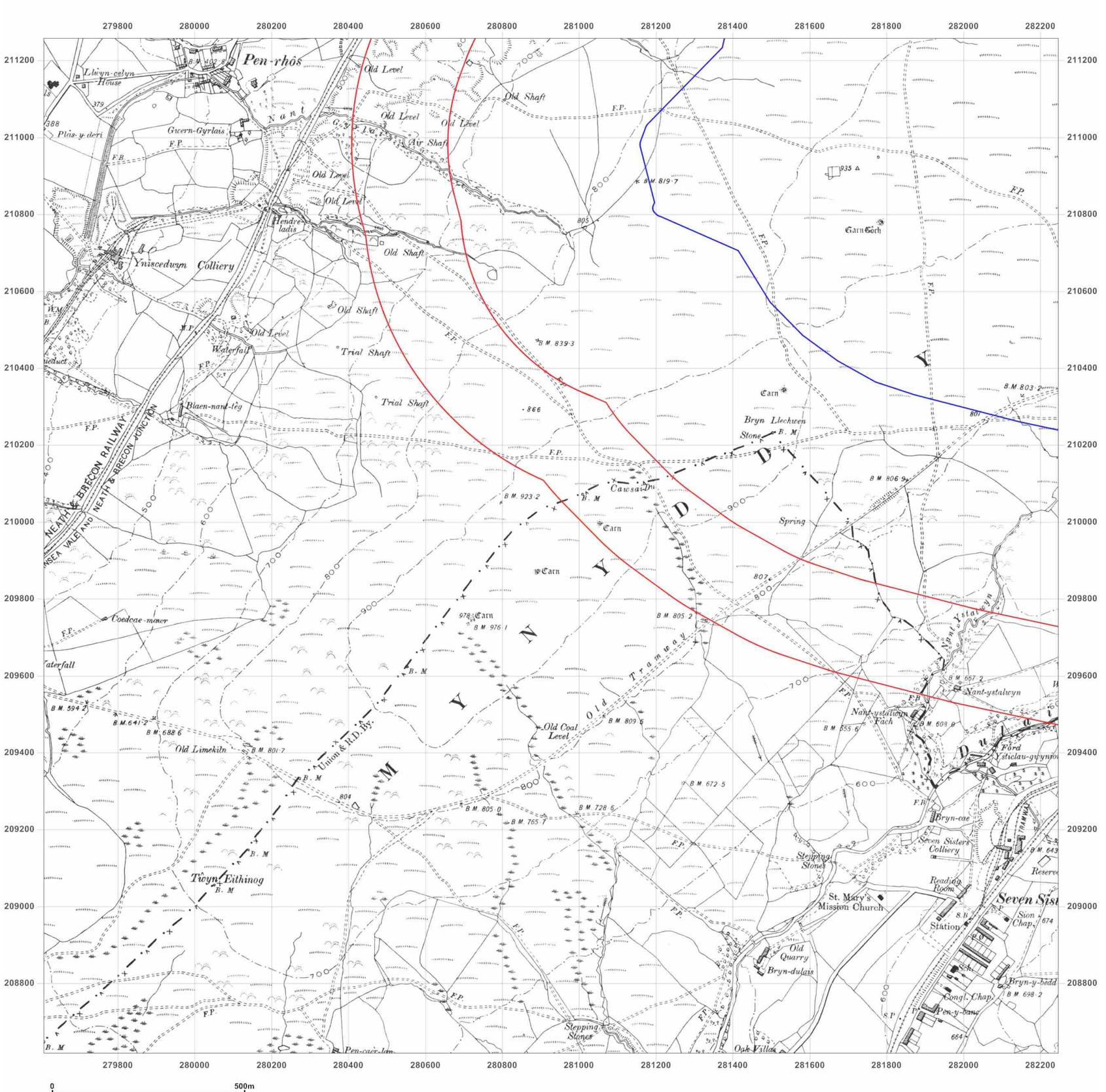

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Scale: 1:10,560

Printed at: 1:10,560

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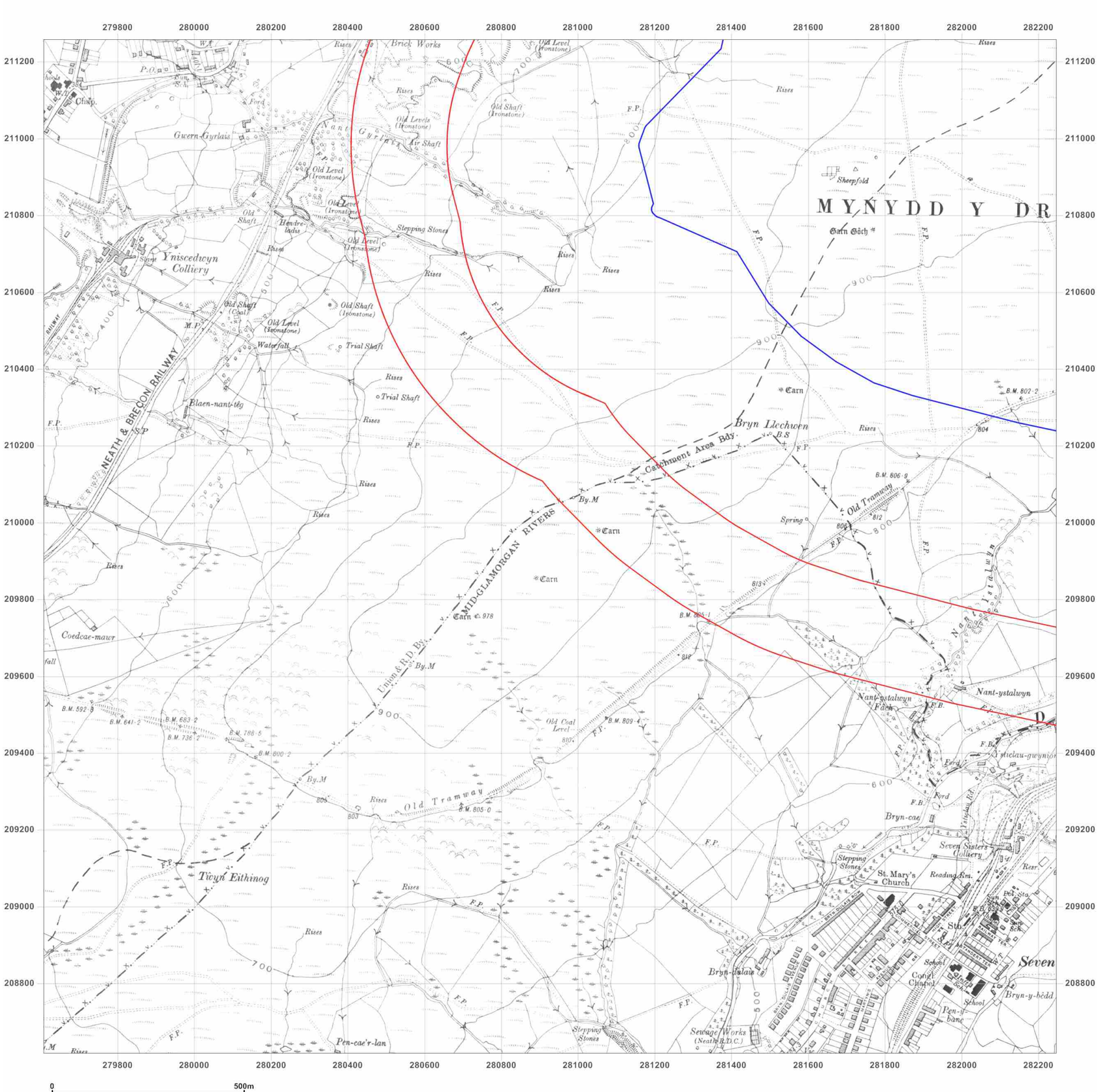

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Map Name: County Series

Map date: **1914**

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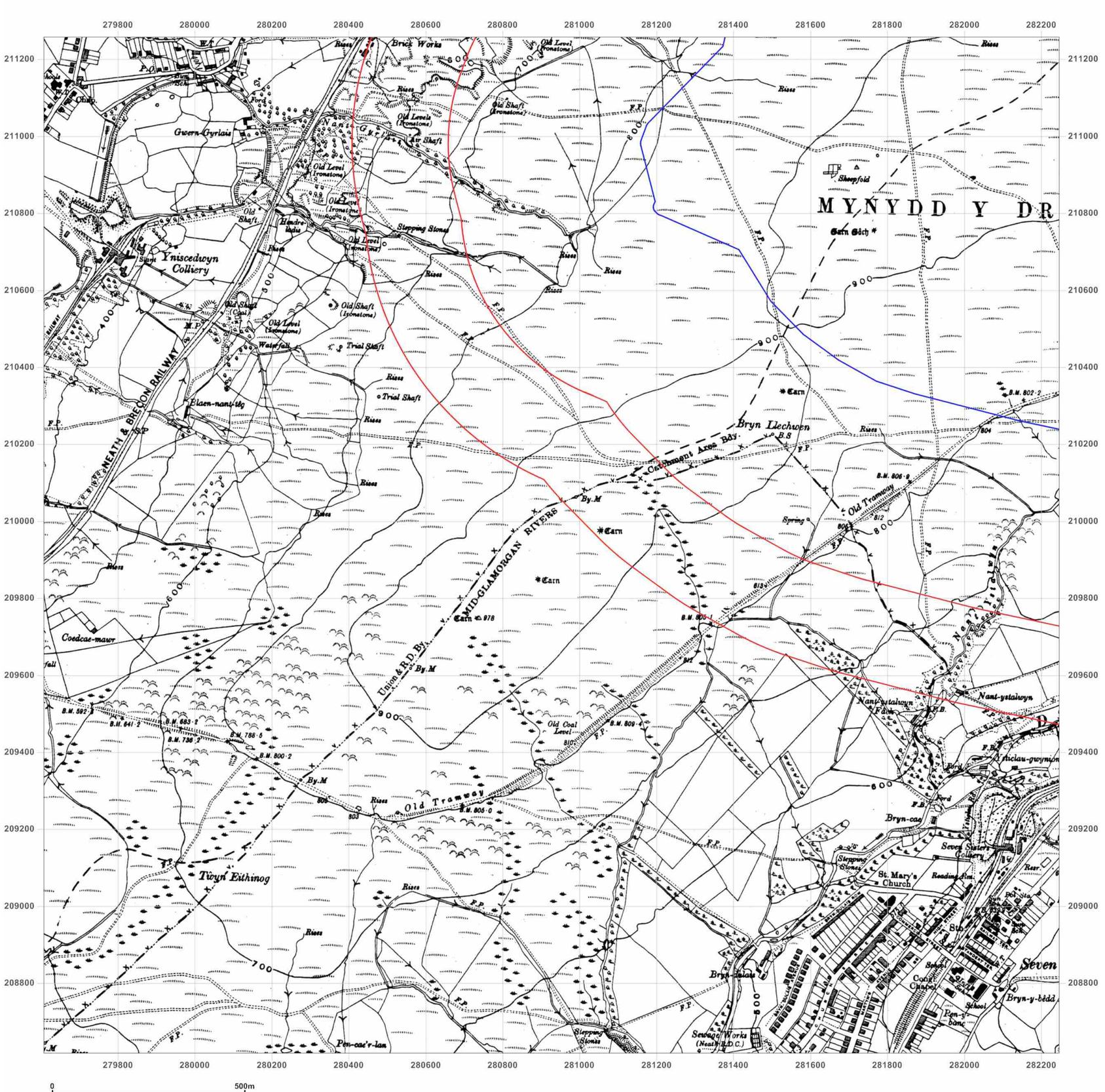

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Map date: **1921**

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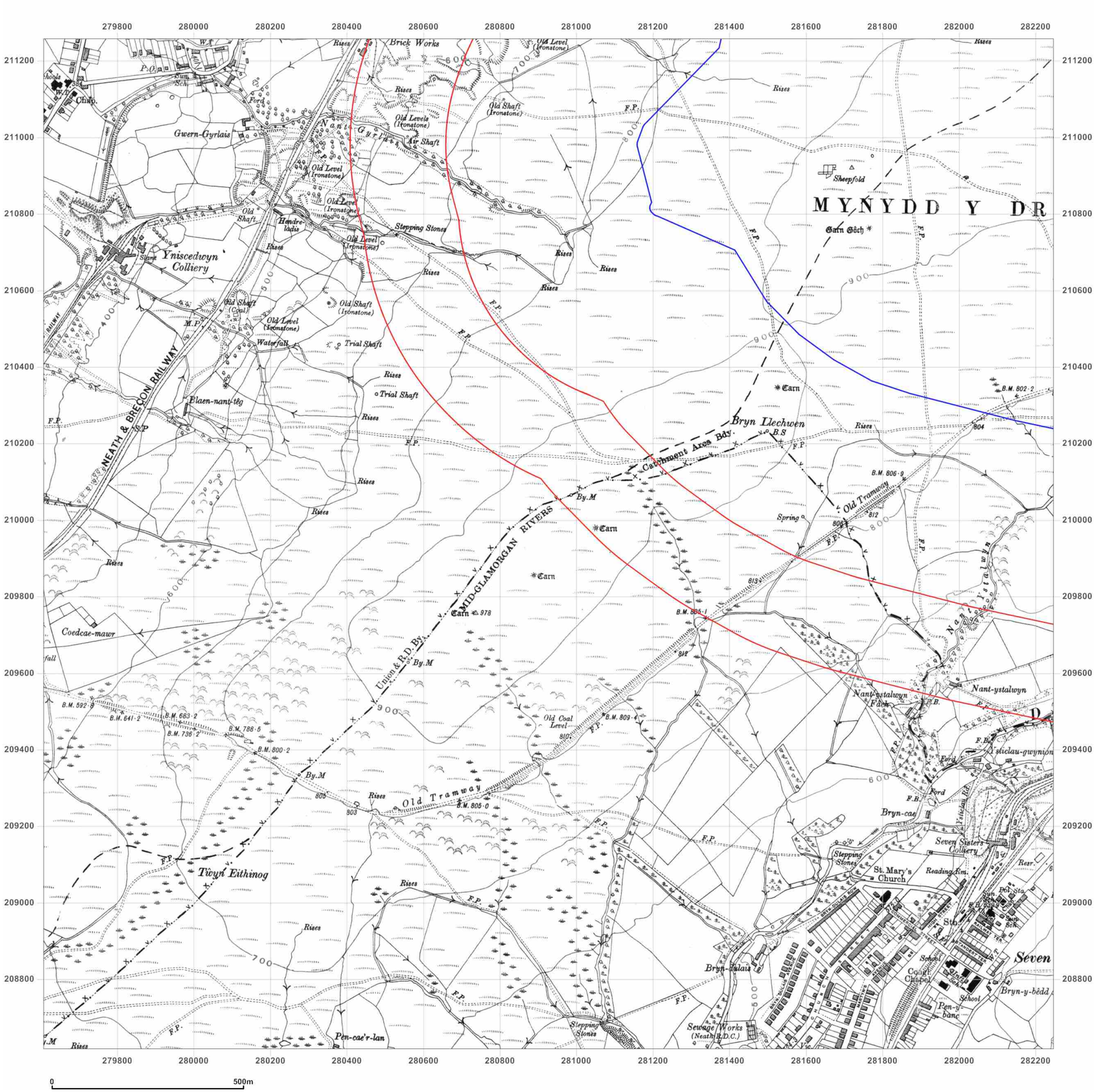

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Map Name: County Series

Map date: **1921**

Scale: 1:10,560

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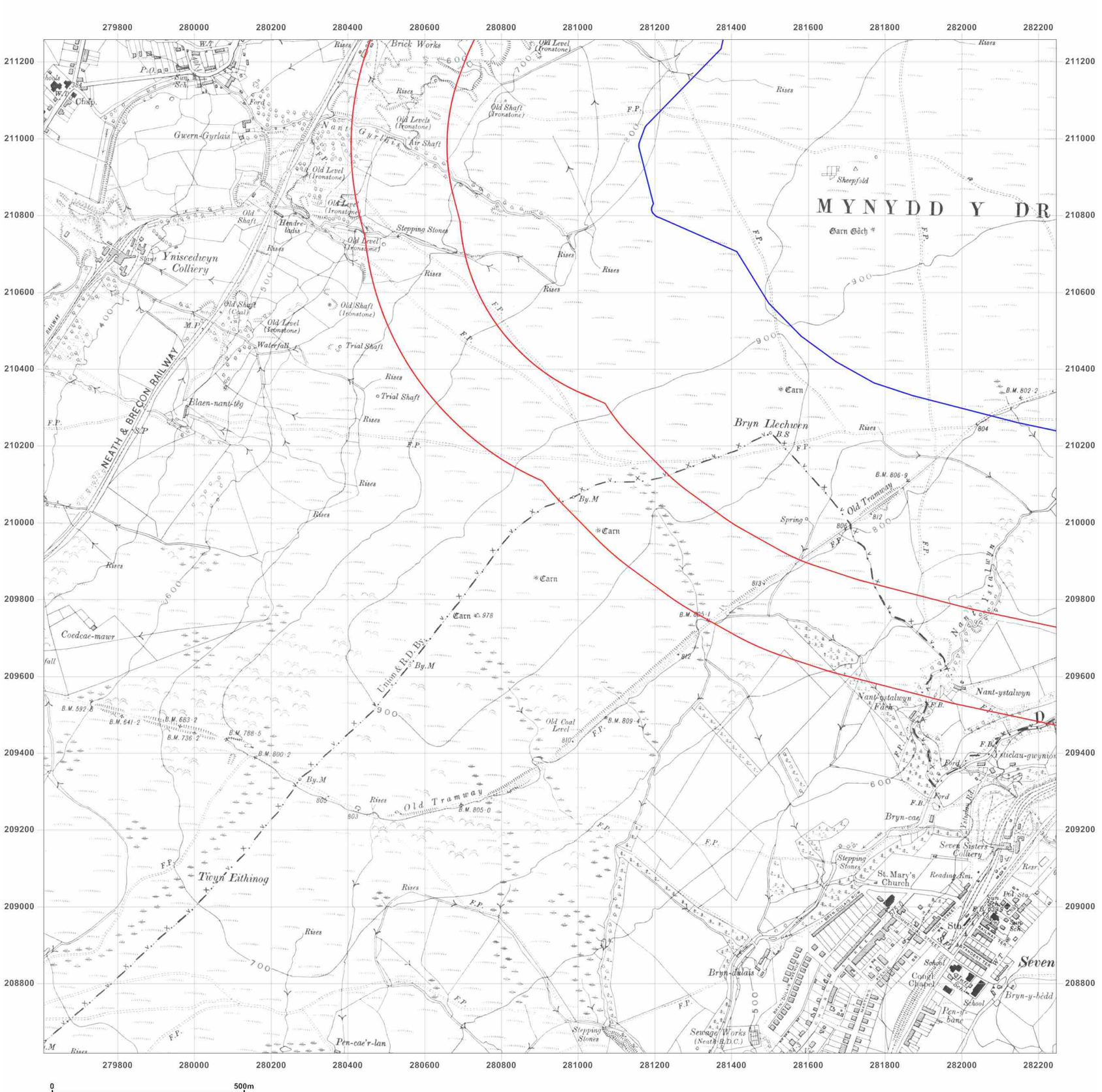

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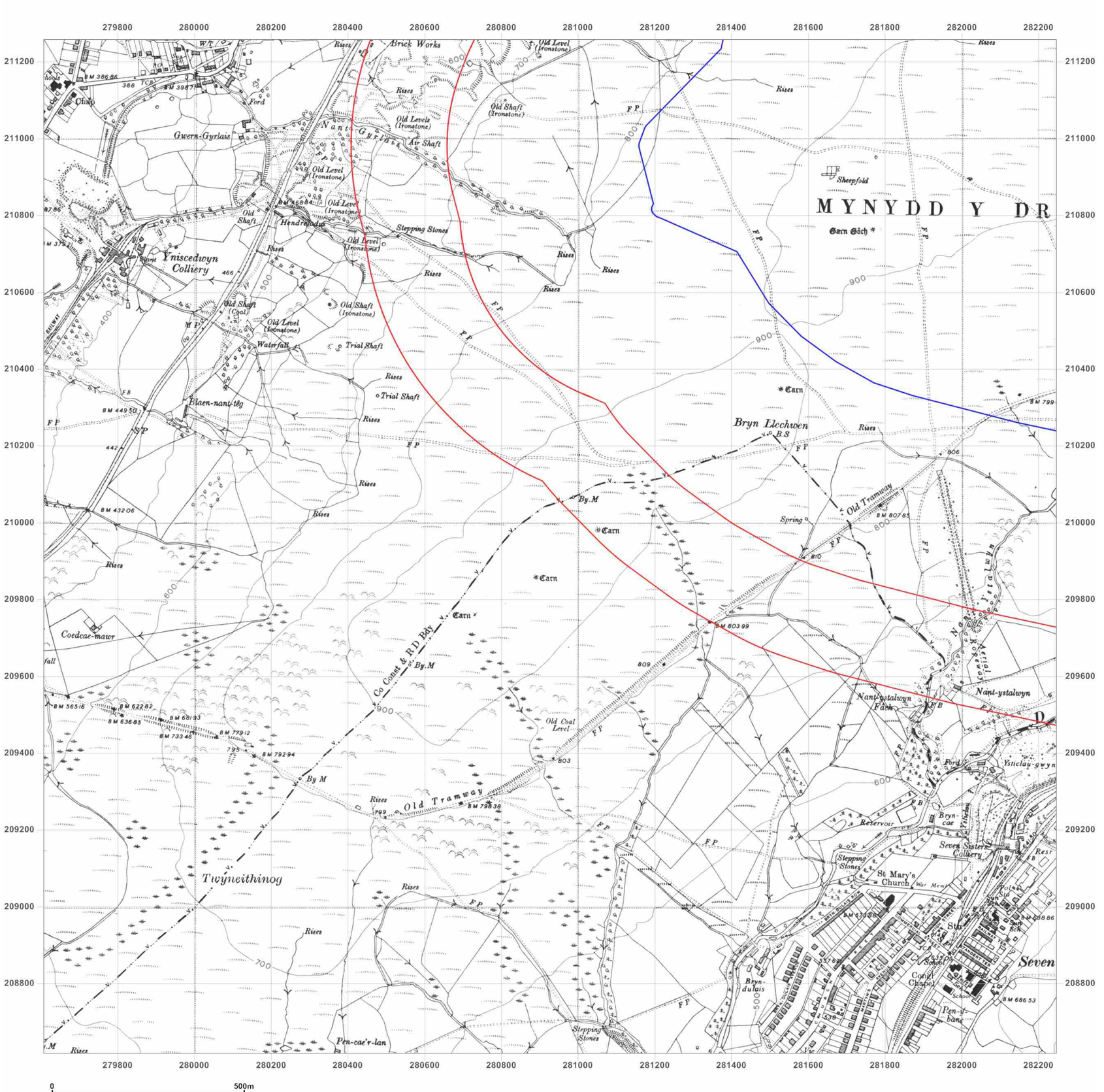

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Grid Ref: 280926, 209937

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

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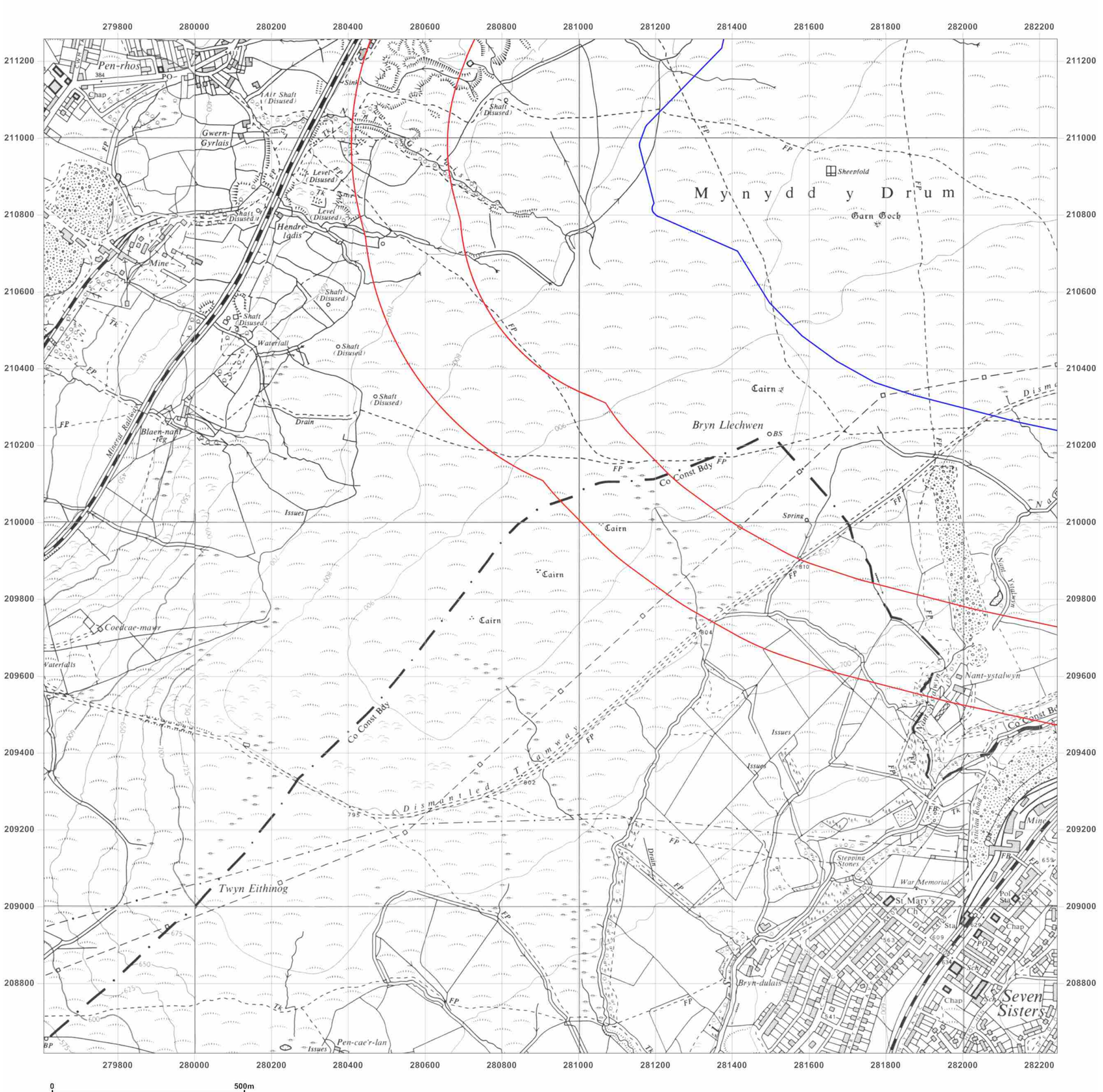

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Scale: 1:10,560
Printed at: 1:10,560

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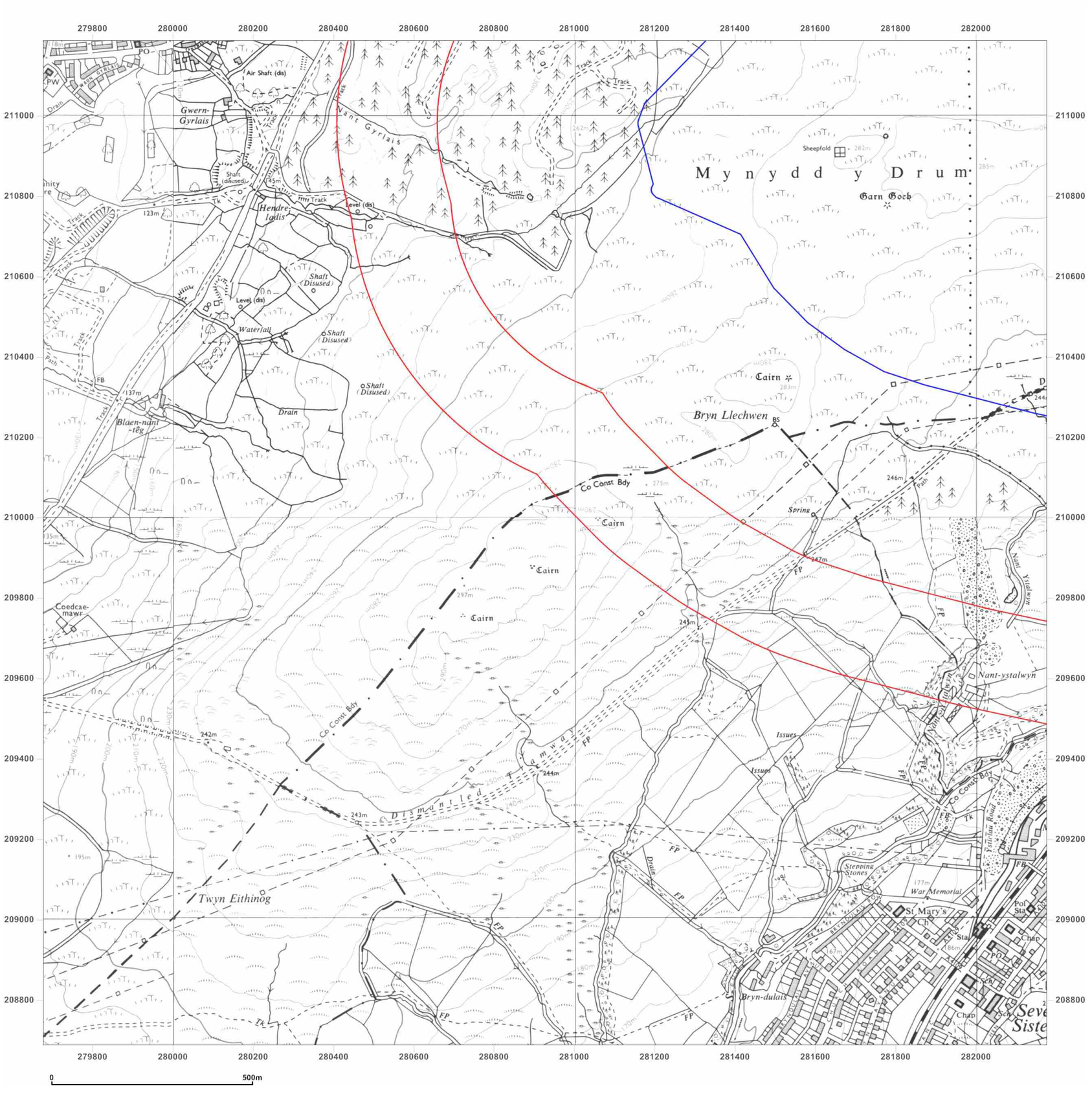

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Grid Ref: 280926, 209937

Map Name: National Grid

Map date: **1983-1988**

Scale: 1:10,000

Printed at: 1:10,000

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Revised 1987
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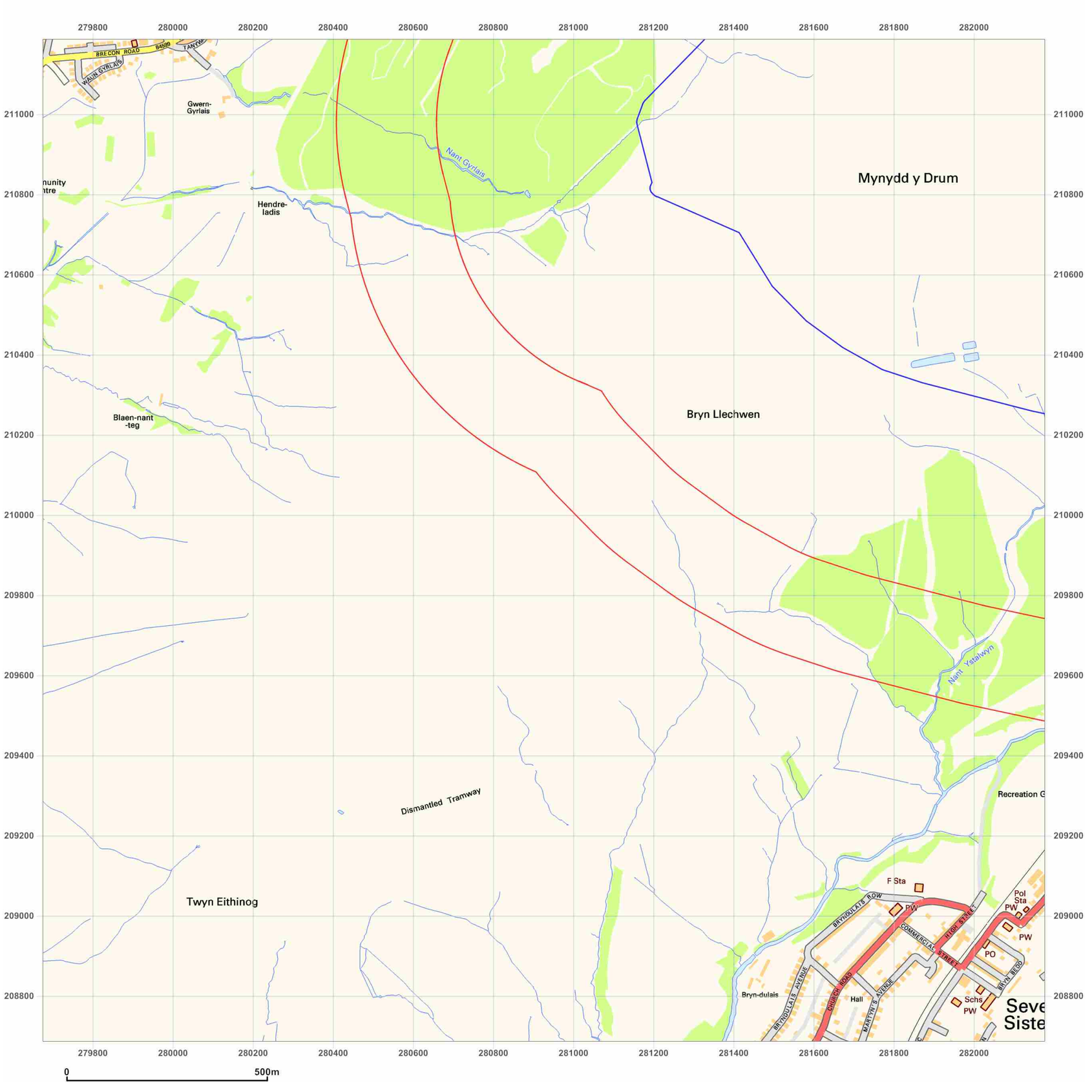

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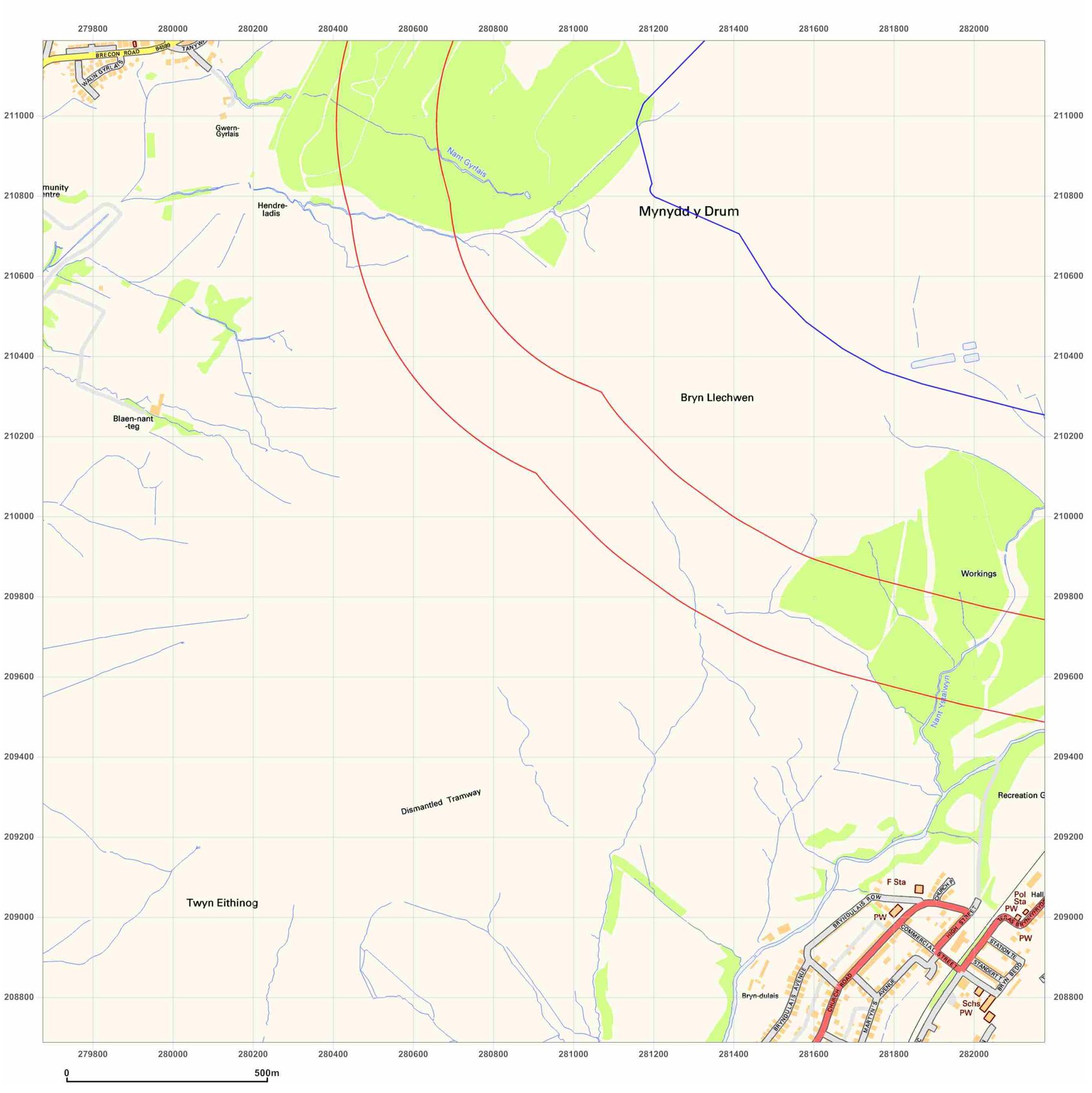

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Grid Ref: 280926, 209937

Map Name: National Grid
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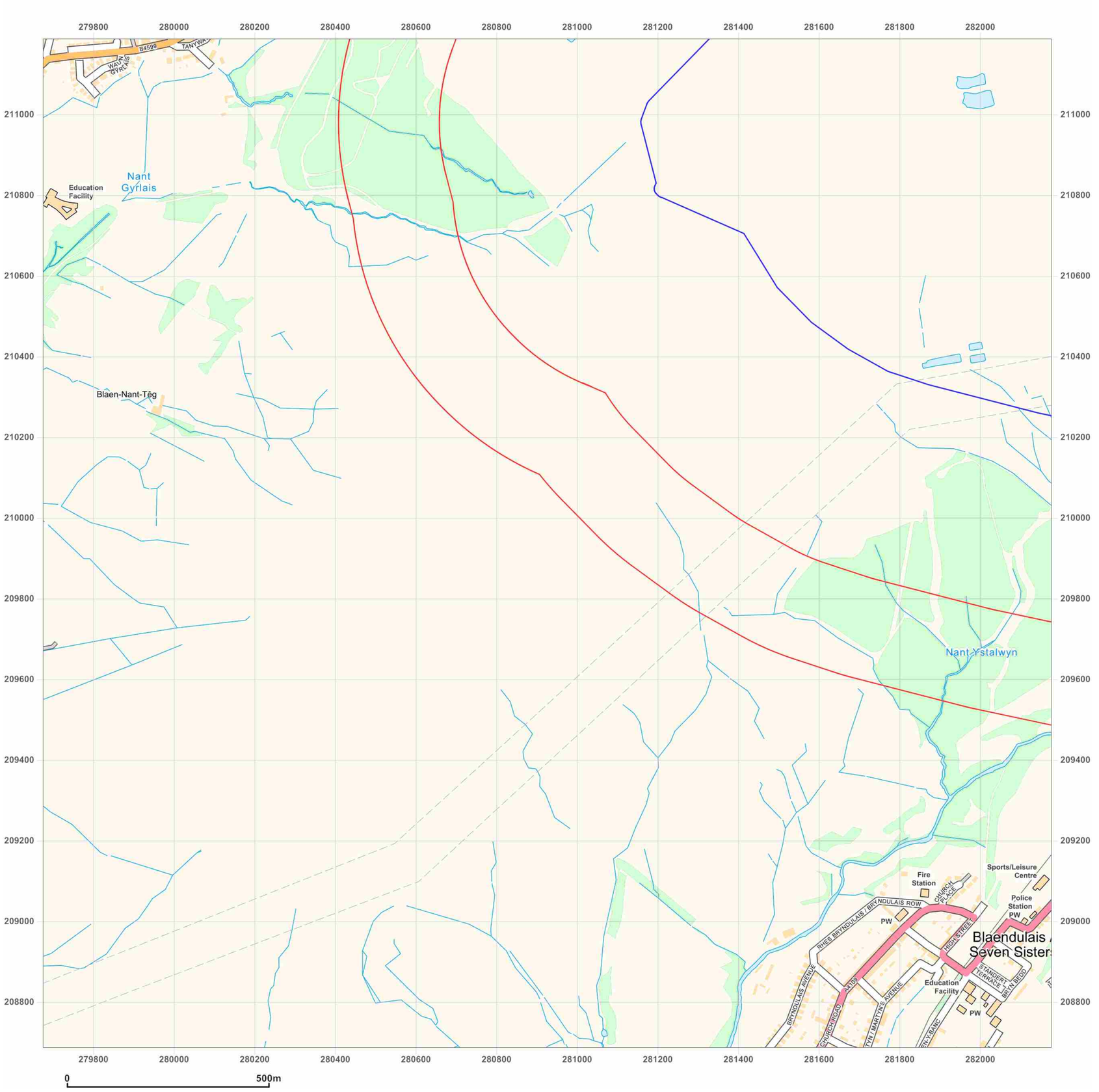

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Grid Ref: 280926, 209937

Map Name: National Grid
Map date: **2019**
Scale: 1:10,000
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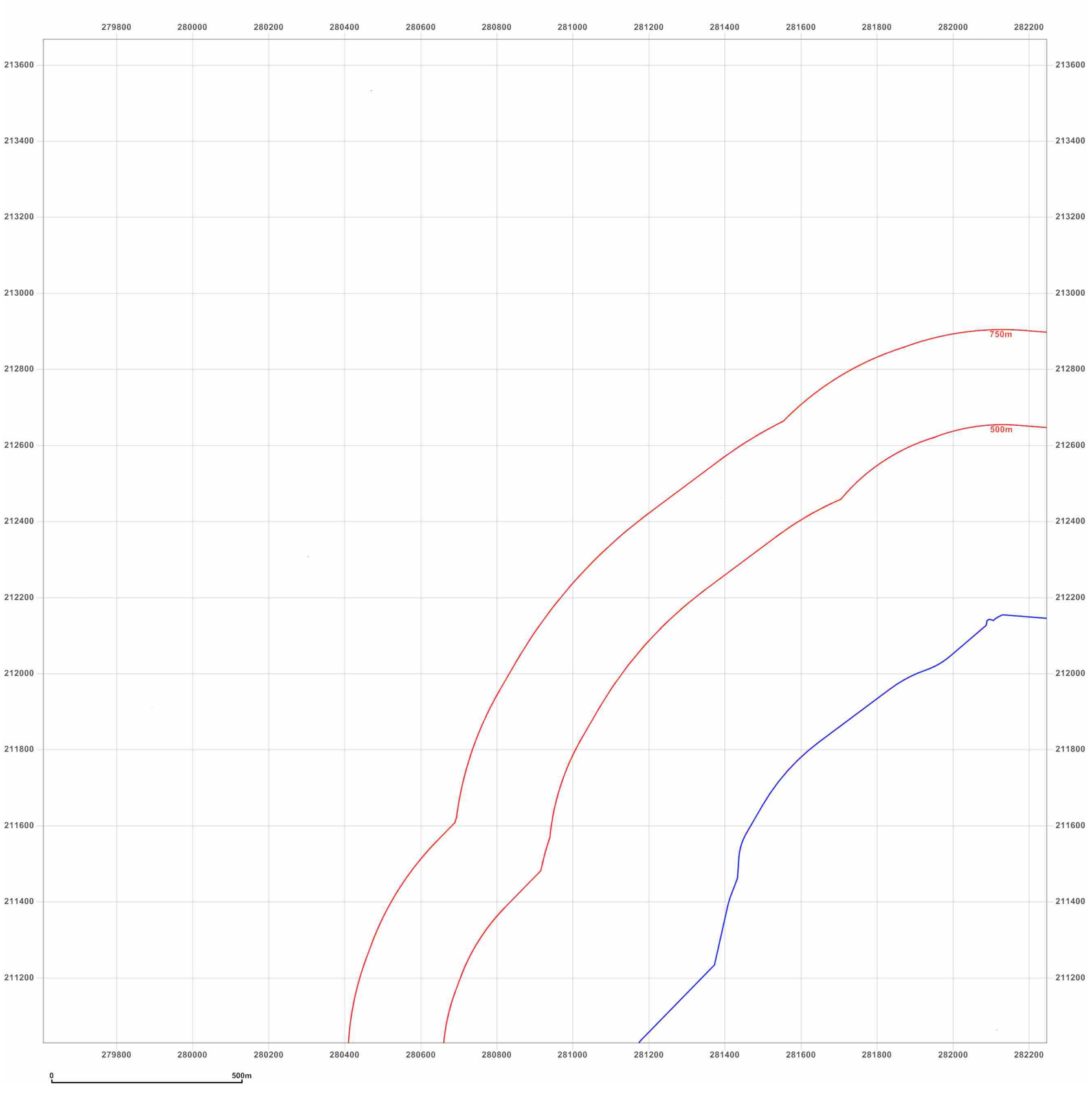

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Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: County Series

Map date: **1876**

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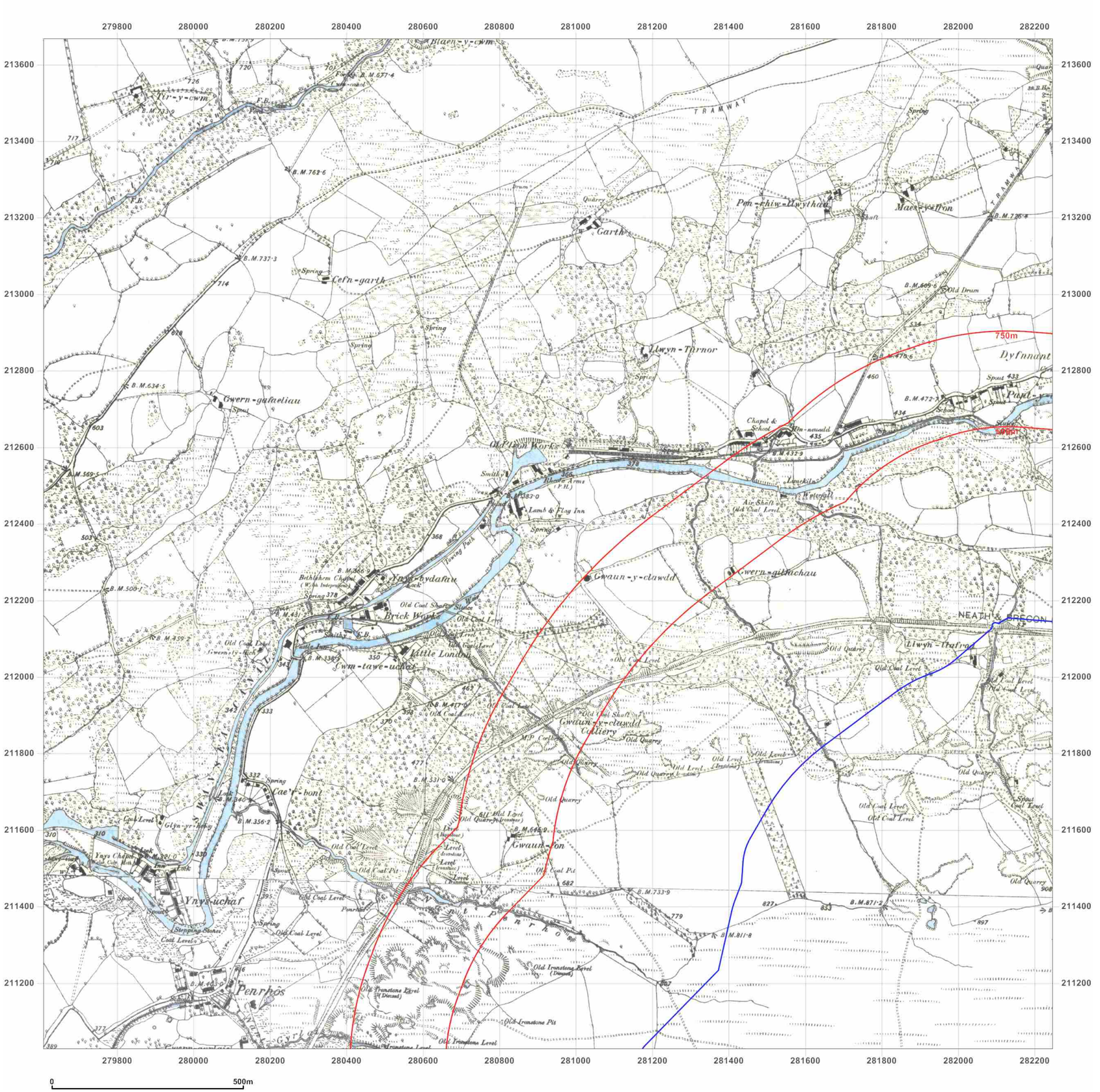

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Grid Ref: 280926, 212347

Map Name: County Series

Map date: **1877**

Scale: 1:10,560

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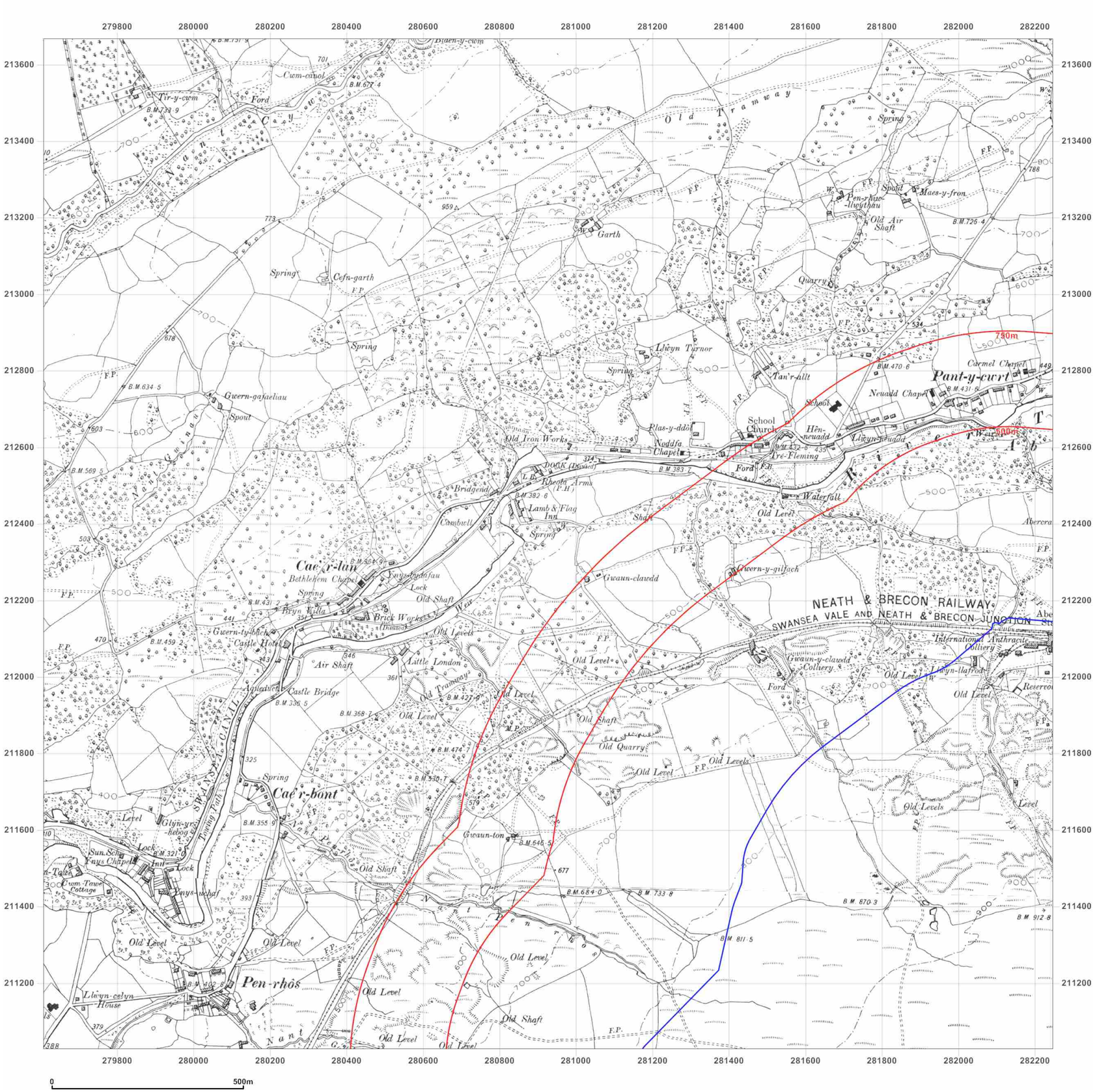
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Carmel Chapel
Neuadd Chapel
School
School Church
Old Iron Works
Noddfa Chapel
Tre-Fleming
Hên-neuadd
Llwyn-neuadd
Tan'r-allt
Llwyn Tarnor
Garth
Spring
Cefn-garth
Quarry
Old Air Shaft
Maes-y-fron
Pen-y-kae-llwythau
Old Tramway
Tir-y-cwm
Cwm-cavol
Ford
Gwern-gafaeliau
Spout
Bridgend
Rhosta Arms (P.H.)
Lamb & Flag Inn
Waterfall
Old Level
Shaft
Gwern-y-gilfach
Gwaun-clawdd
NEATH & BRECON RAILWAY
SWANSEA VALE AND NEATH & BRECON JUNCTION
Cae'r-lan
Bethlehem Chapel
Brick Works
Castle Hotel
Air Shaft
Little London
Castle Bridge
Old Tramways
Old Quarry
Old Levels
Cae'r-bont
Glyn-yr-hebog
Sun.Sch.
Ynys Chapel
Ynys-uchaf
Ynys-isaf
Crwm-Tawe Cottage
Pen-rhôs
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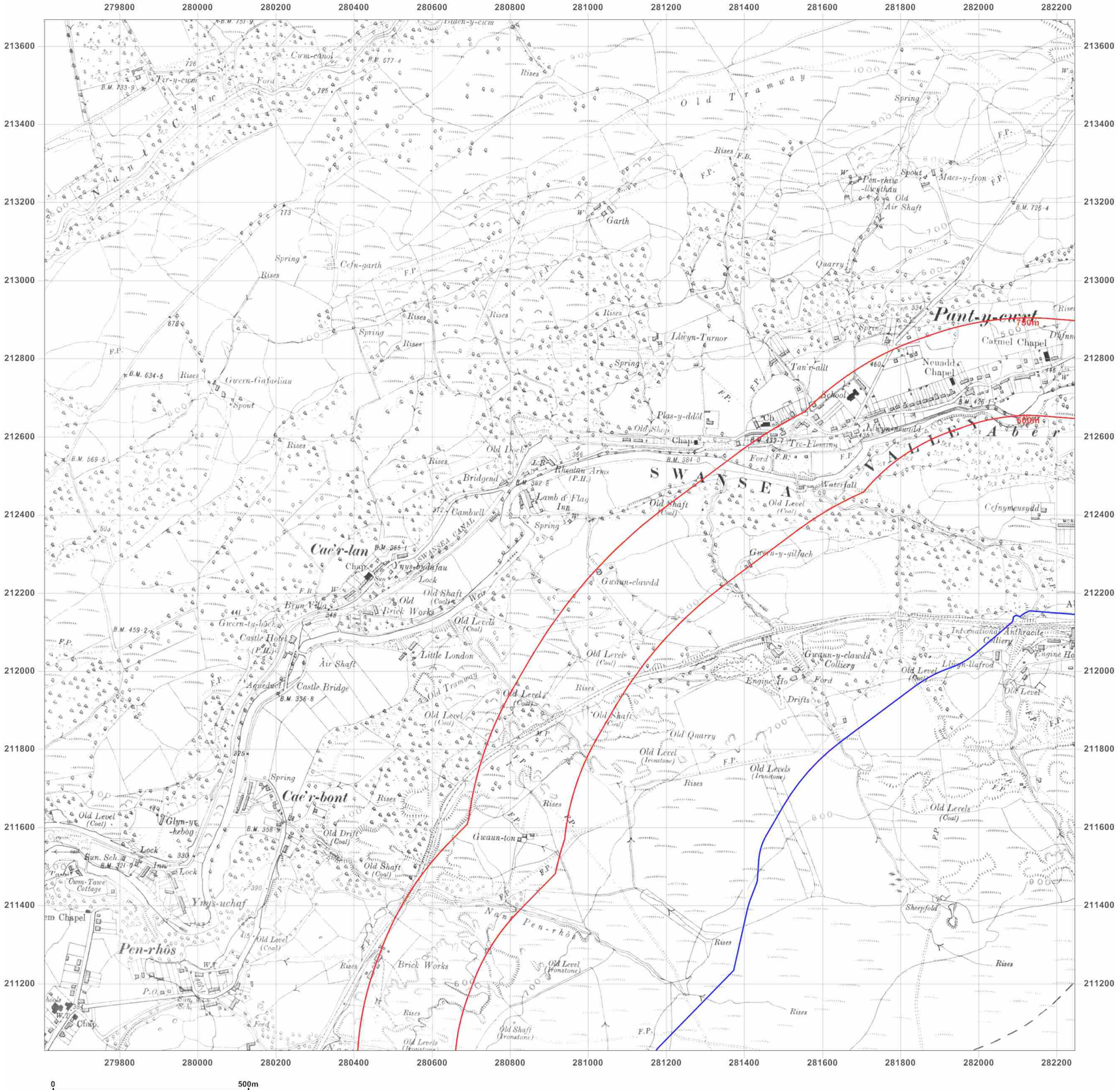

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Map Name: County Series

Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

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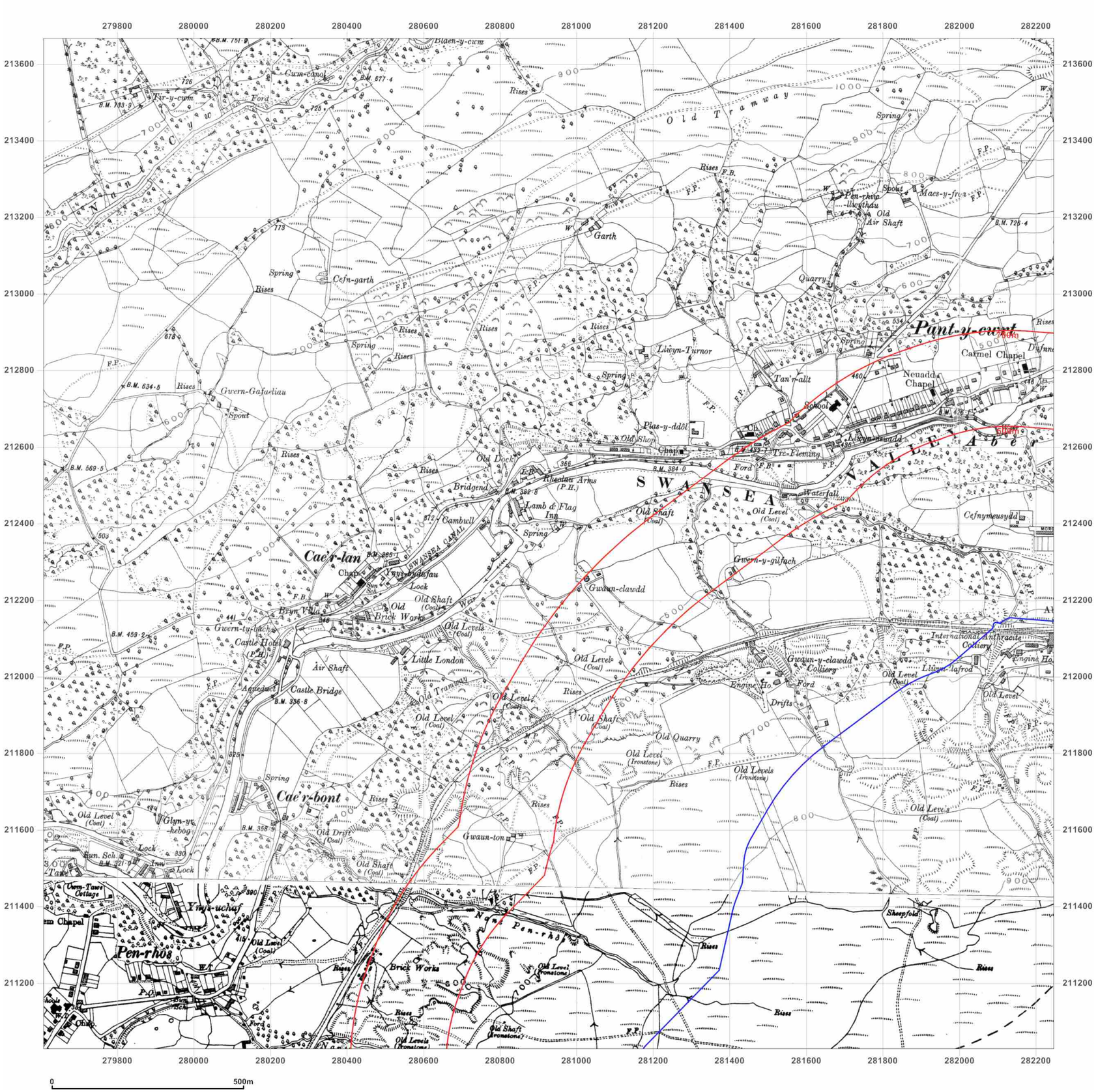

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282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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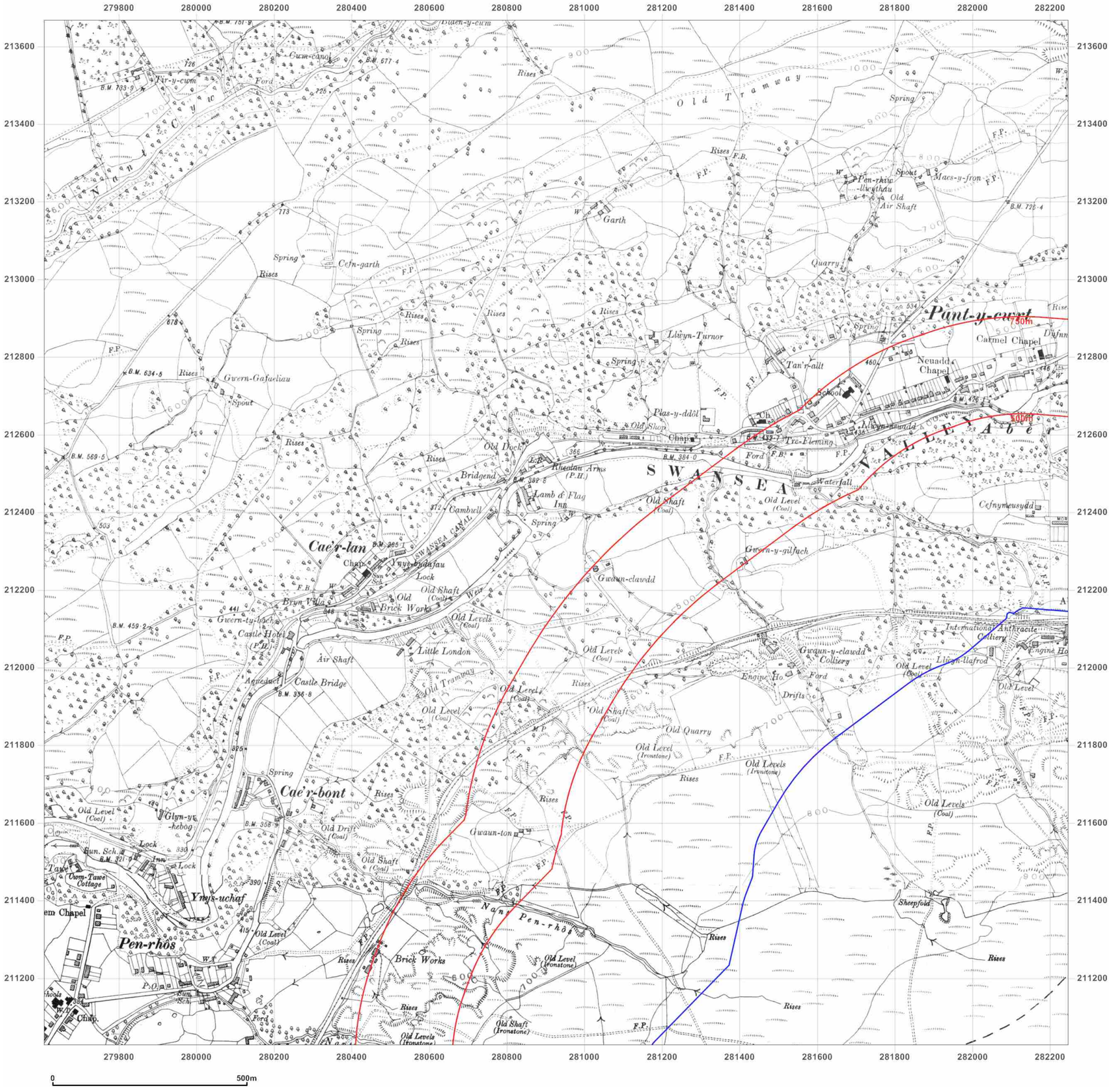

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Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1921
Edition 1921
Copyright N/A
Levelled N/A

Surveyed 1921
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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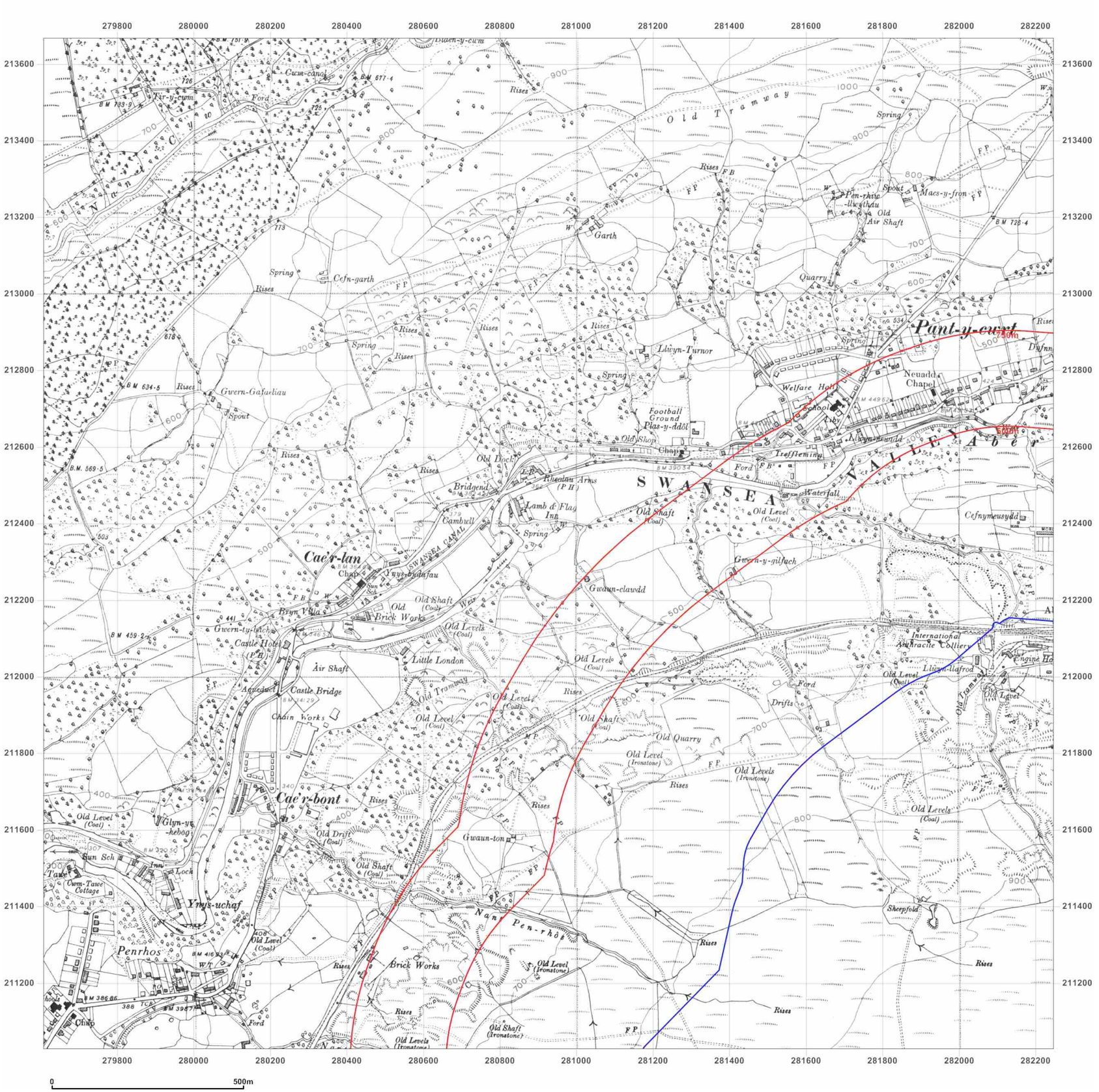

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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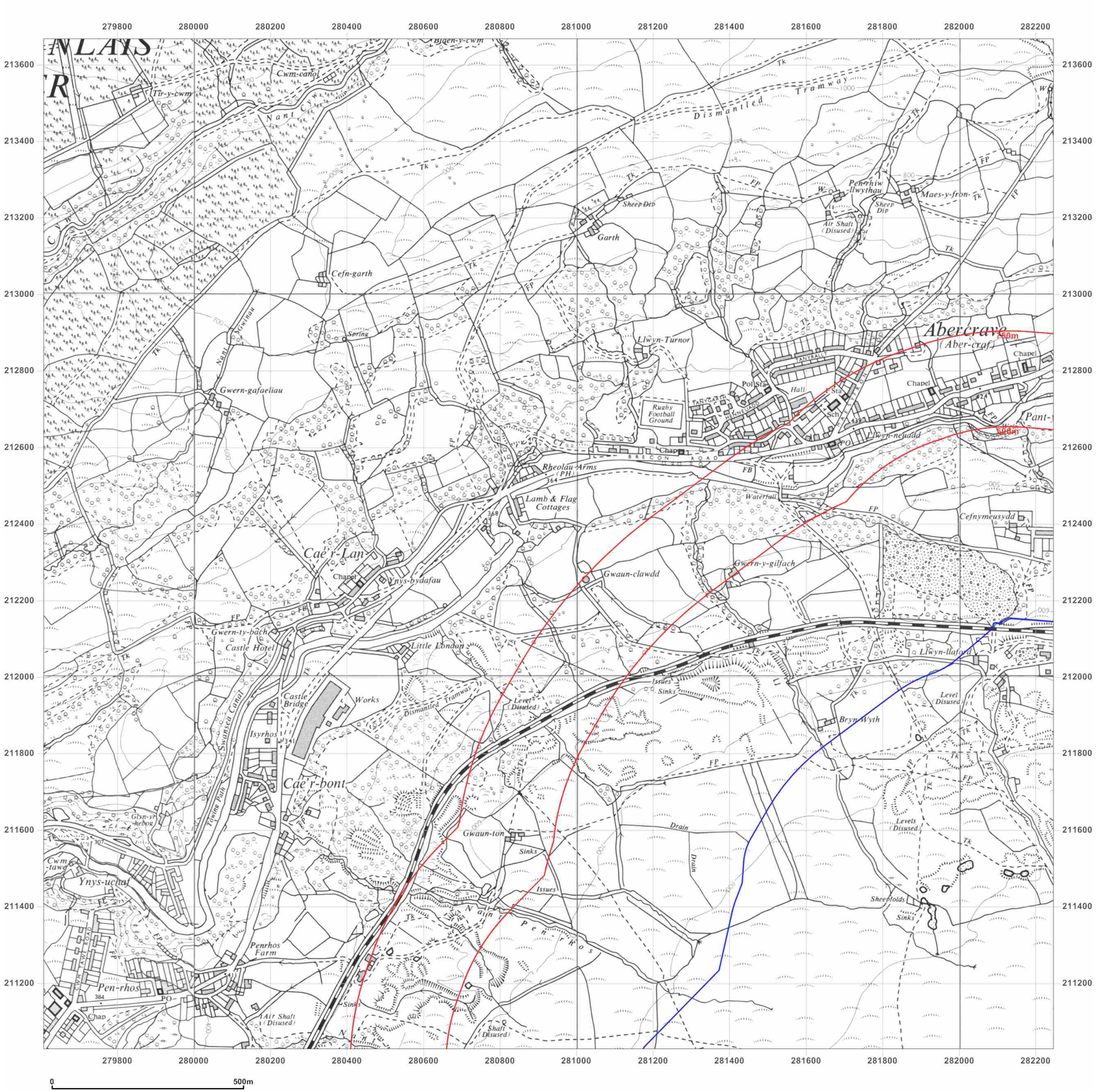

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Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: Provisional

Map date: **1965**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

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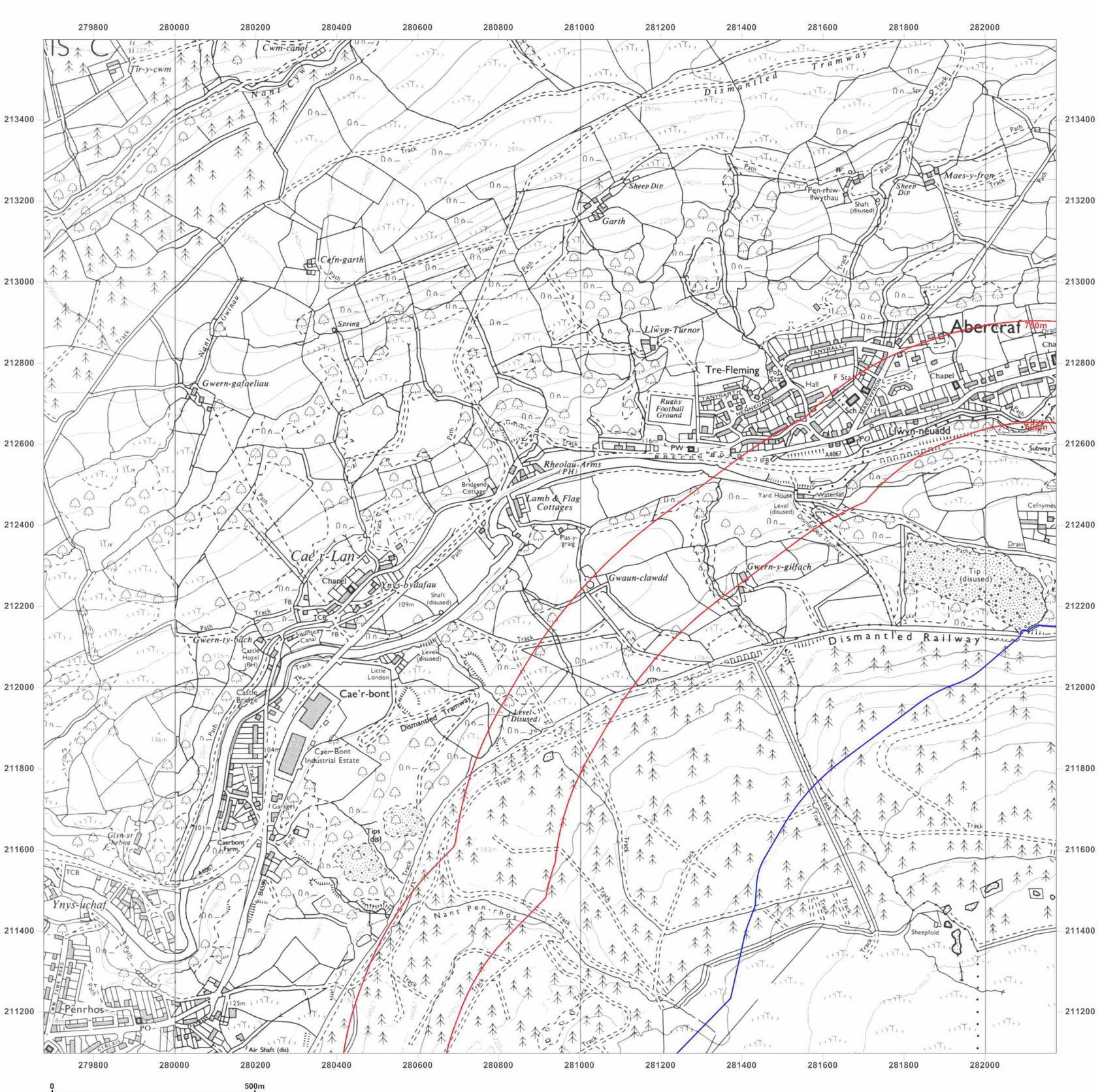

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: National Grid

Map date: **1985-1987**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1985
Revised 1985
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1985
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

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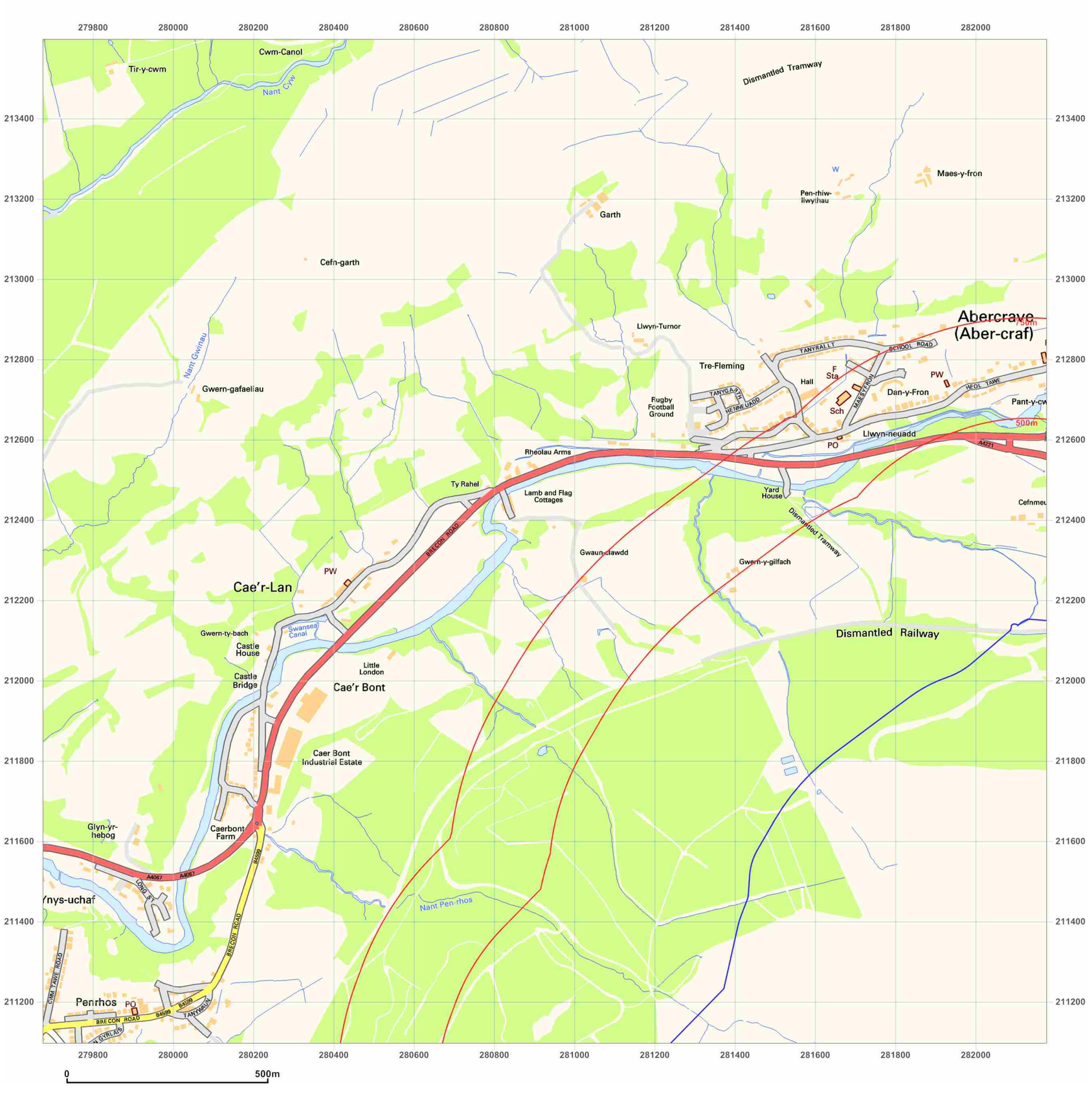

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: National Grid
Map date: **2001**
Scale: 1:10,000
Printed at: 1:10,000

N
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2001

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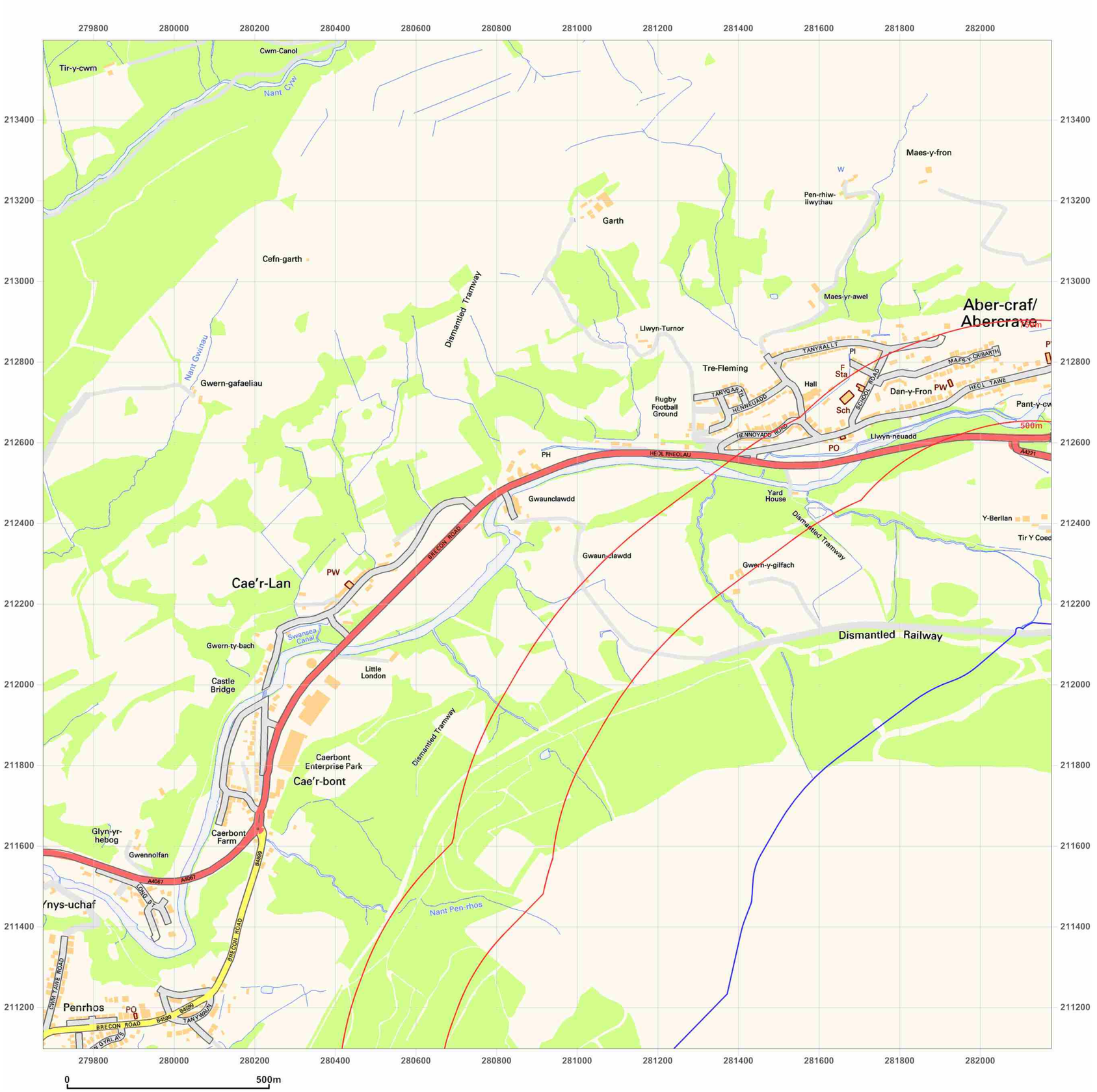

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Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
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2010

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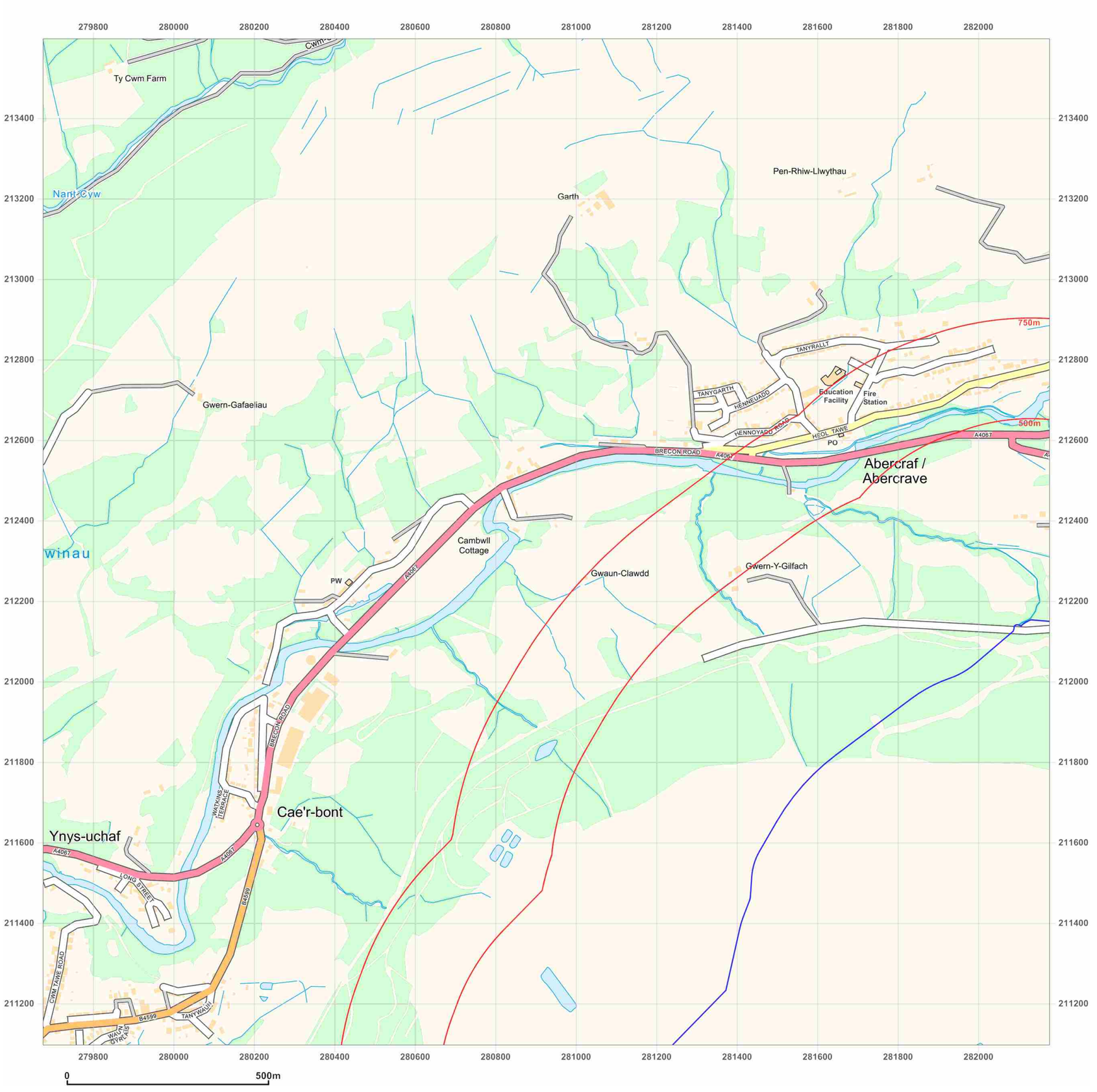

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_1_2
Grid Ref: 280926, 212347

Map Name: National Grid
Map date: **2019**
Scale: 1:10,000
Printed at: 1:10,000

N
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2019

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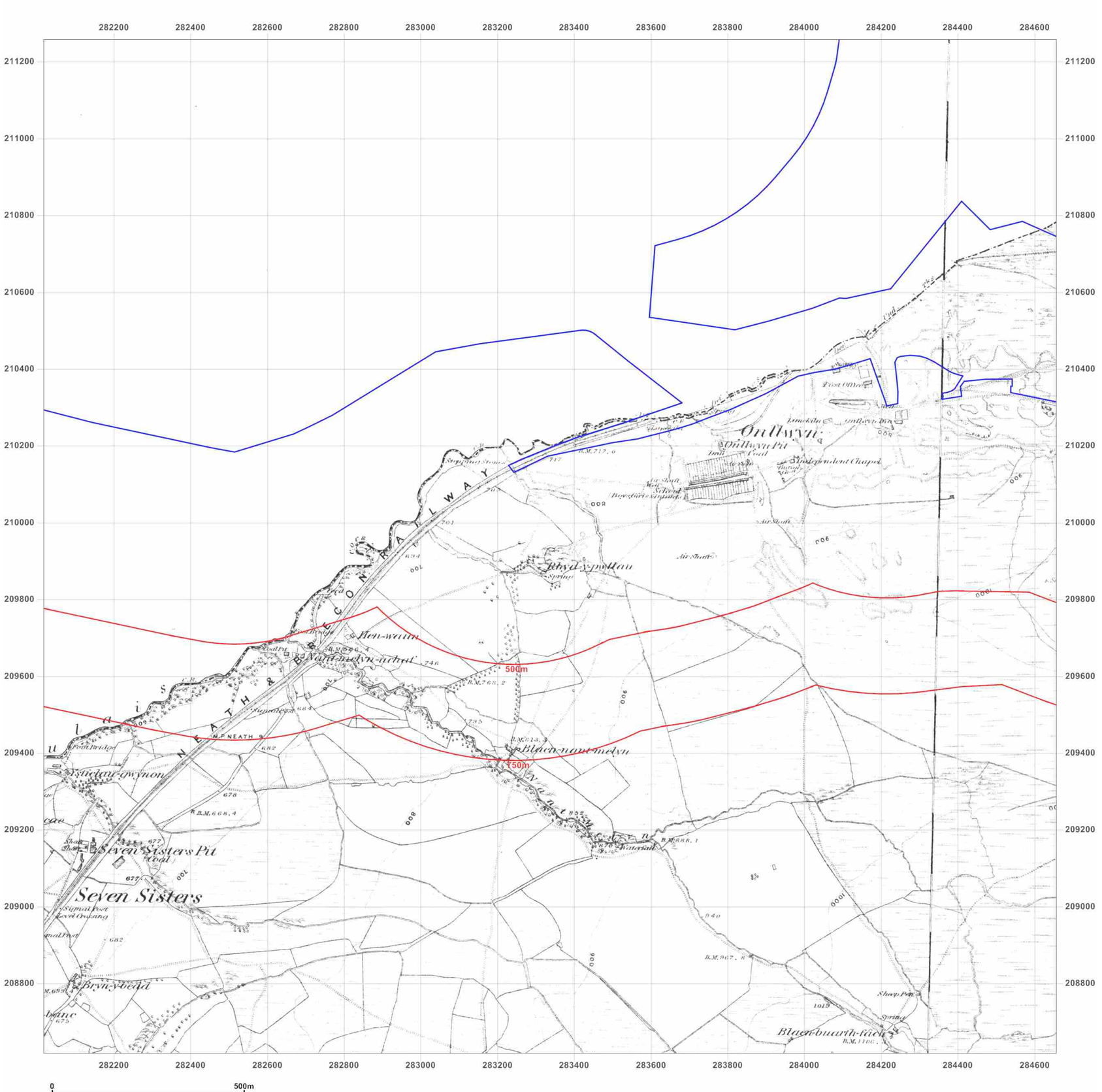

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Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1876**

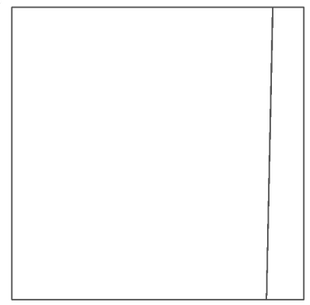
Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A



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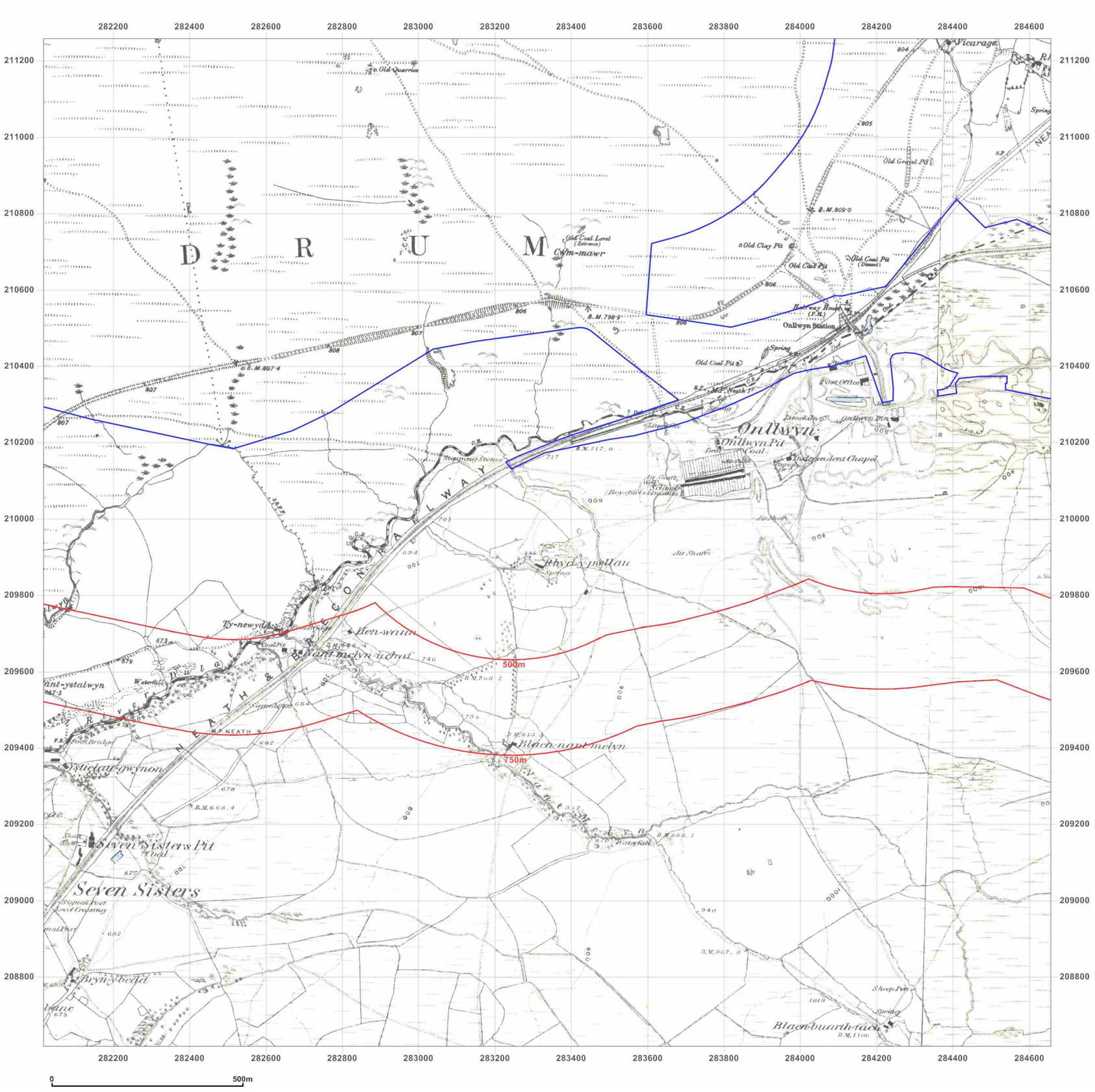

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1877**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1877
Revised 1877
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1877
Edition N/A
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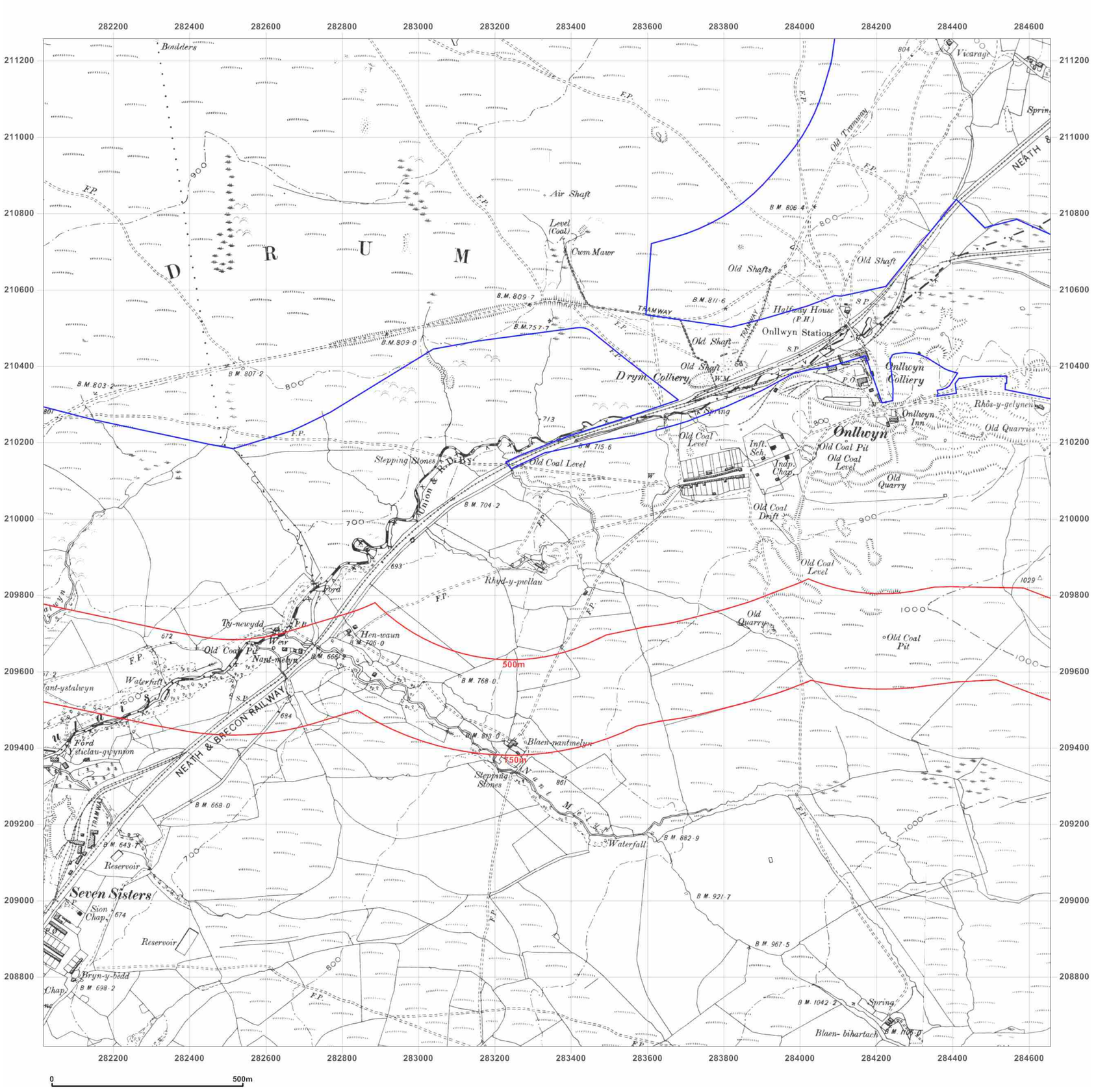

Site Details:

282917.86237392283,
211100.677756288

Client Ref:	GCORE
Report Ref:	GS-6396071_SS_2_1
Grid Ref:	283336, 209937

Map Name:	County Series
Map date:	**1900-1903**
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

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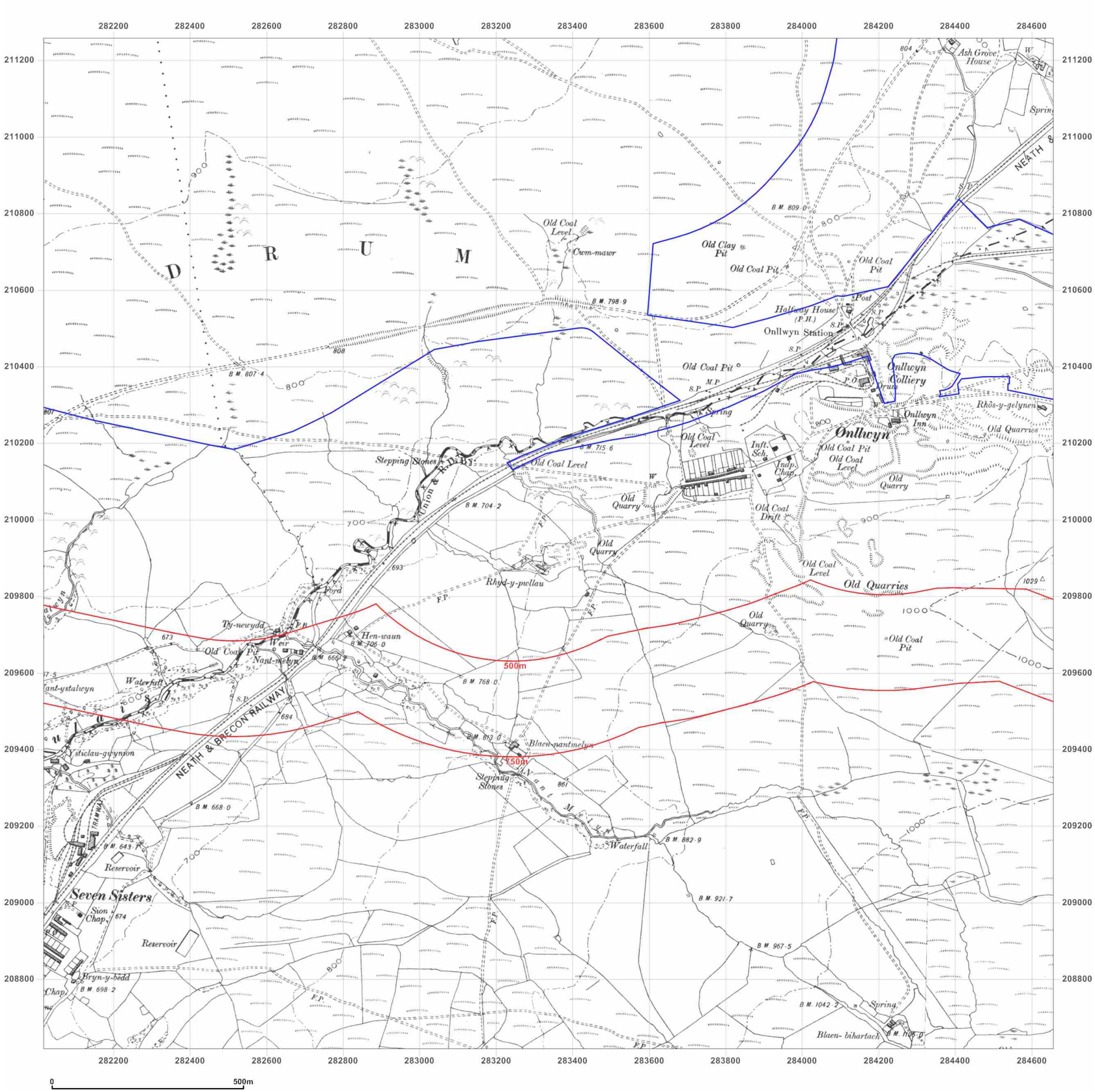

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1901-1903**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1901
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

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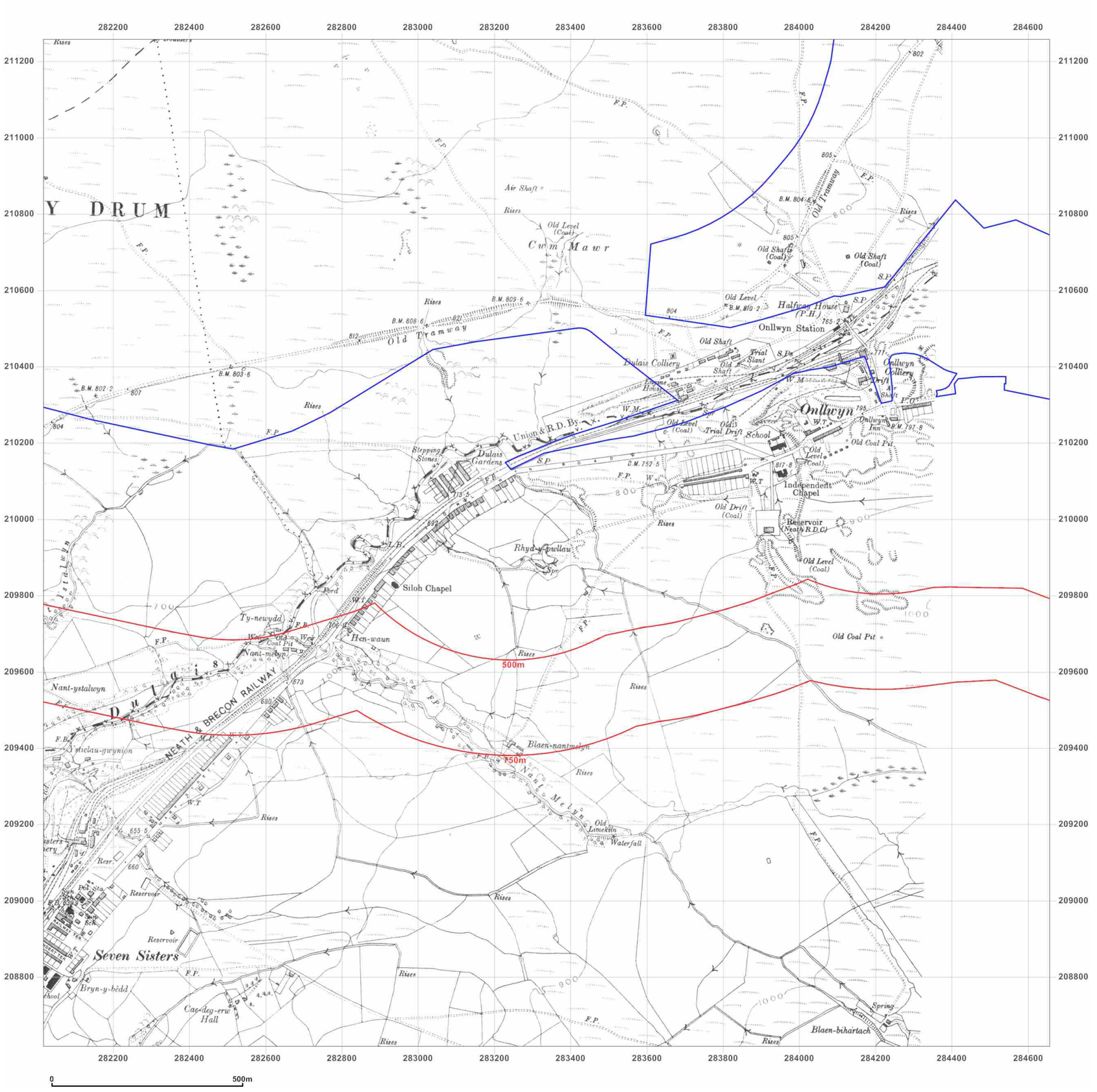

Site Details:

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211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1876
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

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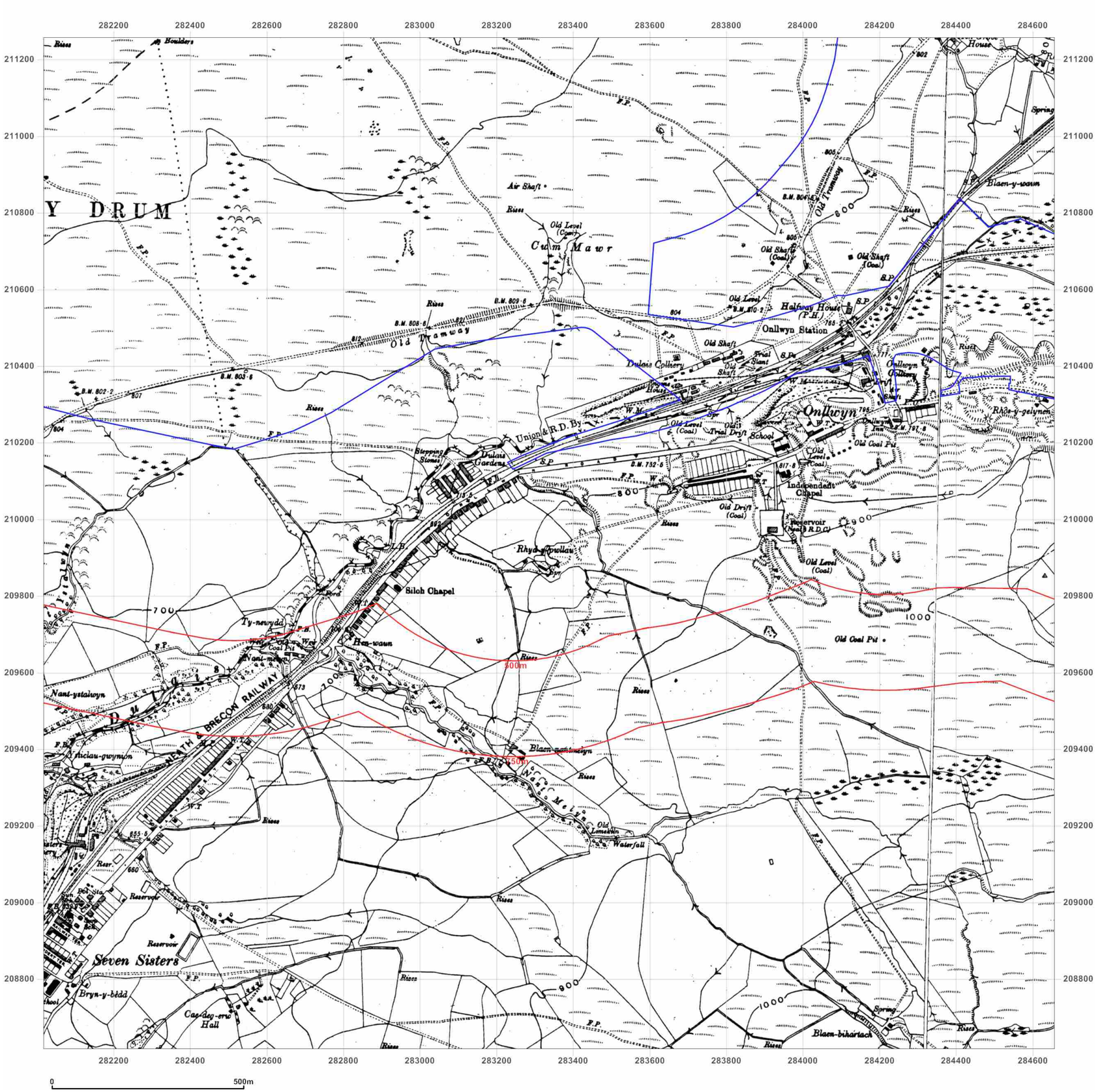

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Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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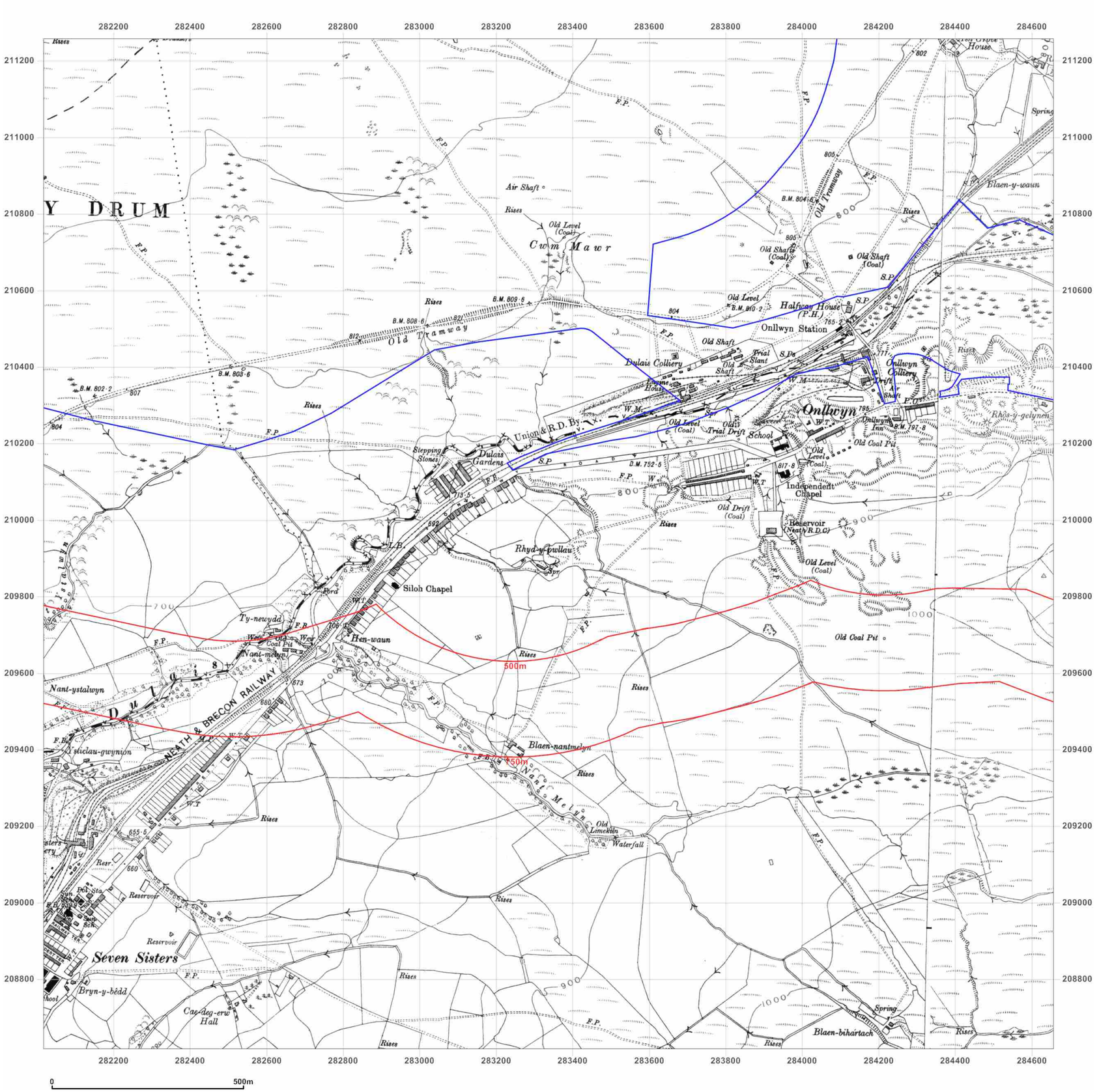

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1921
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1921
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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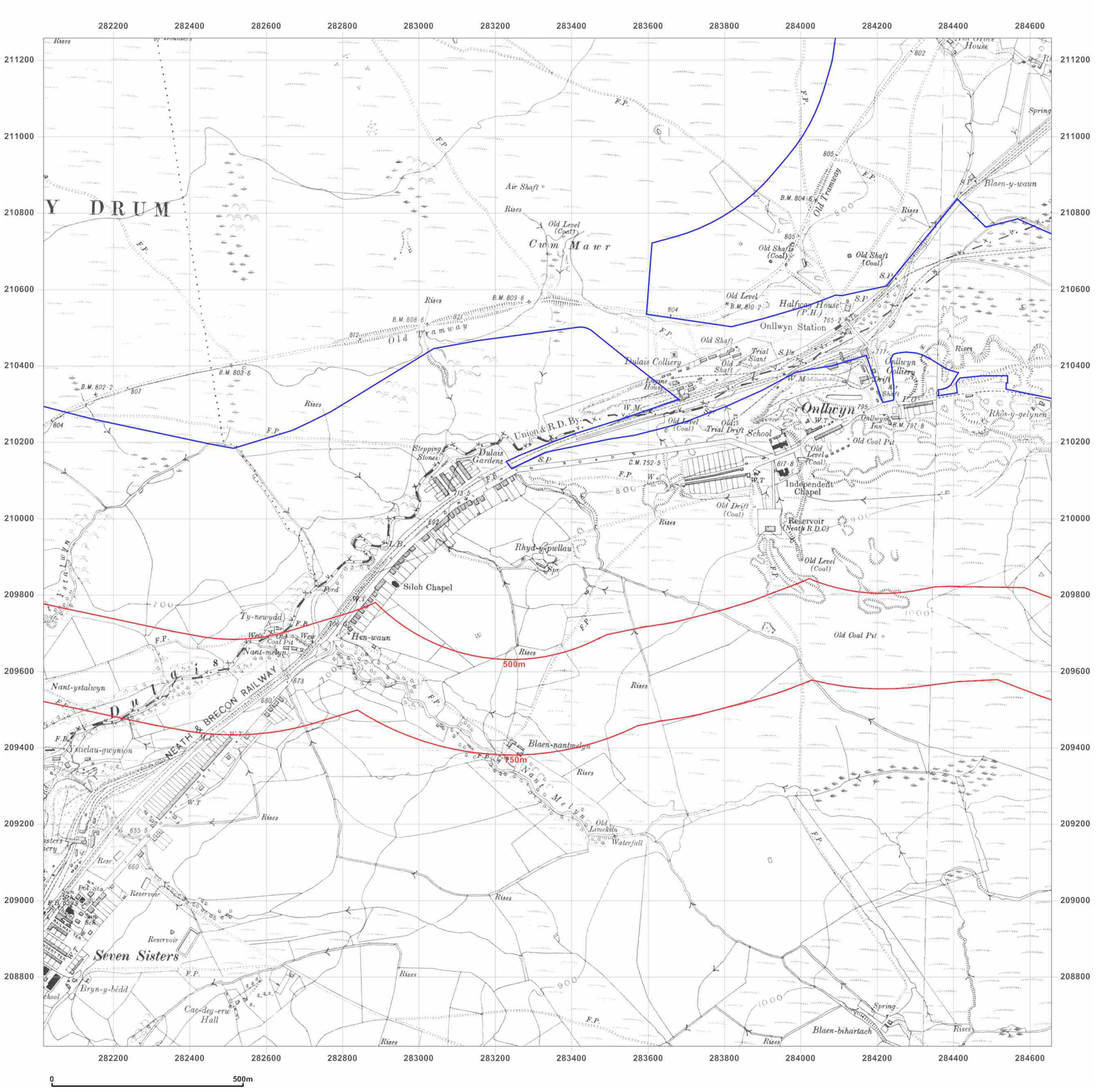

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1921
Edition 1921
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1921
Edition 1921
Copyright N/A
Levelled N/A

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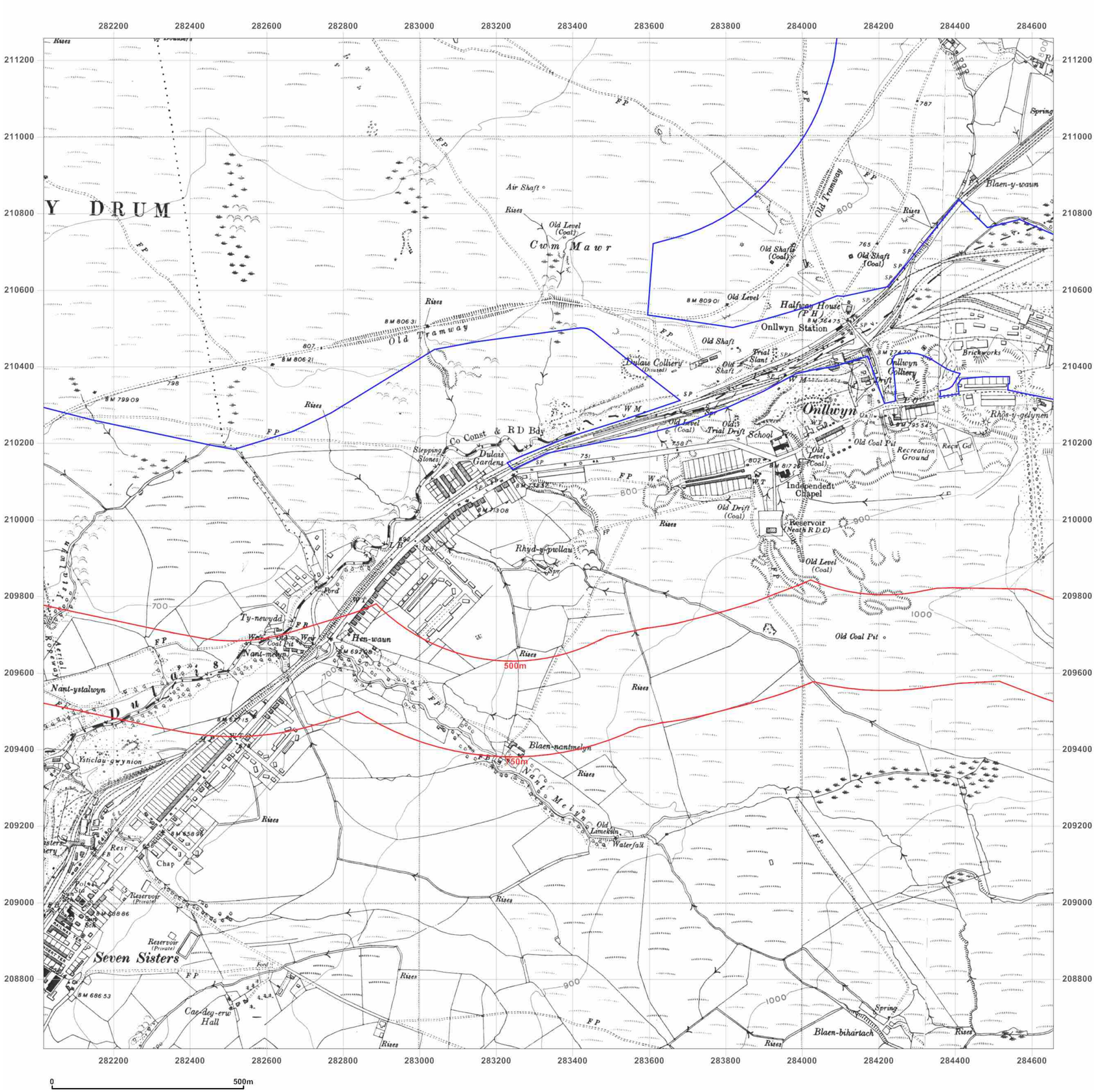


Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: County Series

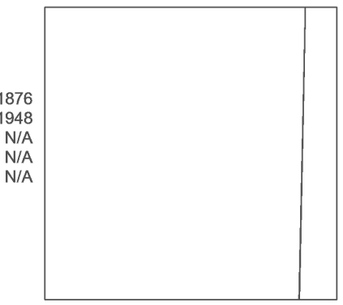
Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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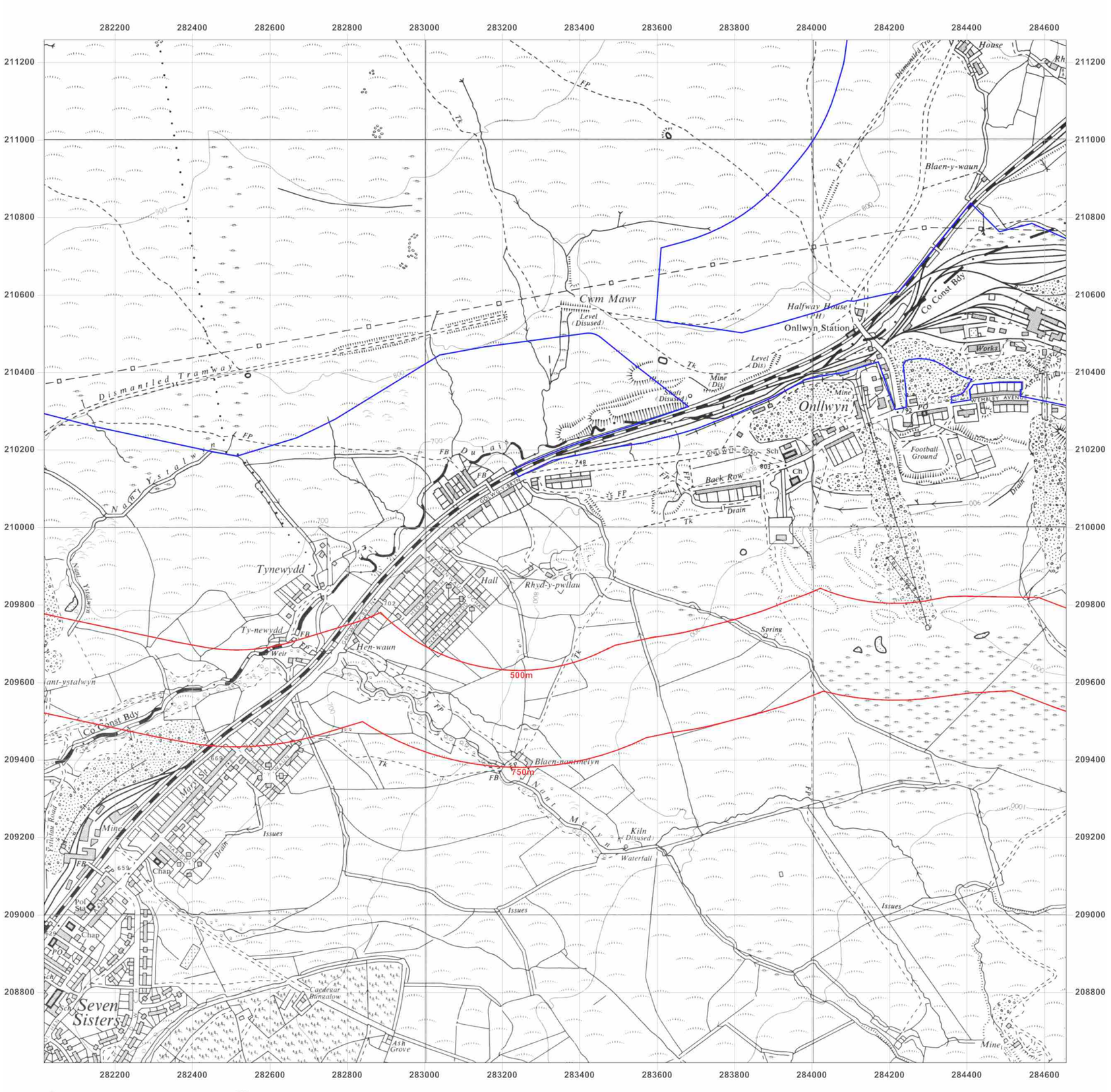

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: Provisional

Map date: **1964-1965**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1964
Revised 1964
Edition N/A
Copyright N/A
Levelled N/A

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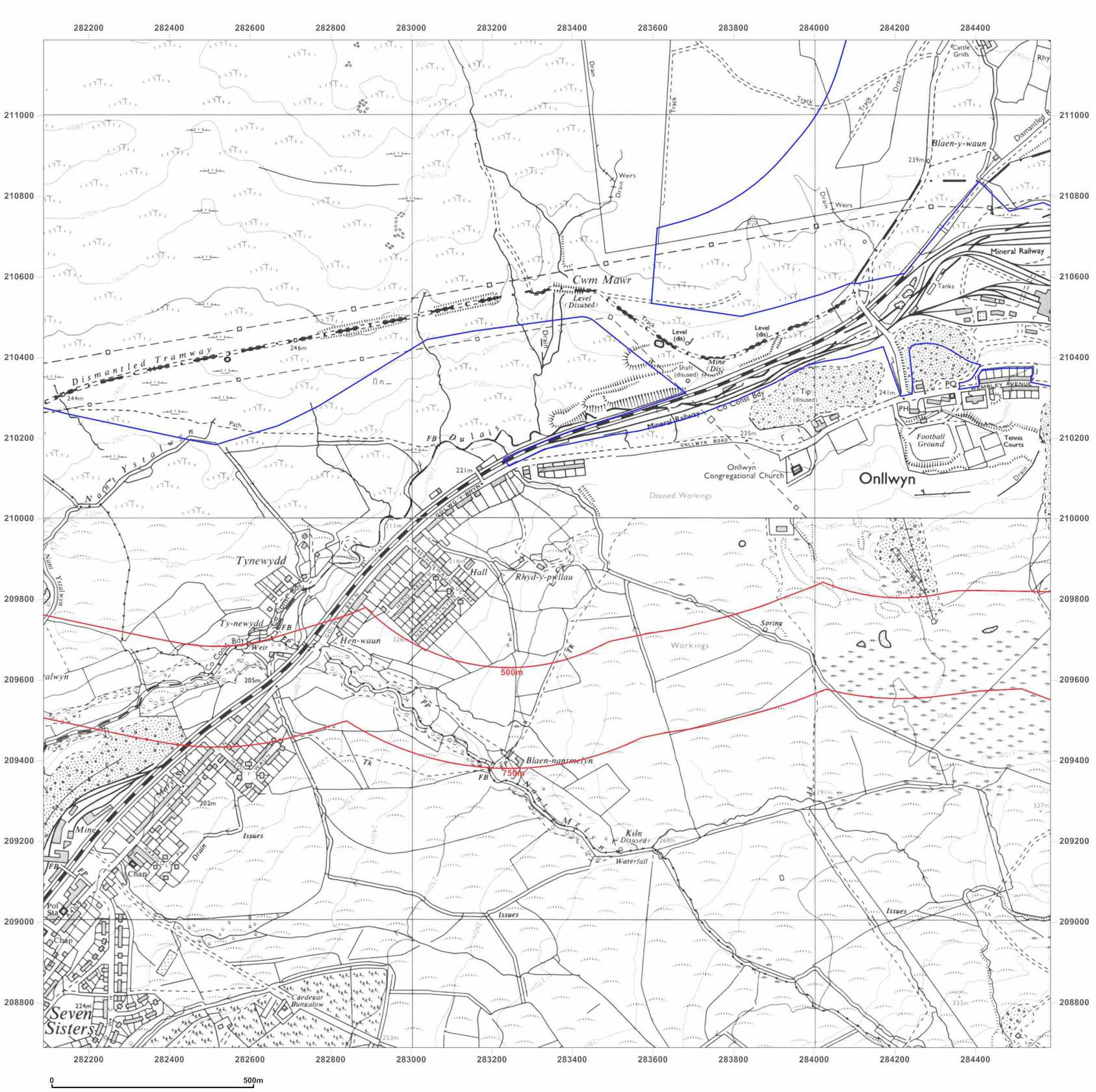

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: National Grid

Map date: **1987-1988**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1985
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1962
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

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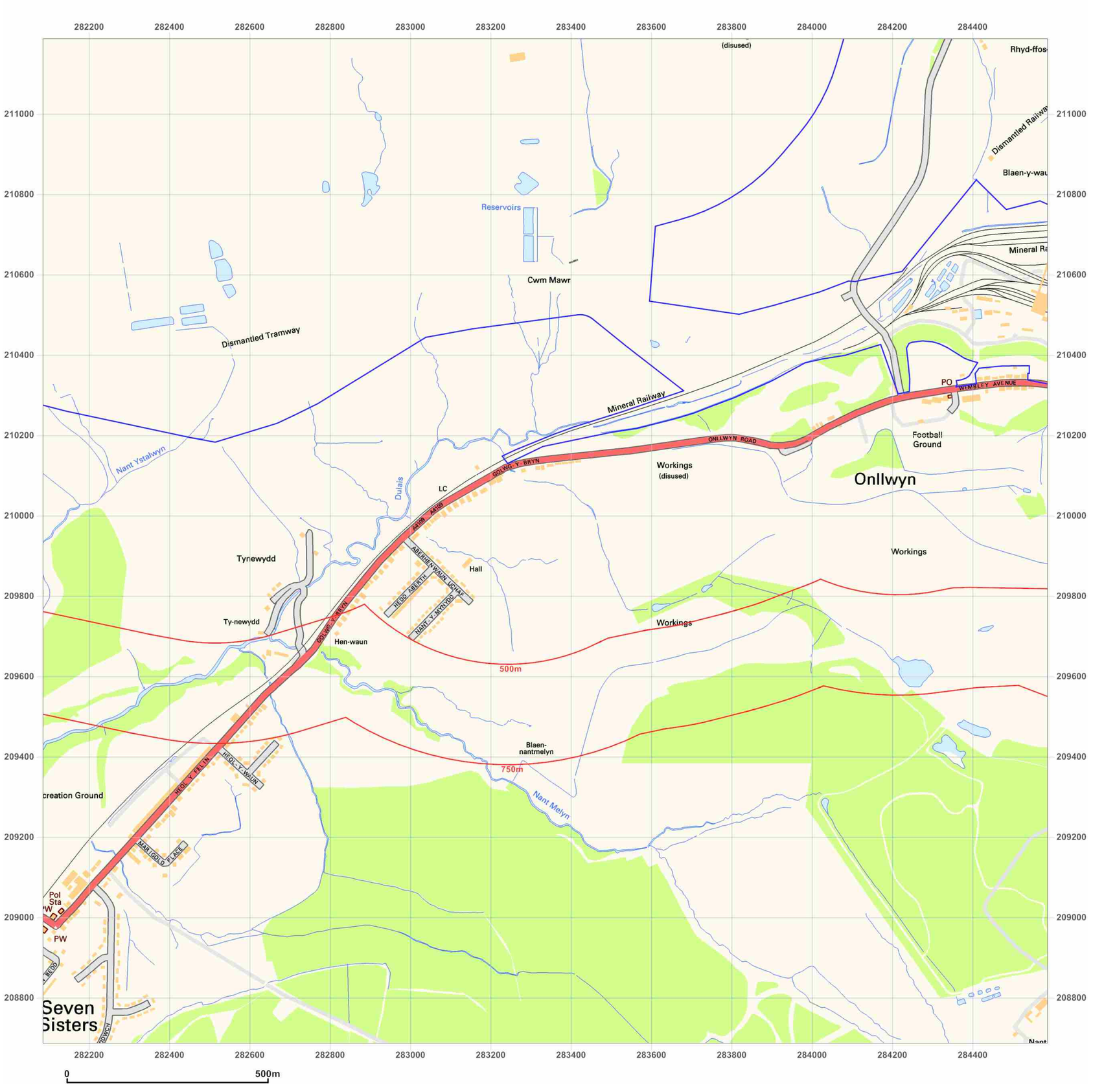

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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2001

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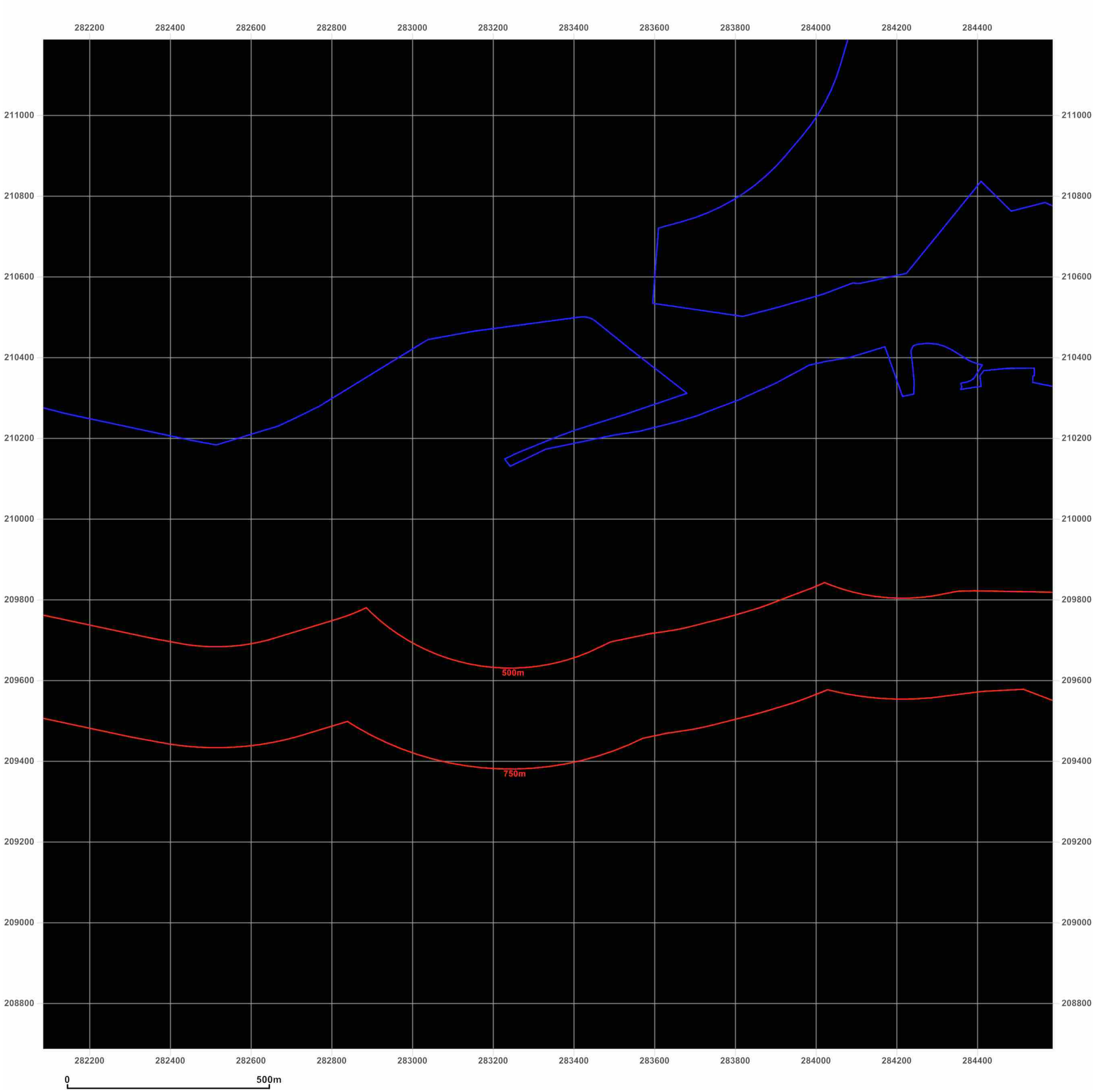

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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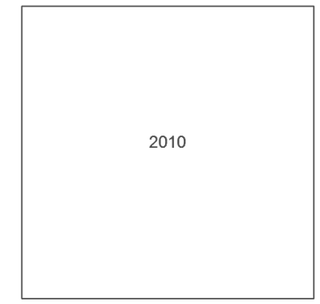

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Production date: 14 October 2019

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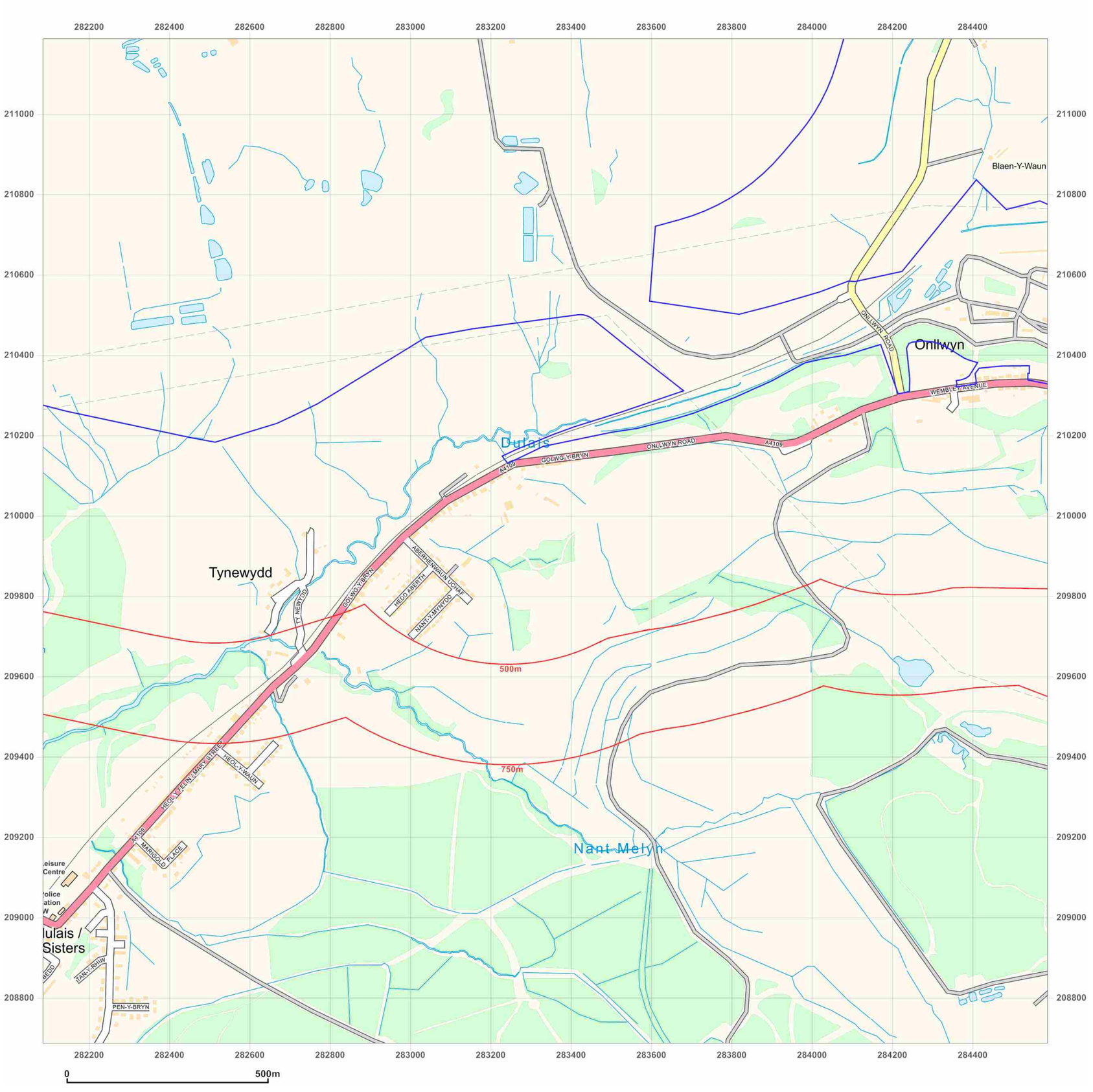

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_1
Grid Ref: 283336, 209937

Map Name: National Grid
Map date: **2019**
Scale: 1:10,000
Printed at: 1:10,000

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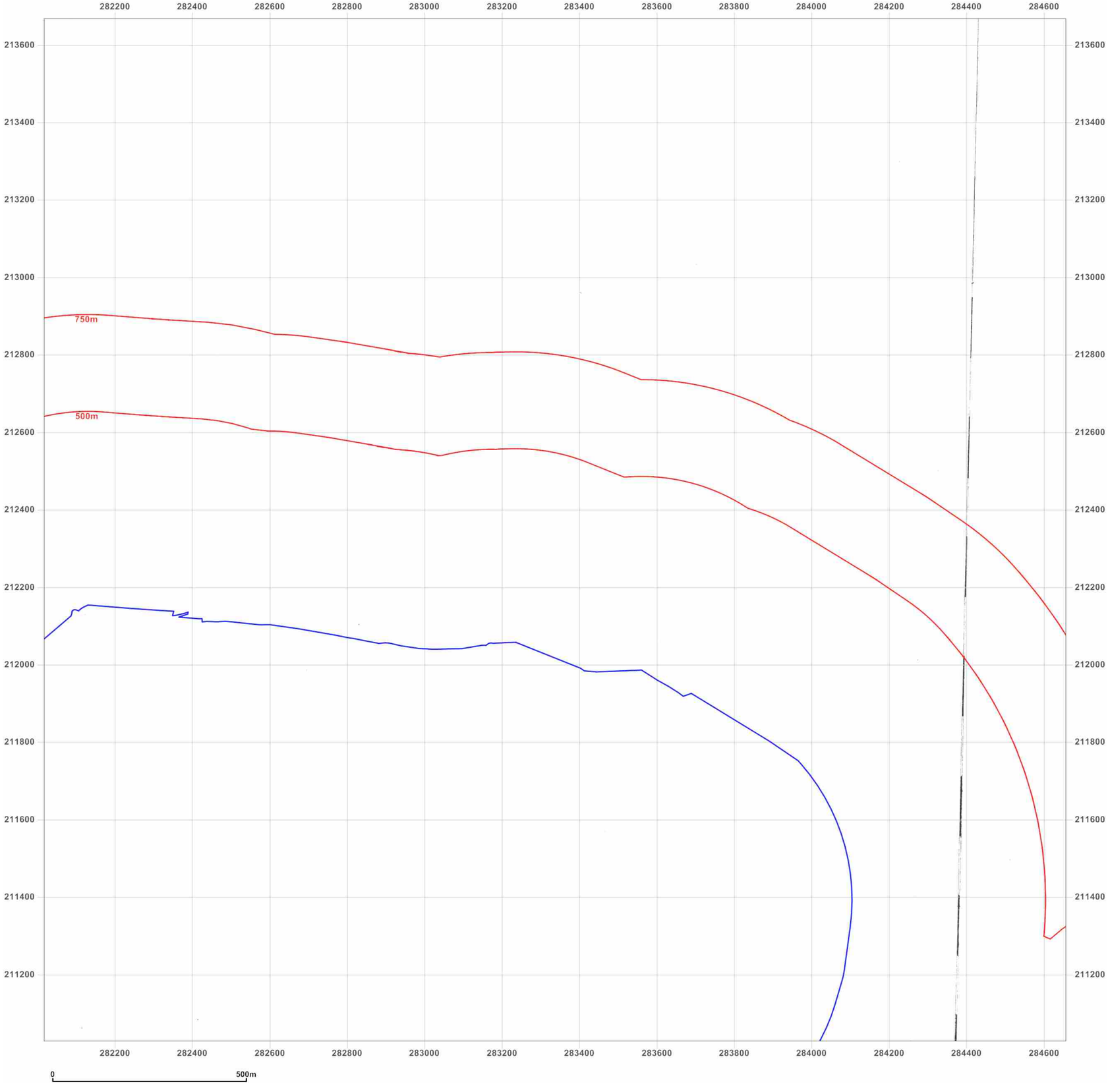

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: County Series

Map date: **1876**

Scale: 1:10,560

Printed at: 1:10,560

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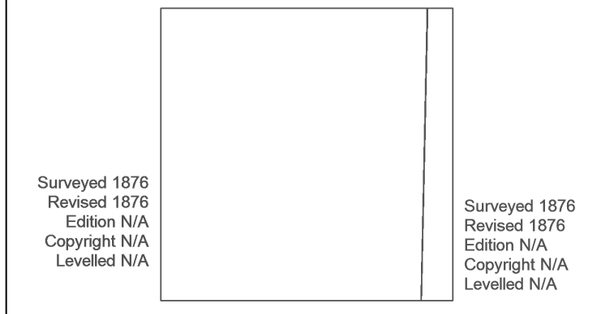

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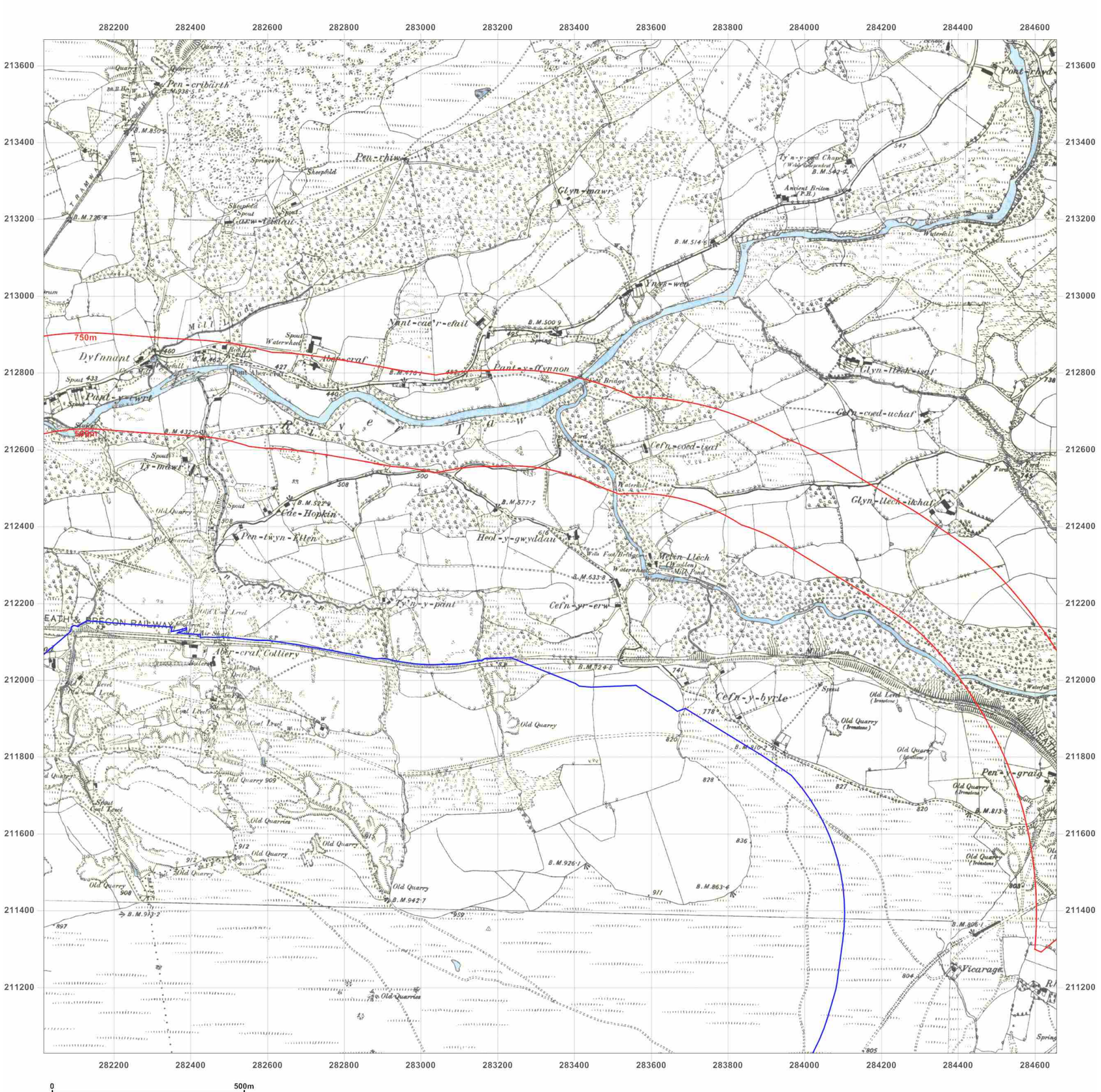
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Pen-chwa
Glyn-mawr
Ynys-wen
Yant-cae'r-efail
Dyfnnant
Pant-y-cwrt
Pant-y-ffynnon
Abercraf
Glyn-llech-isaf
Cefn-coed-uchaf
Cefn-coed-isaf
Glyn-llech-uchaf
Ty'n-y-coed Chapel
Ancient Briton (P.H.)
Pont-rhyd
Waterfall
Ty-mawr
Cae-Hopkin
Pen-twyn-Ritlen
Heol-y-gwyddau
Melin-Llech (Woollen) Mill
Ty'n-y-pant
Cefn-yr-erw
Abercraf Colliery
Cefn-y-byrle
Old Quarry
Old Quarries
Pen-y-graig
Vicarage
Old Level (Ironstone)
Old Quarry (Ironstone)
Old Coal Level
Spout
Waterwheel
Ford
Foot Bridge
Wells Foot Bridge
Mill Pond
Sheepfold
Springs
Quarry
Old Quarry
Old Quarries
Old Coal Level
Old Level (Ironstone)
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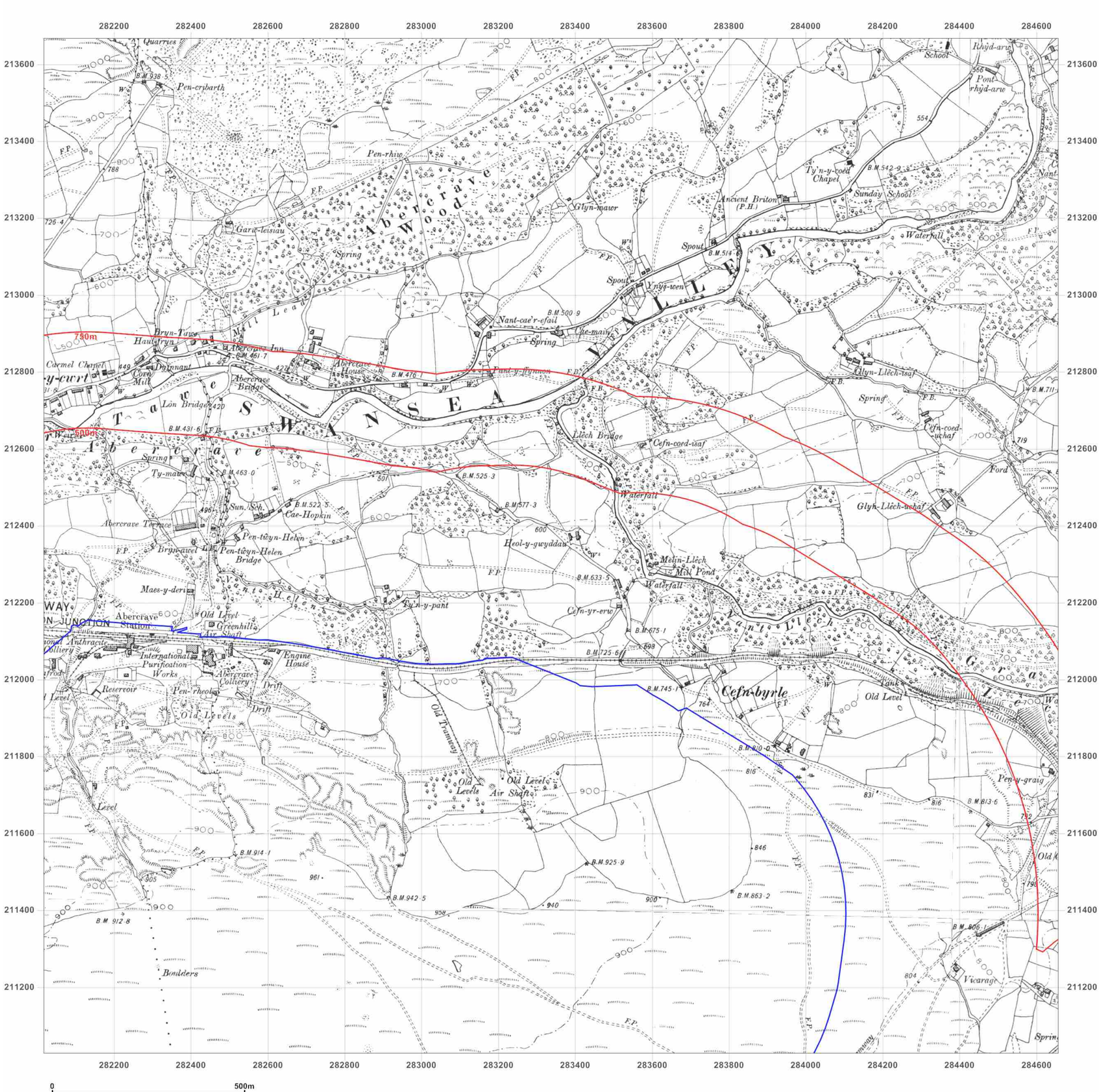
Spring
Ford
Foot Bridge
Waterfall
Waterwheel
Spout



Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: County Series

Map date: **1900-1903**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

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Map legend available at:
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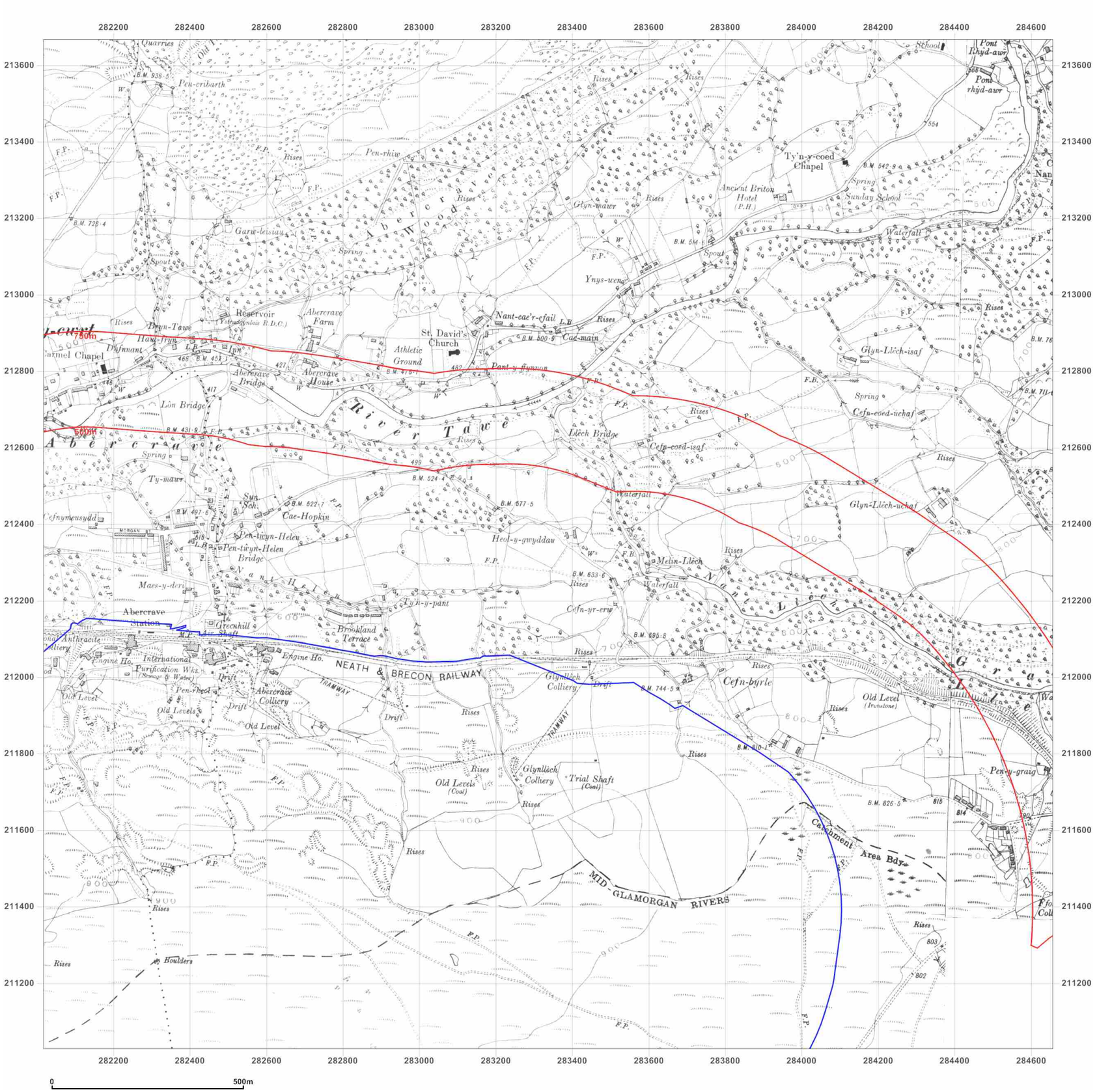

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: County Series

Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

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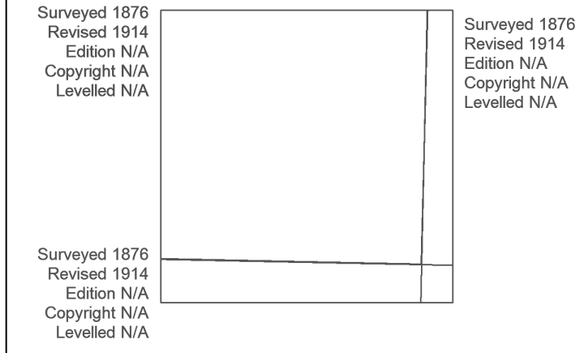

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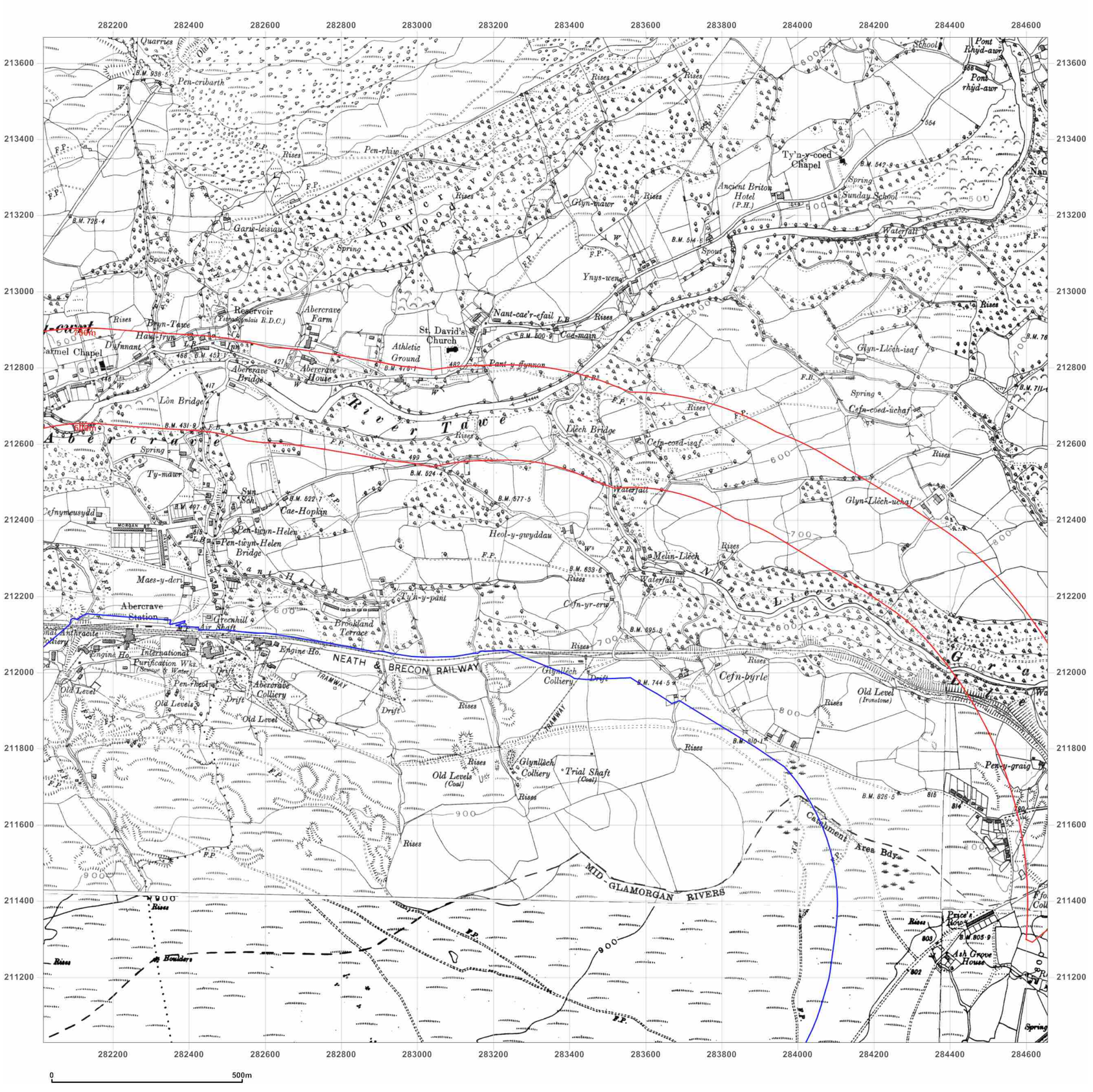

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A			Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A			Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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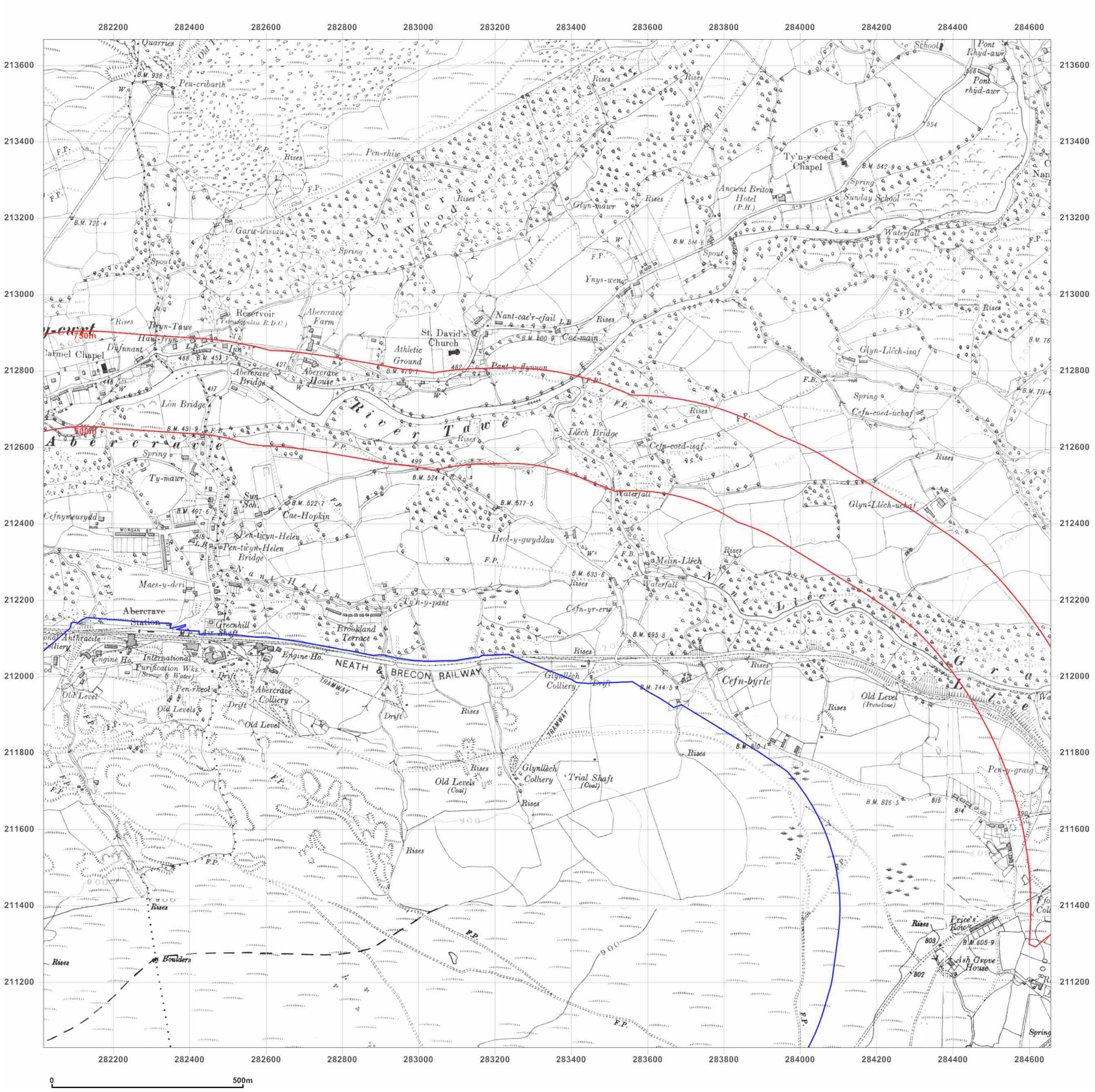
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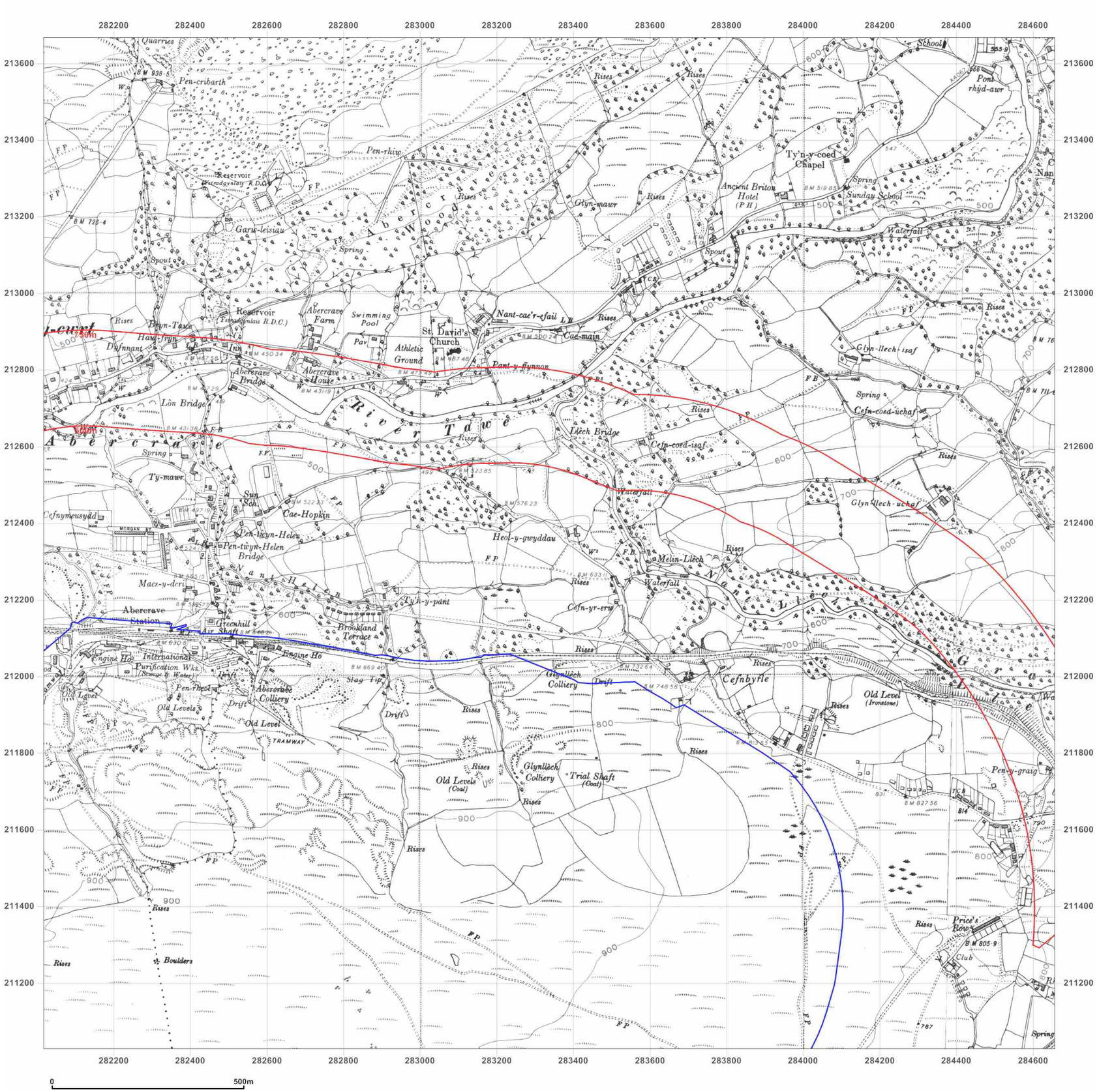
211800
211600
211400
211200
Abercrave
Abercrave Station
Abercrave Colliery
Abercrave Farm
Abercrave Bridge
Abercrave Houses
Abercrave Station
Abercrave Air Shaft
Abercrave Colliery
Abercrave Colliery Drift
Abercrave Colliery Old Level
Abercrave Colliery Old Levels
Abercrave Colliery Tramway
Abercrave Colliery Tramway
Abercrave Colliery Tramway



Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876 Revised 1948 Edition N/A Copyright N/A Levelled N/A	Surveyed 1876 Revised 1948 Edition N/A Copyright N/A Levelled N/A
Surveyed 1876 Revised 1948 Edition N/A Copyright N/A Levelled N/A	Surveyed 1876 Revised 1948 Edition N/A Copyright N/A Levelled N/A

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Production date: 14 October 2019

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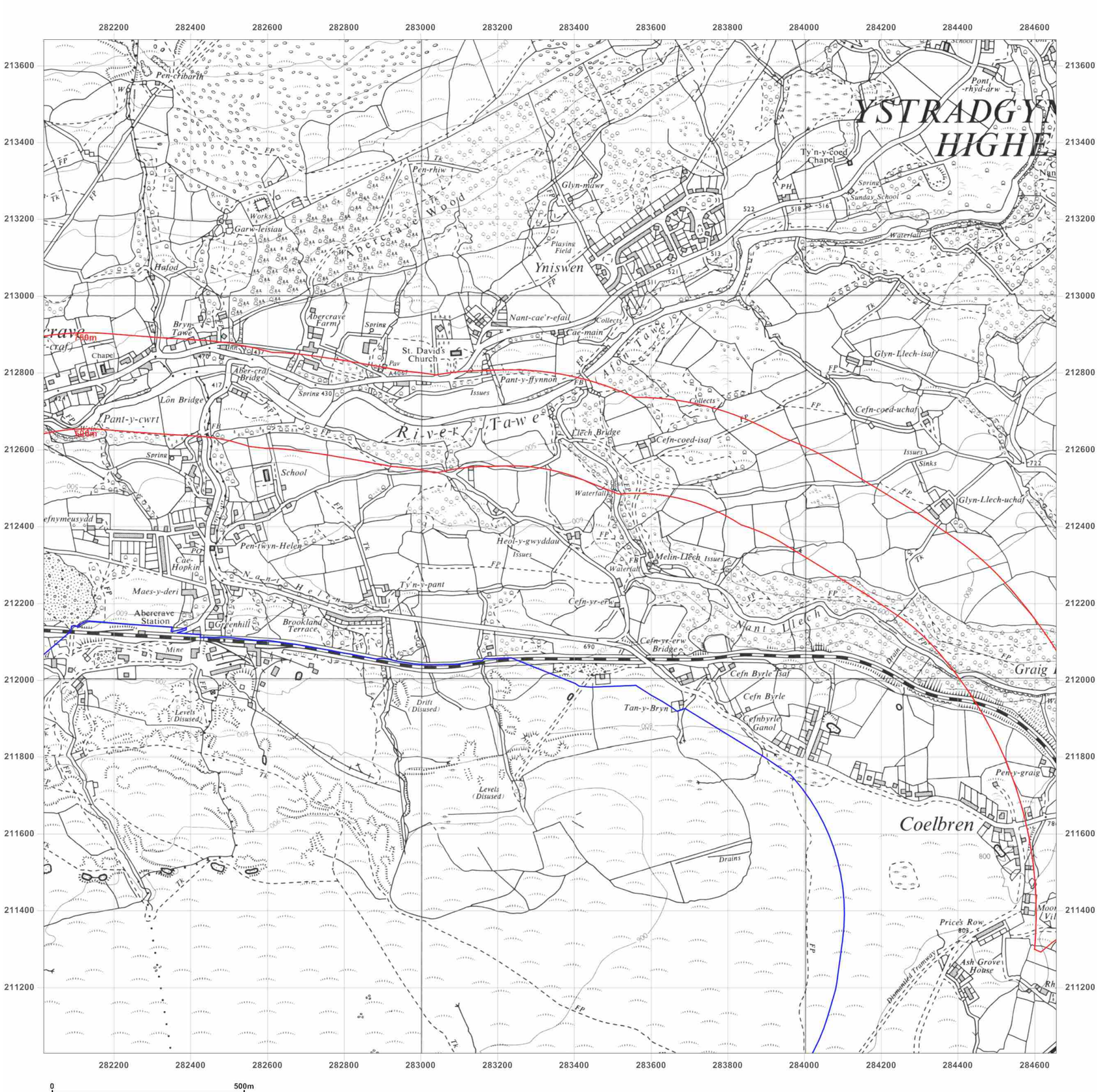

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: Provisional

Map date: **1965**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 14 October 2019

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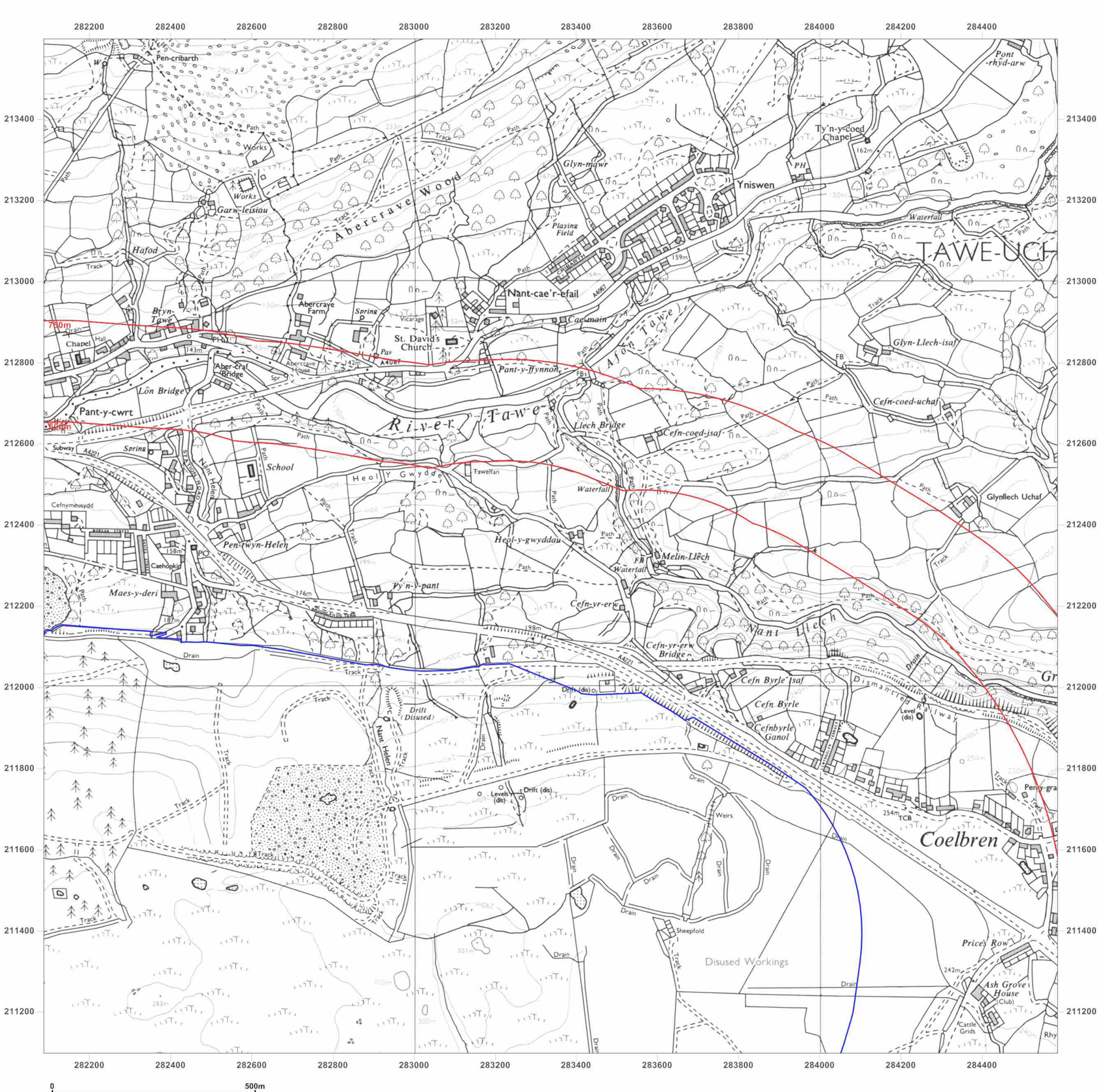

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: National Grid

Map date: **1987**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1985
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

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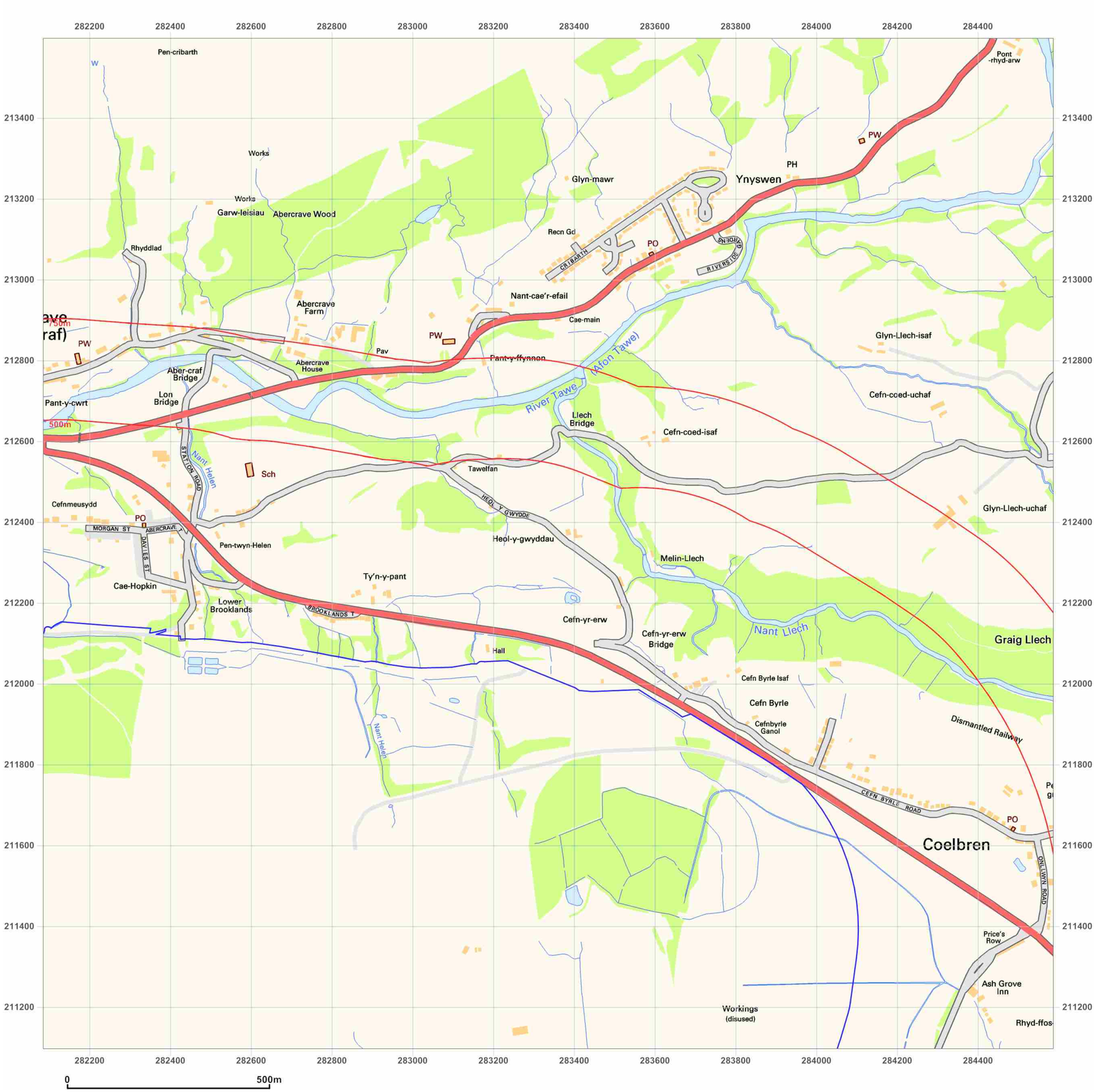

Groundsure INSIGHTS

Site Details:

282917.86237392283, 211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: National Grid
Map date: **2001**
Scale: 1:10,000
Printed at: 1:10,000

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Production date: 14 October 2019

Map legend available at:
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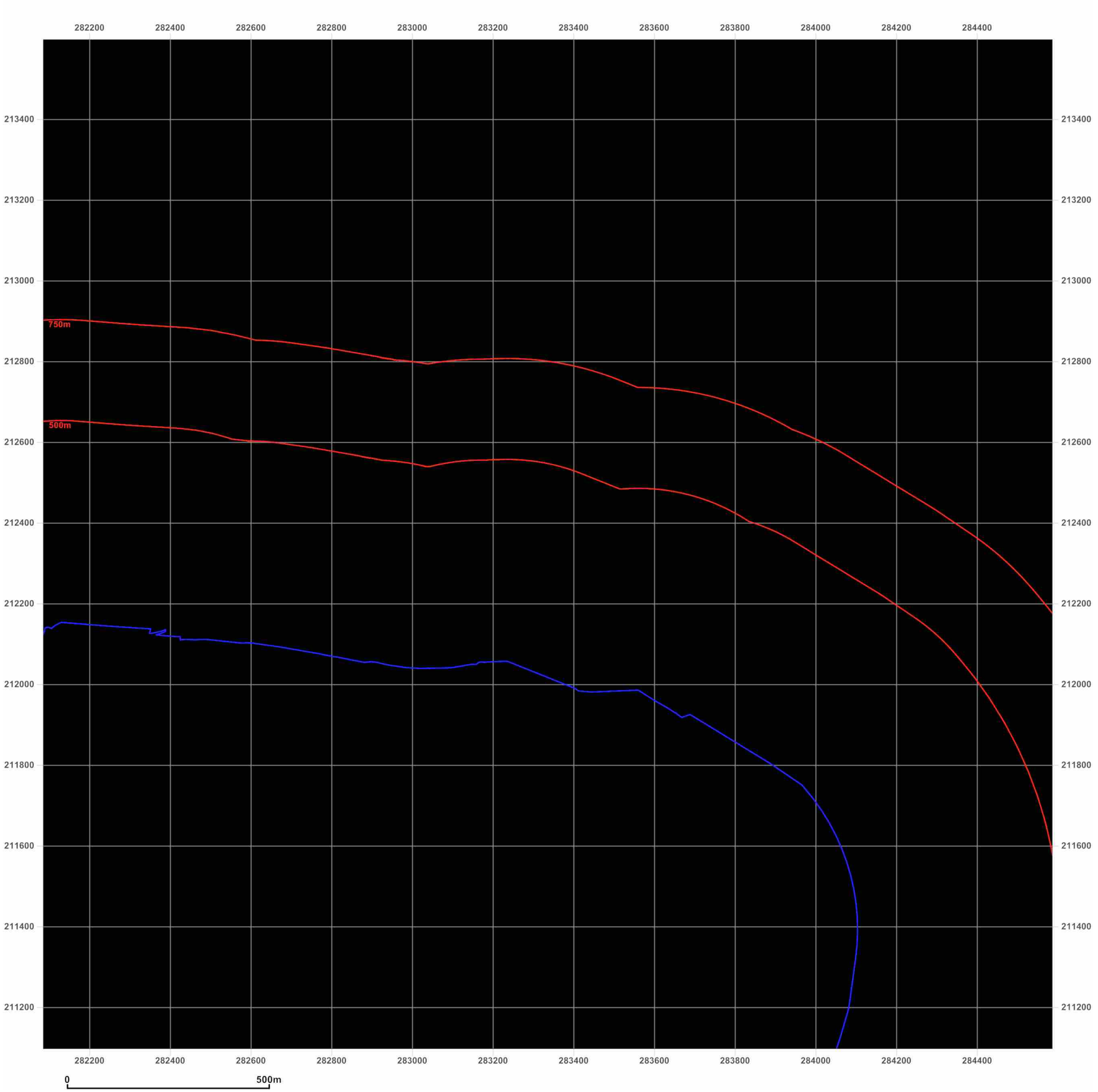

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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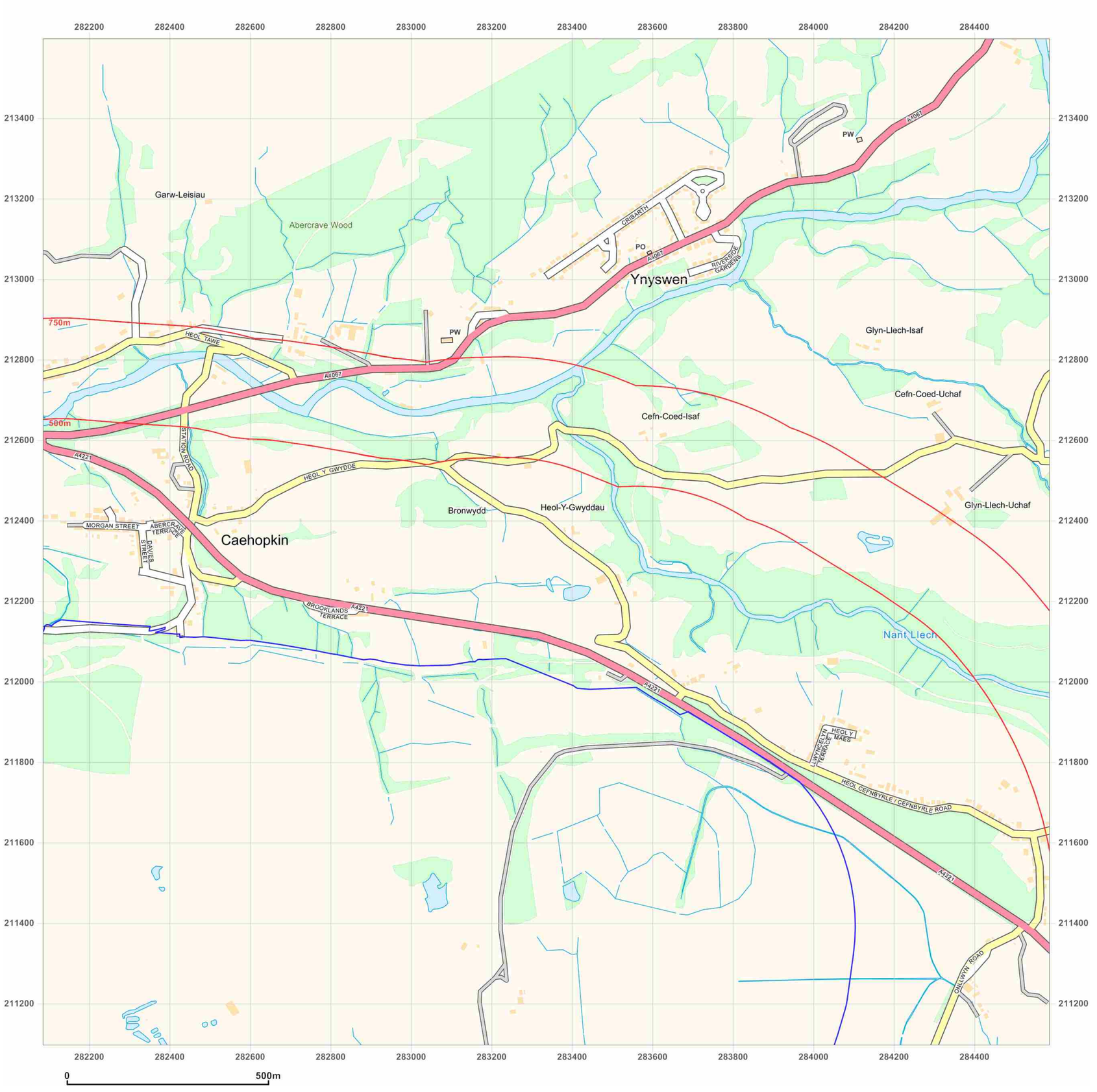

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_2_2
Grid Ref: 283336, 212347

Map Name: National Grid
Map date: **2019**
Scale: 1:10,000
Printed at: 1:10,000

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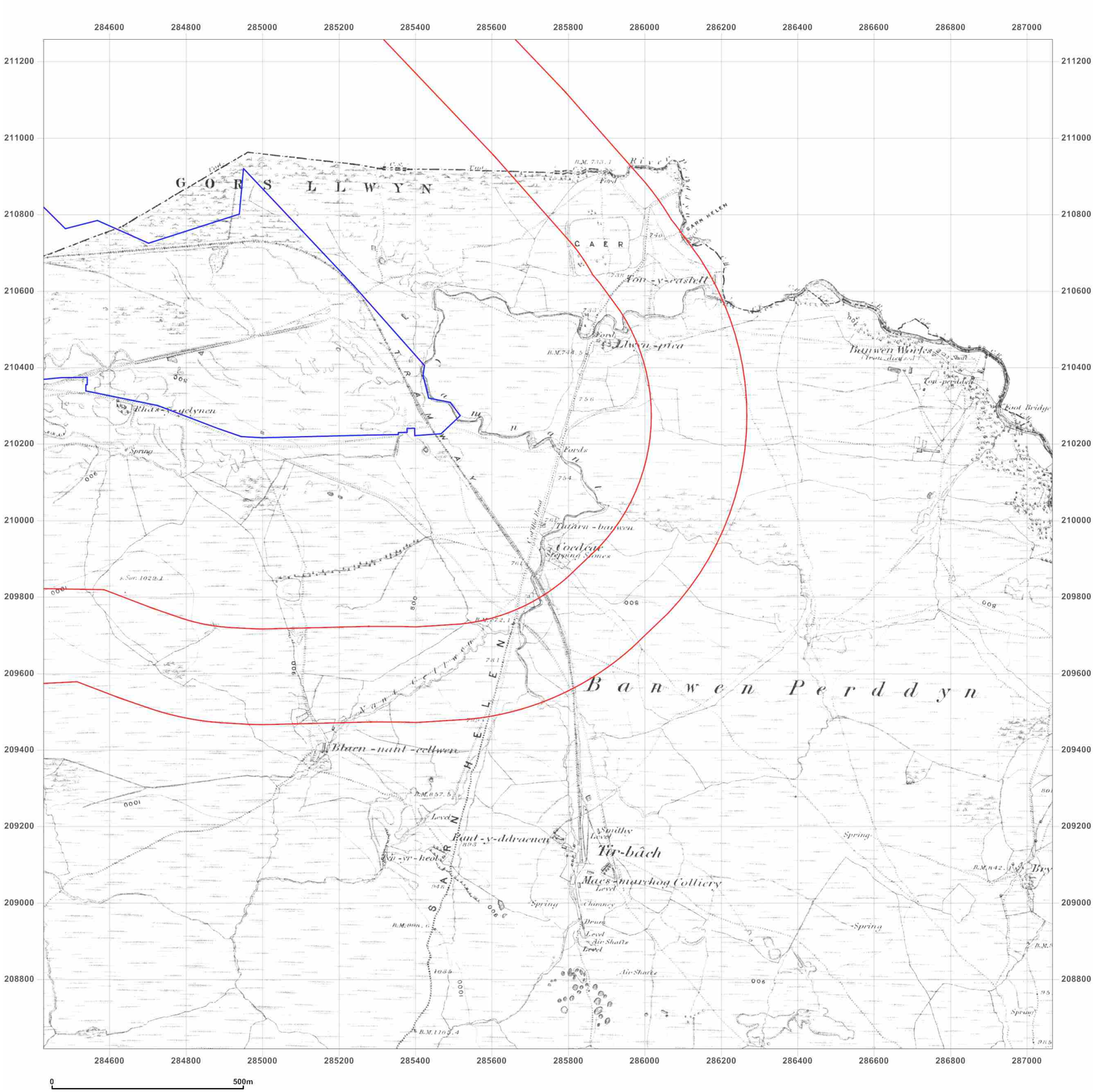

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: County Series

Map date: **1876**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

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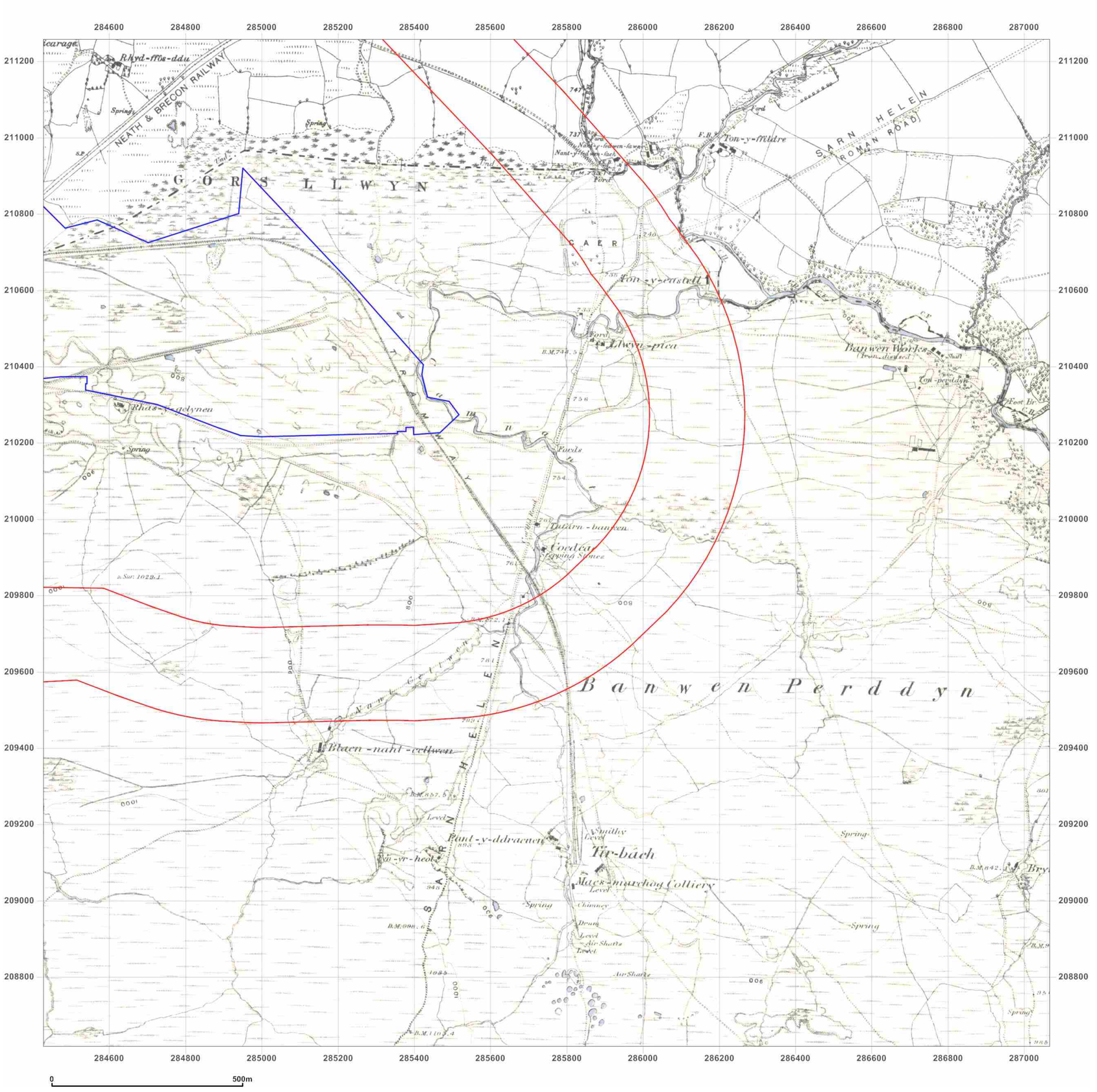

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: County Series

Map date: **1877**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1877
Revised 1877
Edition N/A
Copyright N/A
Levelled N/A

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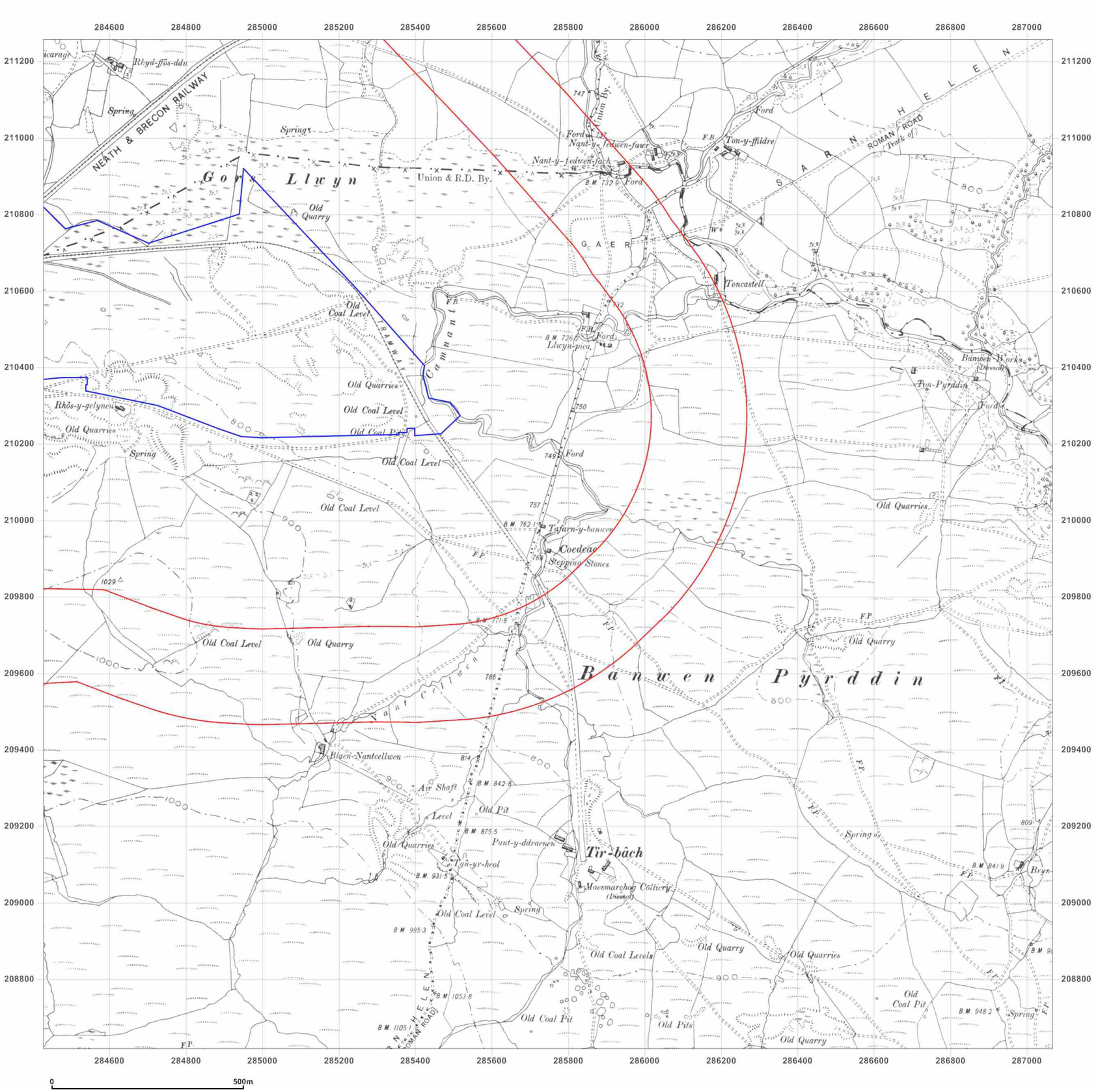
Production date: 14 October 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf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NEATH & BRECON RAILWAY
Rhyd-ffos-ddu
Spring
Springs
Union & R.D. By.
Nant-y-fedwen-fawr
Nant-y-fedwen-fach
Ford
F.B.
Ton-y-ffildre
ROMAN ROAD (Track of)
Old Quarry
Old Coal Level
Old Quarries
Old Coal Pits
Rhôs-y-gelynen
Canal
Toncastell
Llwyn-pica
Tyn-Pyrddin
Bamben Works (Disused)
Old Coal Levels
Tafarn-y-bance
Coedcae
Stepping Stones
Old Quarry
Blaen-Nantcelliwen
Air Shaft
Level
Old Pit
Pant-y-ddraenen
Tir-bâch
Maesmarchog Colliery (Disused)
Tyn-yr-heol
Spring
Old Coal Pit
Old Pits
Old Quarries
Old Coal Pit
Spring
Bryn
Old Quarry
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Spring
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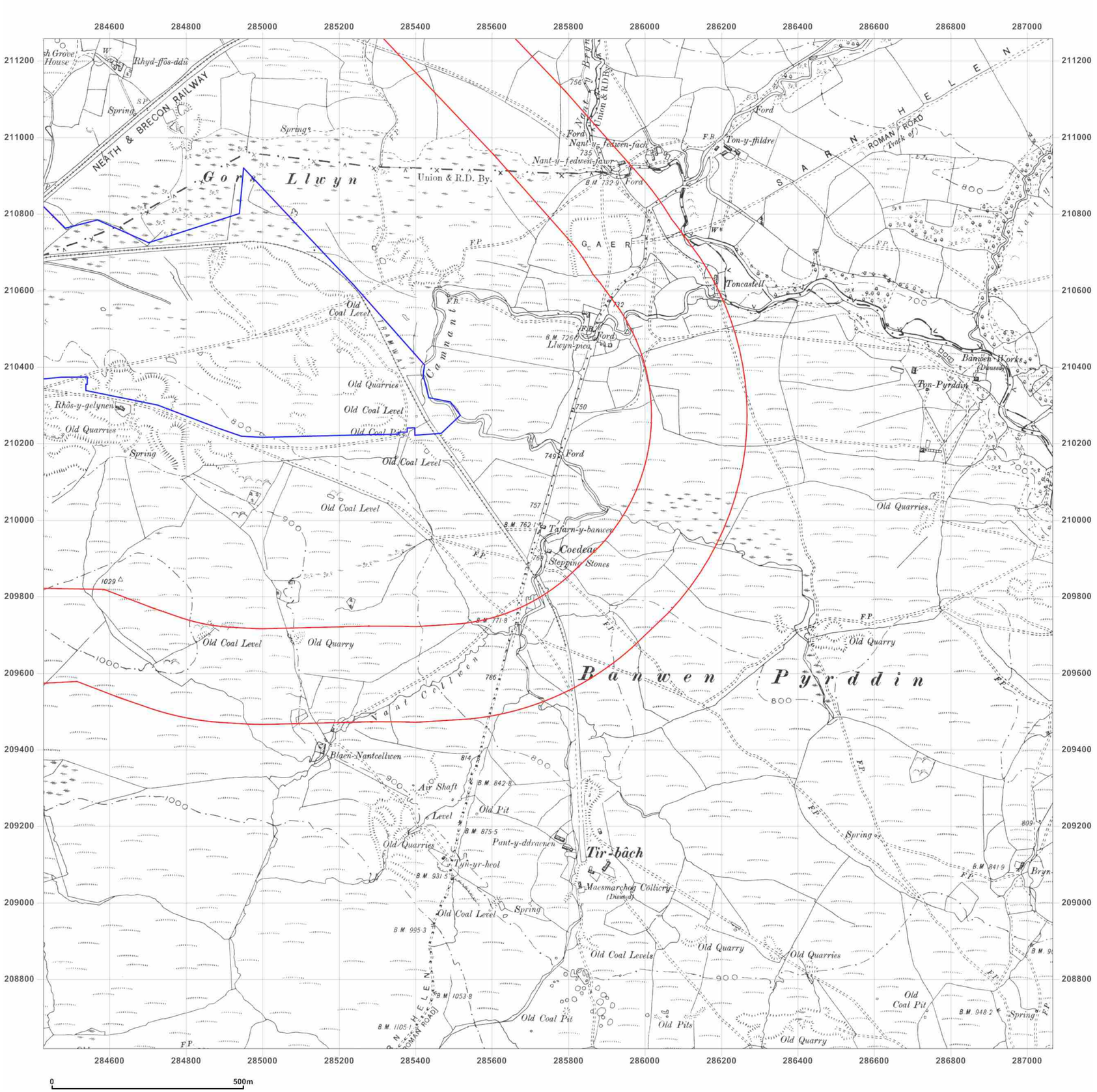

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: County Series

Map date: **1903**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 14 October 2019

Map legend available at:
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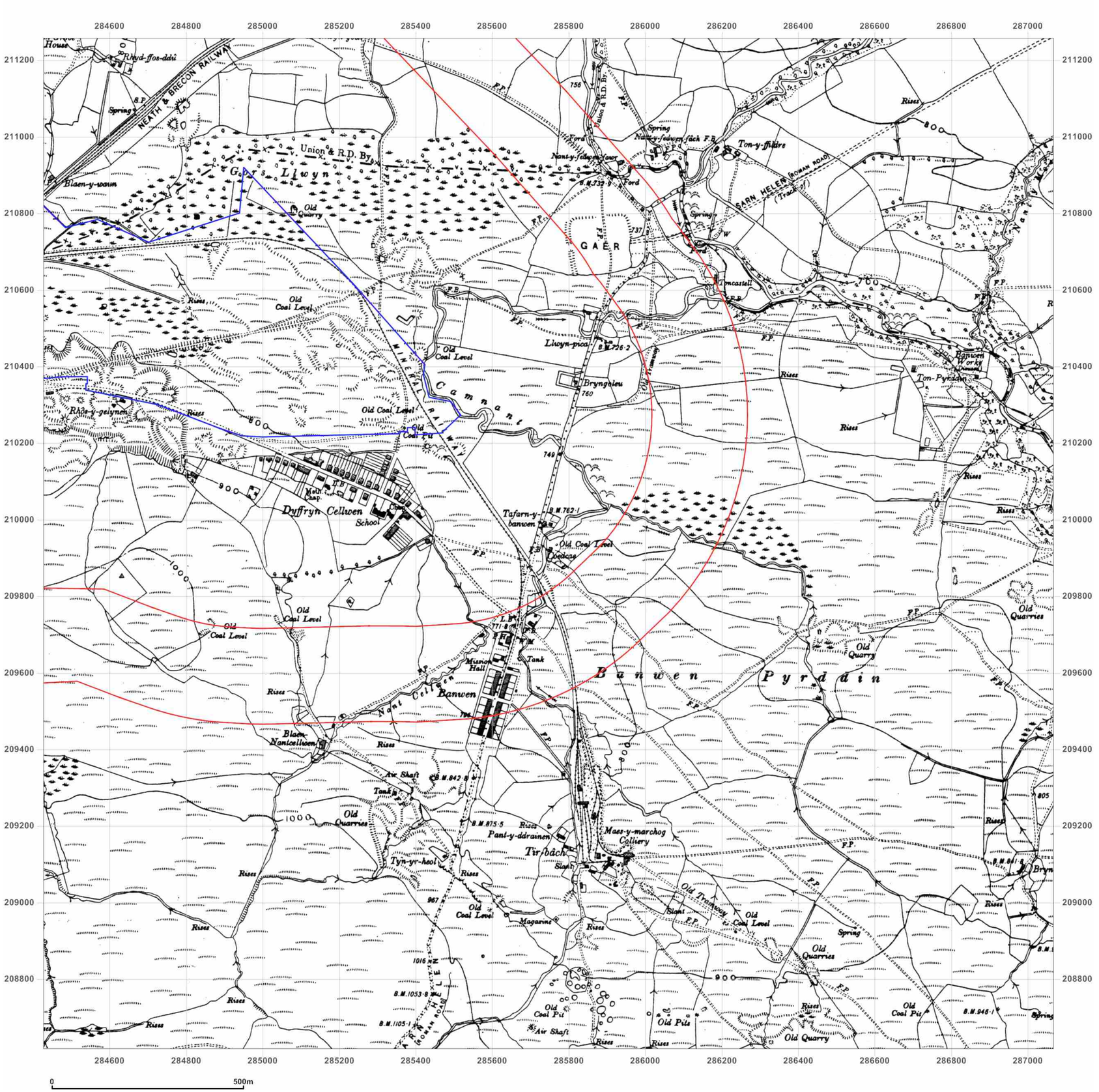
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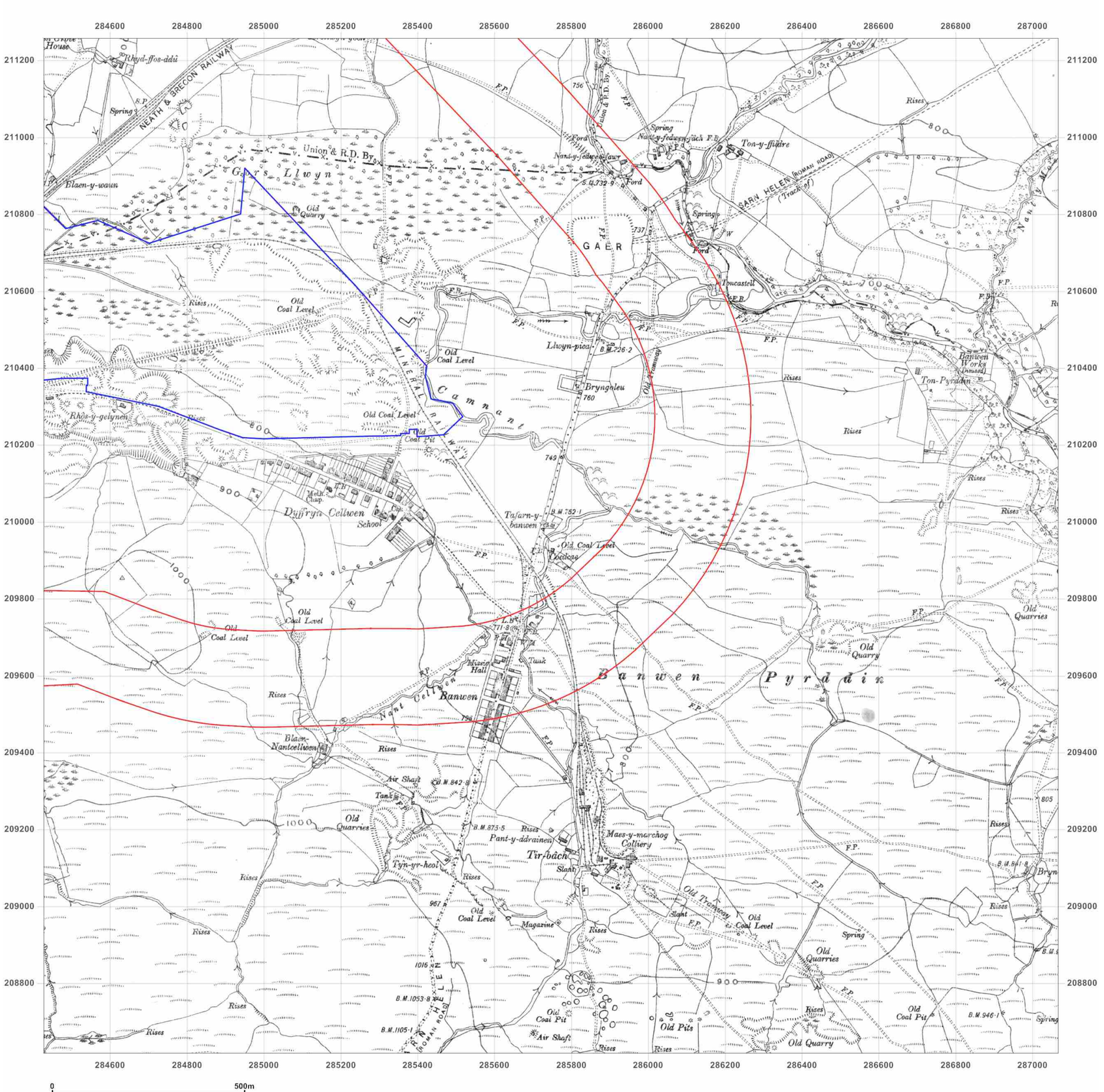
NEATH & BRECON RAILWAY
Union R.D. By
Llwyn
Gaer
GAER
Old Quarry
Old Coal Level
Old Coal Pit
MINERAL RAILWAY
Camnant
Dyffryn Cellwen
School
Mission Hall
Tank
Banwen
Banwen Pyrddin
Tyn-yr-heol
Pant-y-ddrainen
Tir-bach
Maes-y-marchog Colliery
Old Tramway
Old Pits
Old Quarries
Air Shaft
Slag
Spring
Ford
Rises
SARN HELEN (ROMAN ROAD)
(Track of)
Tomcastell
Ton-y-ffildre
Ton-Pyrddin
Brynglau
Llwyn-pica
Tafarn-y-banwen
Nant-y-felwen-fawr
Nant-y-felwen-fach F.B.
Rhyd-fos-ddu
Blaen-y-waun
Rhos-y-gelynen
Nant Cellwen
Blaen-Nantcellwen
Old Coal Pit
Old Pit
Old Coal Level
Old Quarries
Old Quarry
Old Coal Pit
Old Pits
Old Tramway
Old Coal Level
Old Quarries
Old Coal Pit
Old Quarry
Old Coal Pit
Old Quarries
Old Quarry
Old Coal Pit
Old Quarries
Old Quarry
Old Coal Pit
Old Quarries



Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1921
Revised N/A
Edition N/A
Copyright N/A
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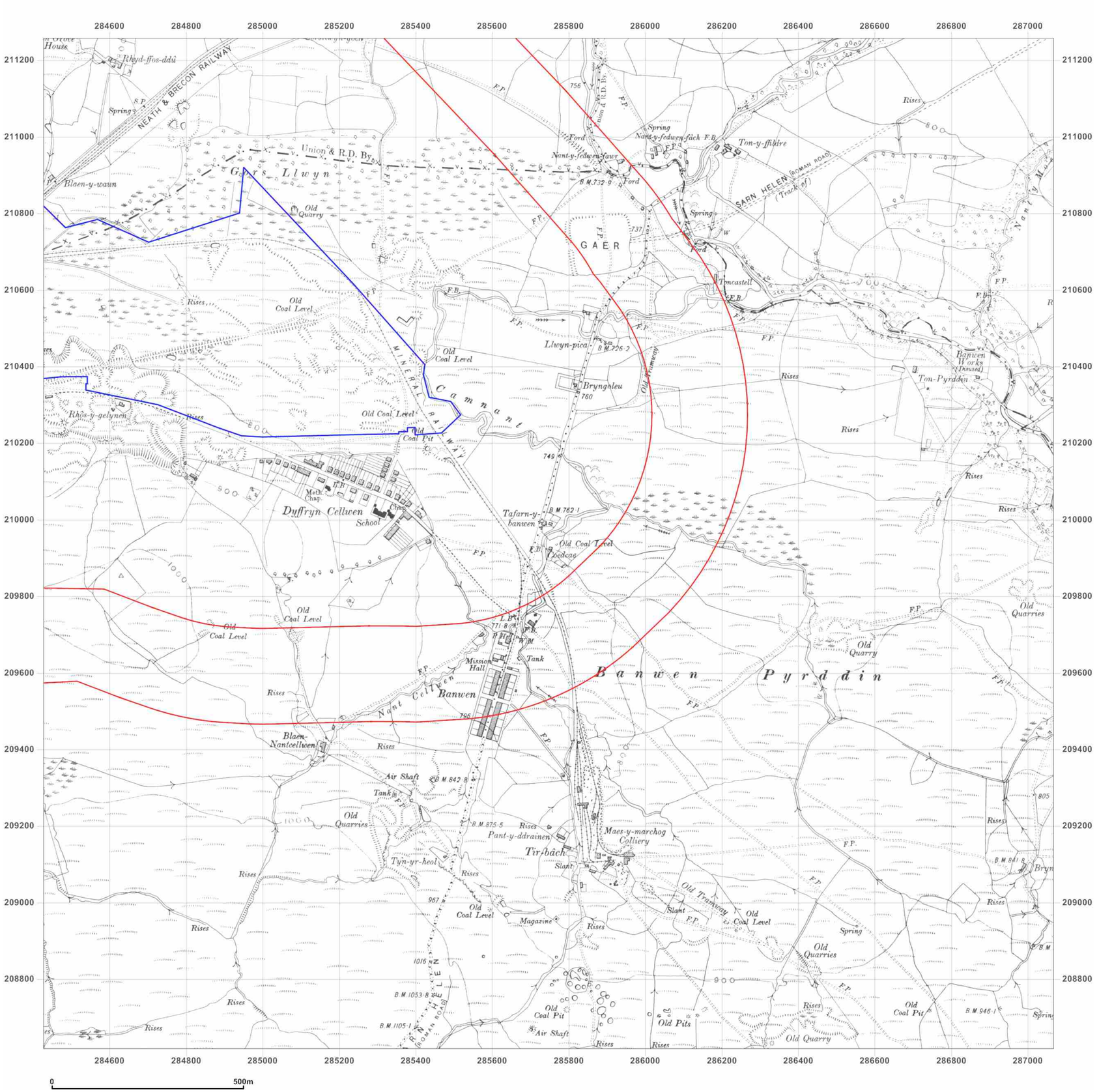
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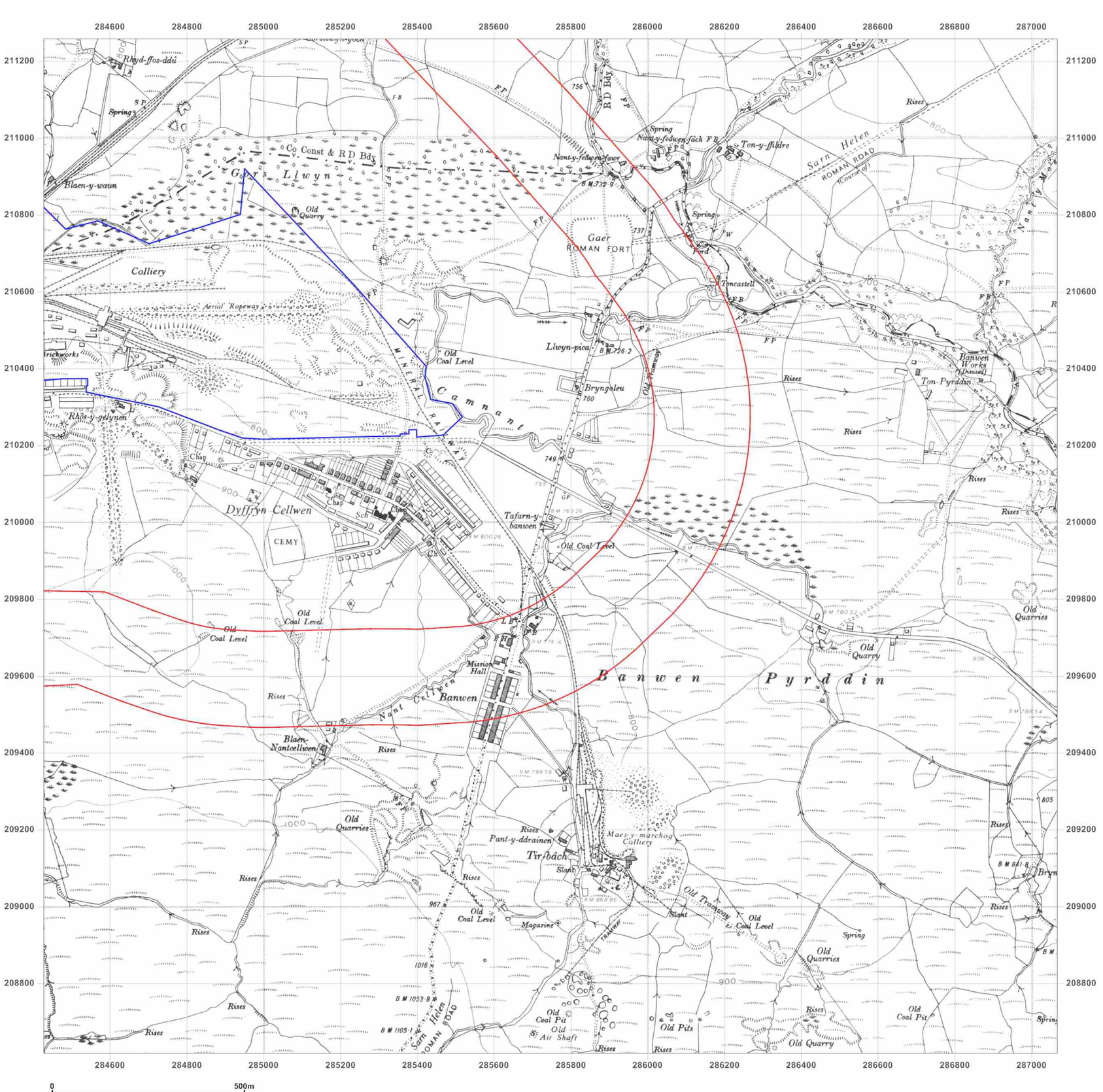
211200
211000
210800
210600
210400
210200
210000
209800
209600
209400
209200
209000
208800
NEATH & BRECON RAILWAY
Union & R.D. By.
Gas Llwyn
Blaen-y-waun
Old Quarry
Old Coal Level
Rises
Rhos-y-gelynen
Old Coal Level
Old Coal Pit
Dyffryn Cellwen
School
Old Coal Level
Old Coal Level
Old Coal Level
Old Coal Level
Old Quarries
Blaen-Nantcellwen
Air Shaft
Tank
Old Quarries
Tyn-yr-heol
Rises
Rises
Rises



Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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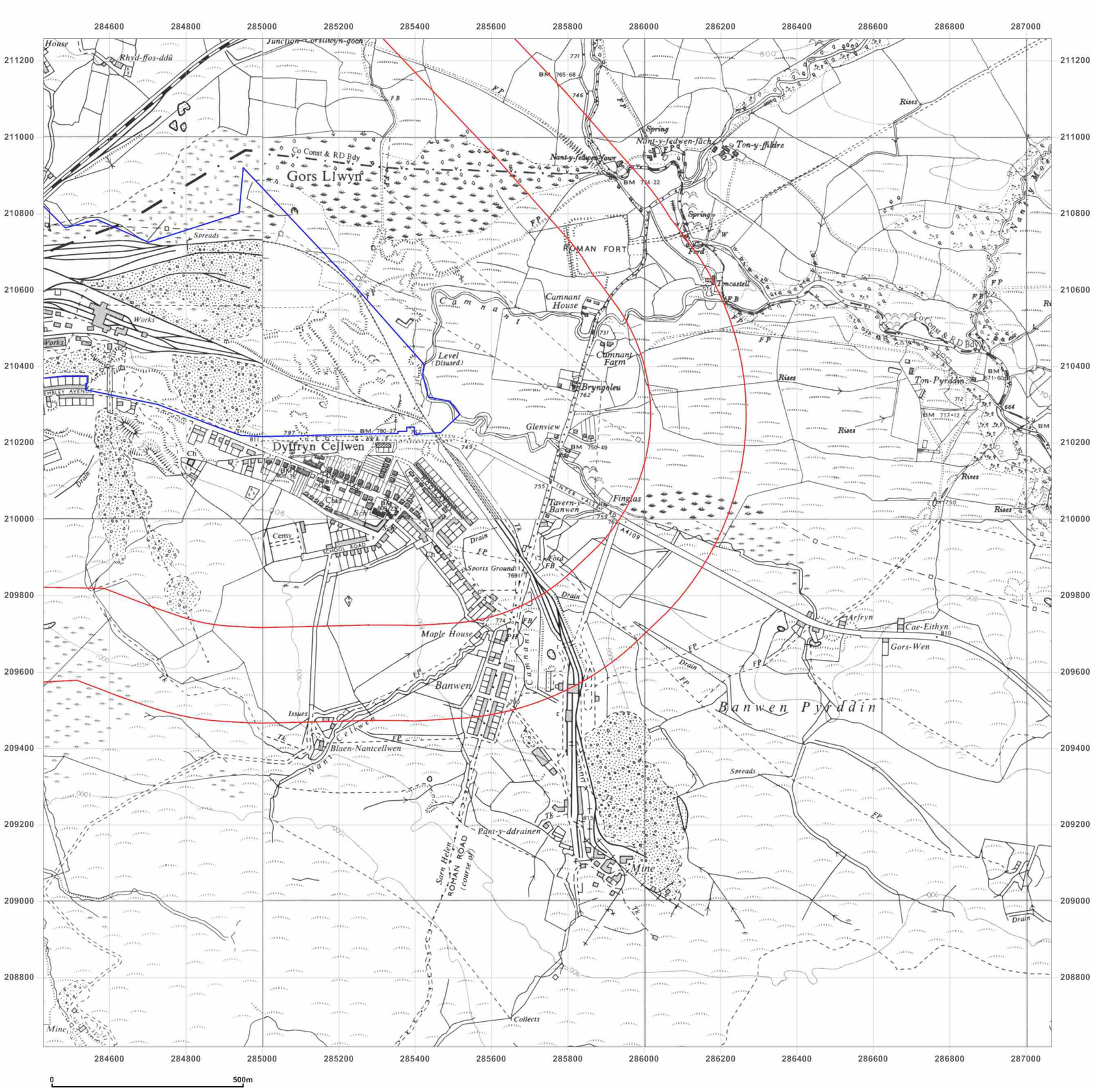

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: Provisional
Map date: **1962-1965**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1962
Revised 1962
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1964
Revised 1964
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1964
Revised 1964
Edition N/A
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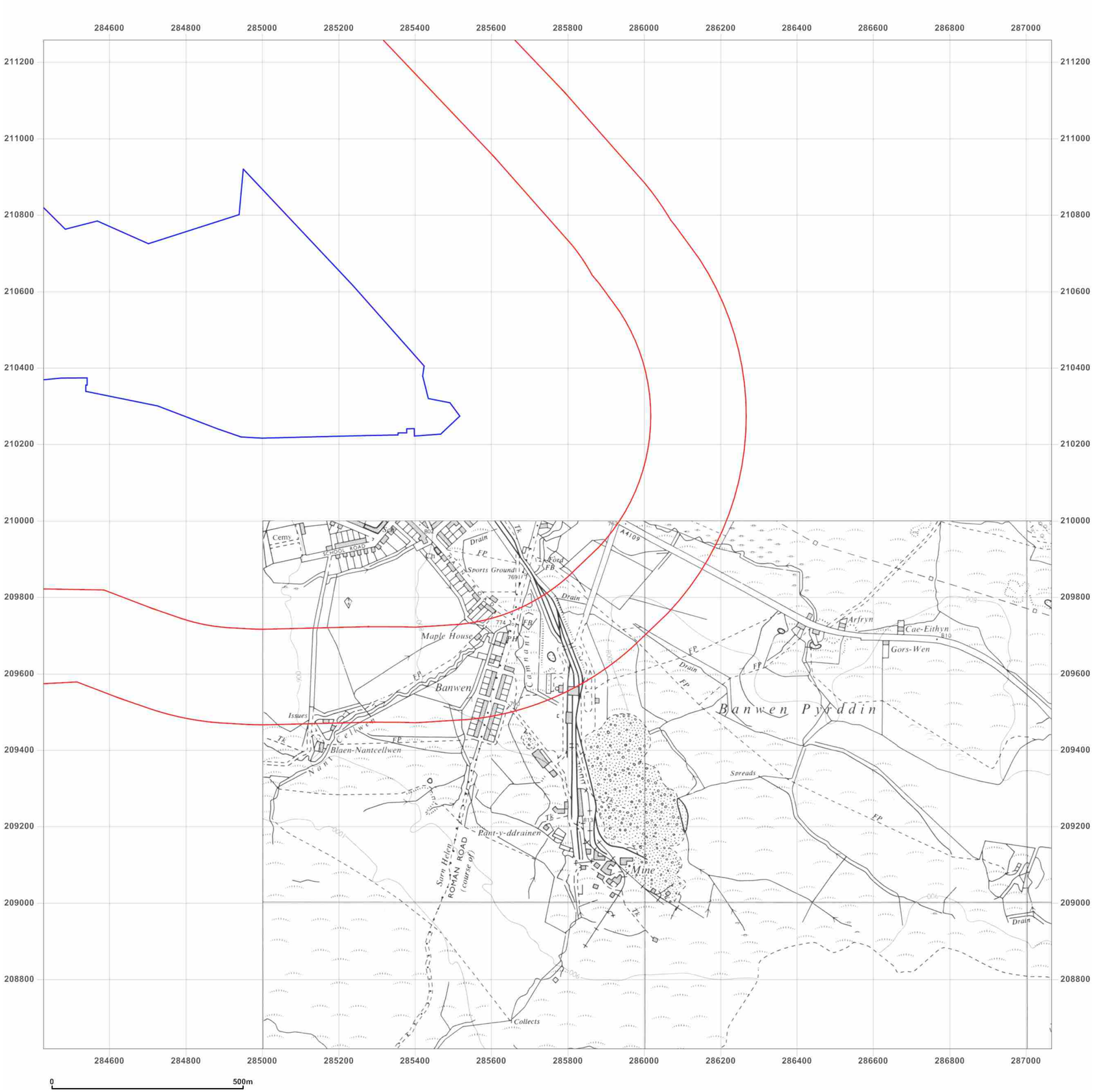

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: Provisional
Map date: **1980**
Scale: 1:10,560
Printed at: 1:10,560

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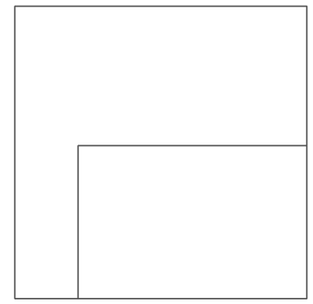

Surveyed 1980
Revised 1980
Edition N/A
Copyright N/A
Levelled N/A

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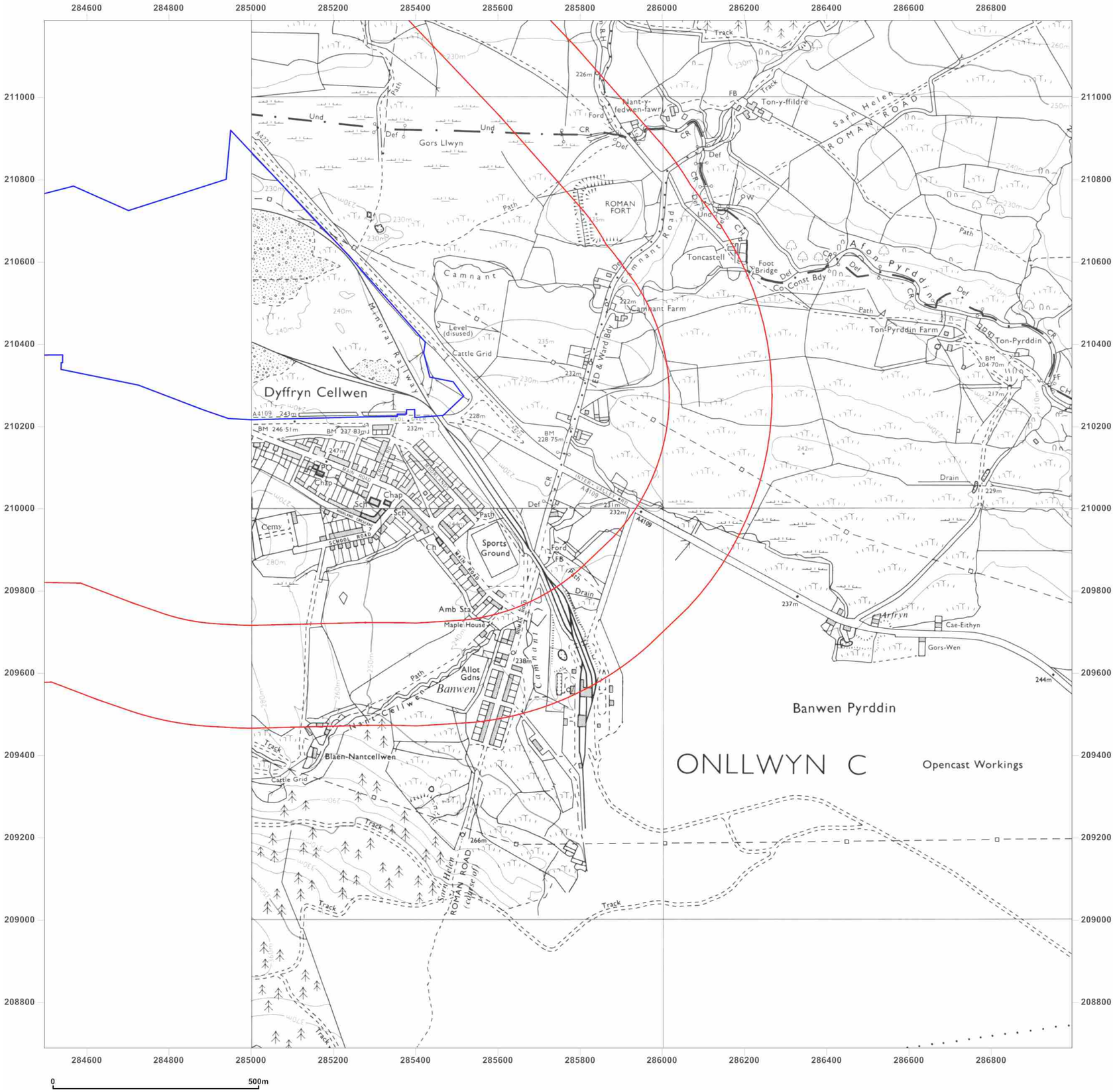

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: National Grid

Map date: **1979-1981**

Scale: 1:10,000

Printed at: 1:10,000

N
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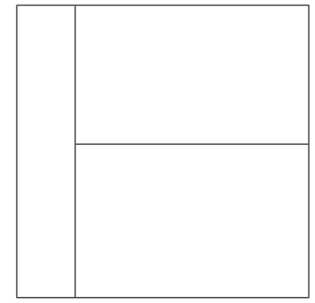
Surveyed 1977
Revised 1979
Edition N/A
Copyright 1979
Levelled 1977



Surveyed 1980
Revised 1981
Edition N/A
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Groundsure INSIGHTS

Site Details:

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211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
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2001

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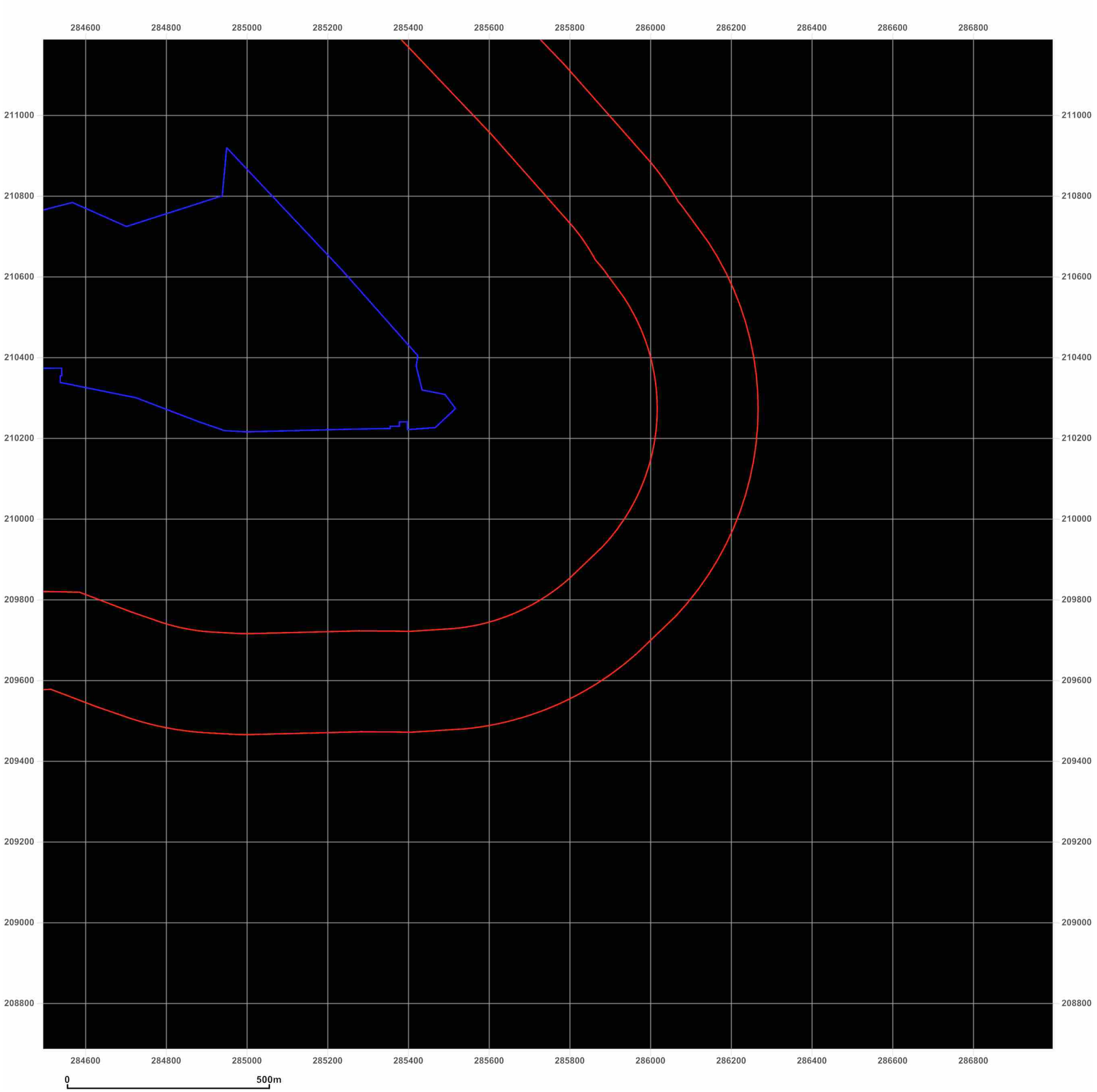

Groundsure INSIGHTS

Site Details:

282917.86237392283,
211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
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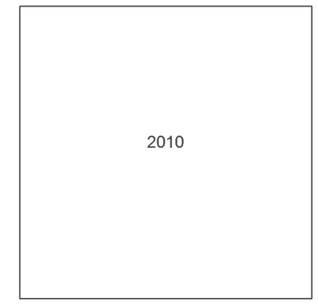

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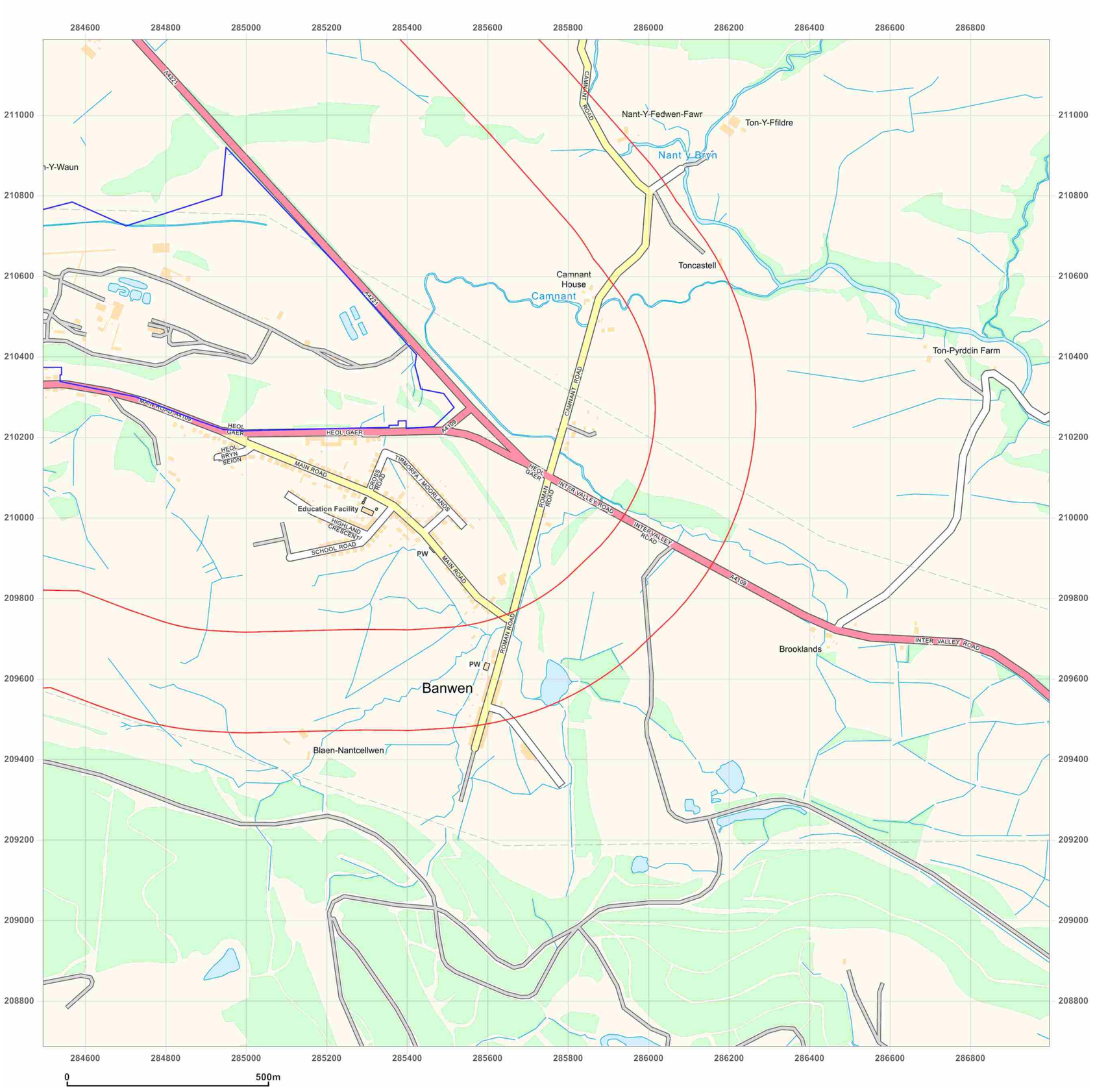

Groundsure INSIGHTS

Site Details:

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211100.677756288

Client Ref: GCORE
Report Ref: GS-6396071_SS_3_1
Grid Ref: 285746, 209937

Map Name: National Grid
Map date: **2019**
Scale: 1:10,000
Printed at: 1:10,000

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2019

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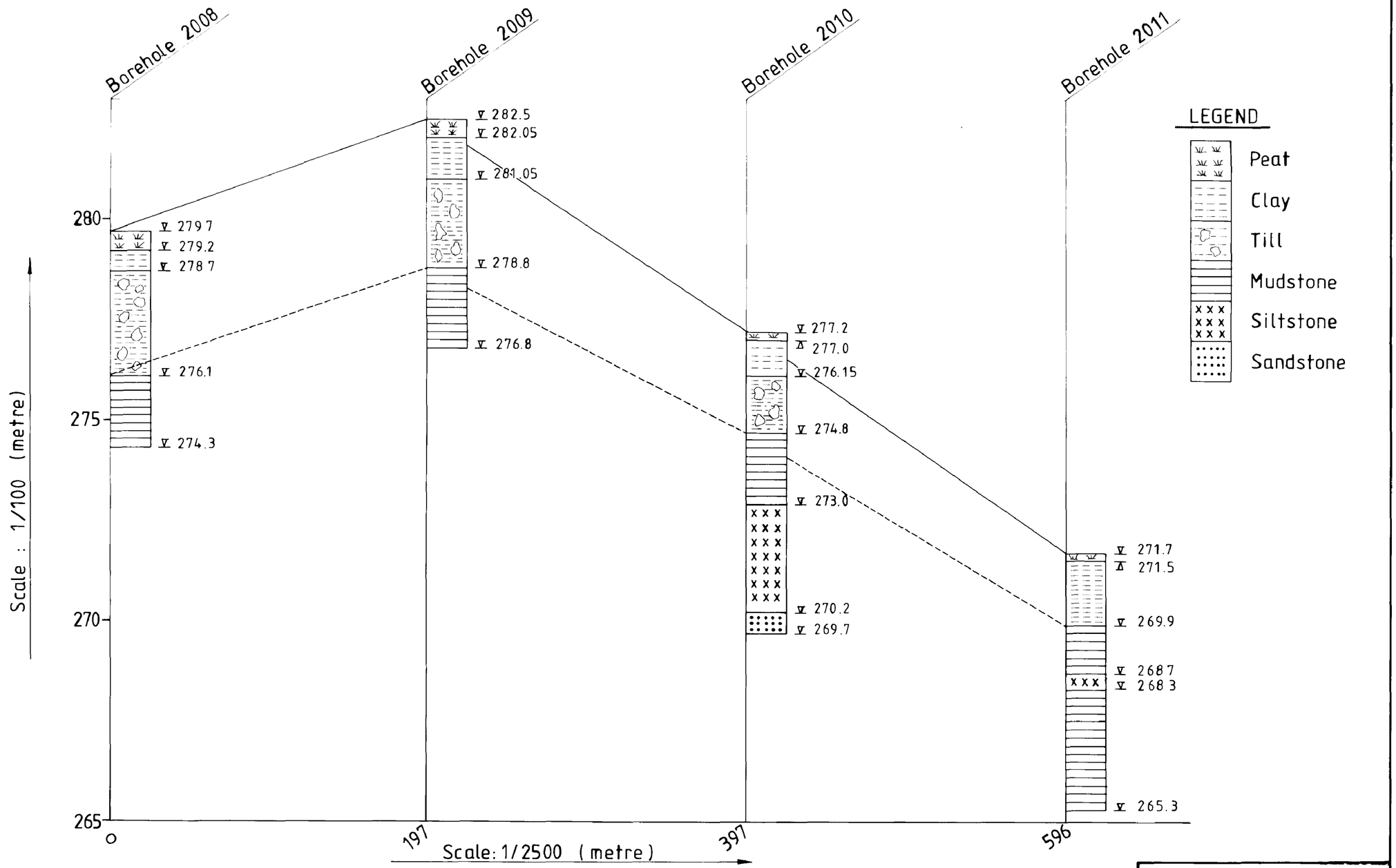
Appendix C

Nant Helen Geotechnical Borehole Records – Celtic Energy



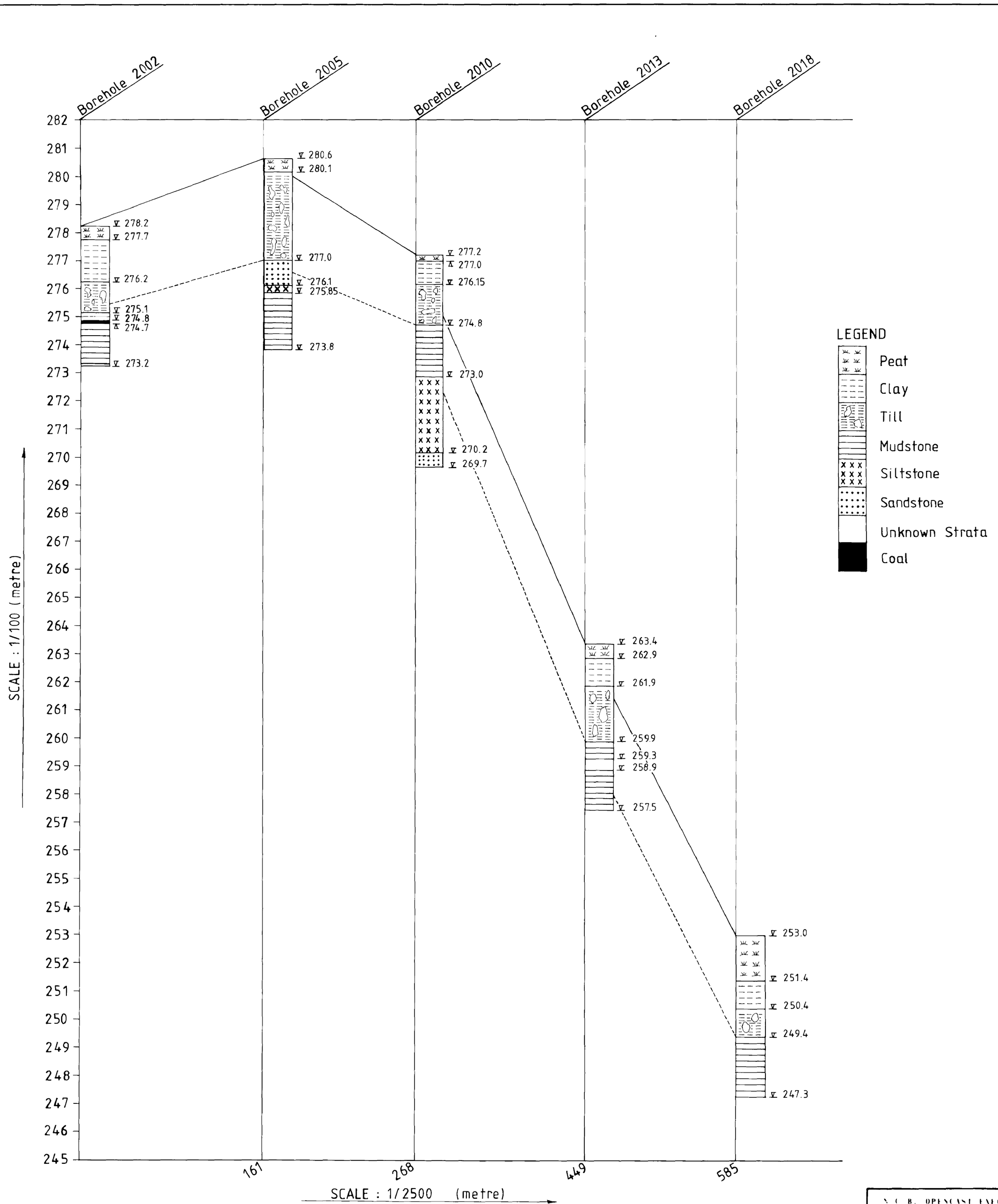
SECTION X-X'

N C B OPENCAST EXECUTIVE
Farm Road Aberaman Aberdare
Glam

SITE NAME NANT HELEN
SITE No 682
CONTRACT DRG No 117/1
SCALE AS SHOWN

CROWN COPYRIGHT RESERVED
Licence No NA 273082

DRAWING No. 07D010273
07A04104.DWG
(Scale 1:100)



SECTION Y-Y'

N. C. B. OPENCAST EXECUTIVE
Farm Road Aberaman Aberdare
Glam

SITE NAME NANT HELEN
SITE No 682
CONTRACT DRG No 117/2
SCALE AS SHOWN

CROWN COPYRIGHT RESERVED
Licence N° NA 273082

DRAWING No. 07D010274
07A04105.DWG
(Scale 1:100)

Appendix D

BGS Borehole Records

D1

Holst Soil Engineering Limited

Borehole No. L1

BOREHOLE LOG SN 81 SE 4

Contract No. F3593
Location Dyffryn Cellwen
Client Neath B.C.
Method of Boring Percussion
Diameter of Borehole 150mm
SN 8504 1019
Sheet 1 of 1
Chainage
Ground Level m.A.O.D.
Date 27.4.77

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
TOPSOIL		0.10					
MADEGROUND: Stiff grey/brown stony clay with sandstone cobbles		0.60			0.50		
MADEGROUND firm dark grey silty clay with coal fragments					1.30		
					3.00 S	7	
		3.90					
Stiff brown and grey mottled sandy CLAY with mudstone fragments					4.00		
					4.50 S	38	
		5.00					

Type of Sample

Is S.P.T. □ Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Remarks (Observations of Ground Water etc.)

groundwater struck at 1.50m depth
rising to 1.30m depth in 10 minutes
standing water level at 1.30m depth

Holst Soil Engineering Limited

Borehole No. **L2**

BOREHOLE LOG

SN 81 SE 5

Contract No. F3593
Location Dyffryn Cellwen
Client Neath B.C.
Method of Boring Percussion
Diameter of Borehole 150mm

SN 8519 1020

Sheet 1 of 1
Chainage
Ground Level m.A.O.D.
Date 28.4.77

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
TOPSOIL		0.20					
MADEGROUND - clay with coal, wood, stones		0.50			0.50		
MADEGROUND - firm brown & grey mottled silty clay with sandstone & coal fragments		1.50			1.60 No recovery		
MADEGROUND - stiff brown mottled silty clay with sandstone & coal fragments		2.60			2.90		
MADEGROUND - stiff dark grey shaly clay with coal fragments		3.00			3.50		
Very stiff brown grey shaly CLAY with large angular sandstone fragments		4.00			6	42	

Type of Sample

Is S.P.T. U Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Remarks (Observations of Ground Water etc.)
Borehole dry

Holst Soil Engineering Limited

Borehole No. **L3**

SN 81 SE 6

BOREHOLE LOG

Contract No. F3593
Location Dyffryn Cellwen
Client Neath B.C.
SN 8528 1020
Method of Boring Percussion
Diameter of Borehole 150mm

Sheet 1 of 1
Chainage
Ground Level m.A.O.D.
Date 28.4.77

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
TOPSOIL		0.10					
MADEGROUND - coal & clay		0.70			0.50		
MADEGROUND: Firm grey/brown sandy stony clay with mudstone fragments and disseminated coal particles					0.70 No recovery 1.15 S	13	
		2.50					
Stiff grey/brown sandy stony CLAY with mudstone and large sandstone fragments					2.65		
		4.00			3.50 S	42	

Type of Sample

Is S.P.T. U Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Remarks (Observations of Ground Water etc.)

Water struck at 3.00m depth, casing depth 1.50m
Standing water level at 1.60m depth

Norwest Holst Soil Engineering Ltd.

Borehole No. 2

Contract No. F8368

BOREHOLE LOG

Location Onllwyn SN81SW 30

Sheet 1 of 3

Client British Coal

Co-ords 284787.75E 210602.00N

Method of Boring Percussion, rotary air flush & rotary open hole

Ground Level 236.48 m.A.O.D.

Diameter of Borehole 150mm and 105mm

Date 13/2-14/2/89-21/2-23/2/89

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
MADE GROUND: Loose to medium dense black sand and gravel mudstone with coal in a black silty clay matrix (colliery waste)					0.50-0.95 s	"7"	
					2.00-2.95 s	"14"	
					3.50-3.95 s	"8"	
MADE GROUND: Soft grey brown mottled orange and black silty clay with much gravel of weathered sandstone and mudstone					5.00-5.45 s	"19"	
Grey highly to completely weathered silty MUDSTONE very weak laminated and micaceous		6.00	230.48		6.00 (48)		
Dark grey IRONSTONE with some SILSTONE		7.00	229.48		7.50 (58)		
Light grey slightly to moderately weathered fine SANDSTONE, strong massive to occasionally cross laminated		8.05	228.43				
Grey and light grey interlaminated moderately weathered silty MUDSTONE and sandy SILTSTONE, modeately weak occasional grey sandstone band		8.65	227.83		8.65-8.68 C	*25" blows* for 25mm	
...8.90-9.00 Highly fractured medium to coarse gravel size		8.90	227.58		TCR 100% SCR 58%	0%	
		9.60	226.88				

() U100 blows *seating blows only

13/2/89 Borehole dry during drilling
14/2/89 Borehole dry during drilling
21/2/89 initial standing water level 3.45m, casing at 8.60m
Final standing water level 7.60m, casing at 8.60m

Type of Sample

Is S.P.T. ■ Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Norwest Holst Soil Engineering Ltd.

Borehole No. **2**

BOREHOLE LOG

Contract No. F8368
Location. Onllwyn
Client. British Coal
SN81SW 30
Sheet 2 of 3
Co-ords 284787.75E 210602.00N
Method of Boring. Percussion & rotary air flush rotary open hole
Diameter of Borehole. 150mm & 105mm
Ground Level 236.48 m.A.O.D.
Date 13/2-14/2 21/2-23/2/89

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
Grey moderately weathered silty to very silty MUDSTONE, moderately weak Jointed at 60°		11.00	225.48		10.10 TCR SCR 100% 81%	0%	
Dark grey slightly weathered silty SANDSTONE, weak. Thin sub horizontal laminations		11.95	224.53		11.95		
Dark grey slightly weathered very slightly silty MUDSTONE moderately weak to weak laminated. Becoming very carbonaceous with depth ...11.95 to 12.70m often fragmented ...13.93 to 14.20m occasional very weak shaly mudstone bands					100% 49%	0%	
(Boundary planar) Vitreous COAL. Evidence of slickensided joint surfaces. ... 14.70-14.72m; Very thin sub-horizontal bed of very dark grey slightly weathered very carbonaceous silty MUDSTONE, weak		14.20 15.03	222.28 221.45		14.35		
Dark grey to grey slightly weathered silty MUDSTONE, moderately weak many carbonaceous plant remains (seatearath)		16.08	220.40		86% 63%	36%	
Light grey slightly weathered clayey SILTSTONE moderately weak with occasional bands of thinly laminated silty mudstone ...micaceous from 19.25m					16.45 94% 53% 18.00	26%	
Light to dark grey slightly weathered fine and medium SANDSTONE, strong massive with occasional cross bedding occasional joints at 75°		19.70	216.78		100% 77% 19.25 98% 74%	44% 74%	

Type of Sample

Is S.P.T. ■ Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Remarks (Observations of Ground Water etc.)

22/2/89 Initial standing water level 5.00m, casing at 8.60m
Final standing water level 7.20m, casing at 8.60m
23/2/89 initial standing water level 6.45m, casing at 8.60m
Final standing water level 6.20m, casing at 8.60m

Norwest Holst Soil Engineering Ltd.

Borehole No. **2**

BOREHOLE LOG

Contract No. F8368
Location Onllwyn
Client British Coal
SN81SW 30
Sheet 3 of 3
Co-ords 284787.75E 210602.00N
Method of Boring Percussion & rotary air flush, rotary open hole
Ground Level 236.48 m.A.O.D.
Diameter of Borehole 150mm & 105mm
Date 13/2-14/2 21/2-23/2/89

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
Light to dark grey slightly weathered fine and medium SANDSTONE strong massive with occasional cross bedding occasional joints at 75°					TCR SCR 20.80		
		21.65	214.83		100% 78%	78%	
Grey slightly weathered silty fine SANDSTONE moderately weak thin sub horizontal laminations very occasional plant remains occasional sub vertical joints		22.30	214.18		22.50		
Dark grey/black slightly weahtered slightly silty MUDSTONE, moderately to very weak. Often highly fragmented often highly carbonaceous with occasional plant traces Occasional slickenside on joint surfaces					95% 27%	9%	
		25.00	211.48		25.00		
Open hole from 25.00m Dark grey MUDSTONE							
Borehole complete at 30.00m		30.00	206.48				

Type of Sample

Is	S.P.T.	■	Undisturbed
Ic.	C.P.T.	×	Vane
O	Jar	Δ	Water
●	Bulk		Piezometer

Remarks (Observations of Ground Water etc.)

Norwest Holst Soil Engineering Ltd.

Borehole No. 8

BOREHOLE LOG

Contract No. F8368
Location Onllwyn
Client British Coal
Method of Boring Percussion rotary air flush rotary open hole
Diameter of Borehole 150mm & 105mm
SN81SW 36
Sheet 1 of 3
Co-ords 284862.94E 210586.15N
Ground Level 237.20 m.A.O.D.
Date 16/2/89&26/2/89

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
MADE GROUND: Medium dense black sand and gravel of carbonaceous silty mudstone and coal with occasional black silty clay matrix (colliery waste)					0.50-0.95 s	"11"	
					2.00-2.45 s	"10"	
		3.20	234.00				
Firm brown organic CLAY with many rootlets and some peat		3.40	233.80		3.50 (33)		
Firm to stiff grey brown mottled orange and black silty sandy CLAY with much gravel and occsional cobble of sandstone and mudstone occasional coal fragments					5.00 (42)		
		5.80	231.40				
Firm grey brown silty clay with mudstone fragments					6.50 (103)		
		6.70	230.50				
Grey brown highly weathered silty micaceous MUDSTONE weak laminated and fragmented some iron staining		7.20	230.00				
Grey moderately to slightly weathered SILTSTONE moderately weak laminated subhorizontal to massive iron staining on 45° joint planes					7.50 TCR SCR 90% 20%	0%	
Grey moderately weathered slightly silty MUDSTONE weak often highly fragmented		9.00	228.20		9.00 100% 15%	0%	

Type of Sample

ls S.P.T. ■ Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk Piezometer

Remarks (Observations of Ground Water etc.) () U100 blows

16/2/89 Seepage of water at 3.20m casing at 3.00m no rise
Water sealed at 3.40m
26/2/89 Initial standing water level 6.40m casing at 7.50m
Final standing water level 3.50m casing at 7.50m

Norwest Holst Soil Engineering Ltd.

Borehole No. 8

BOREHOLE LOG

Contract No. F8368
Location Onllwyn
Client British Coal
SN81SW 36
Sheet 2 of 3
Co-ords 284862.94E 210586.15N
Method of Boring Percussion rotary sir flush rotary open hole
Diameter of Borehole 150mm & 105mm
Ground Level 237.20 m.A.O.D.
Date 16/2/89 & 26/2/89

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
Grey moderately weathered slightly silty MUDSTONE weak often highly fractured ...below 10.20m becomes dark grey & carbonaceous					TCR SCR 10.50		
(Boundary Planar) COAL with 45-60° slickensided joint surfaces 11.90-11.94m; Very thin subhorizontal bed of very dark grey slightly weathered very carbonaceous silty MUDSTONE, weak		11.59 12.40	225.61 224.80		92% 62%	23%	
Grey slightly weathered silty MUDSTONE moderately weak massive many carbonaceous plant remains		13.00	224.20		13.00 Open hole drilling		
Grey slightly weathered SANDSTONE & MUDSTONE		18.00	219.20				
Dark grey slightly weathered SILTSTONE							

Type of Sample
Is S.P.T. ■ Undisturbed
Ic. C.P.T. × Vane
O Jar Δ Water
● Bulk ◧ Piezometer

Remarks (Observations of Ground Water etc.) ( ) U100 blows
16/2/89 Seepage of water at 3.20m, casing at 3.00m no rise
Water sealed at 3.40m
26/2/89 Initial standing water level 6.40m, casing at 7.50m
Final standing water level 3.50m, casing at 7.50m

Norwest Holst Soil Engineering Ltd.

Borehole No. 8

Contract No. F8368 **BOREHOLE LOG**

Location. Onllwyn SN81SW 36

Sheet 3 of 3

Client. British Coal Co-ords 284862.94E 210586.15N

Method of Boring. Percusssion, rotary air flush rotary open hole Ground Level 237.20 m.A.O.D.

Diameter of Borehole. ~~150mm & 105mm~~ Date. 16/2/89 & 26/2/89

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
Dark grey slightly weathered SILTSTONE							
Borehole complete at 23.00m		23.00	214.20				

Type of Sample

Is S.P.T. ■ Undisturbed

Ic. C.P.T. × Vane

O Jar Δ Water

● Bulk Piezometer

Remarks (Observations of Ground Water etc.) ( ) U100 blows

16/2/89 Seepage of water at 3.20m, casing at 3.00m no rise
Water sealed at 3.40m

26/2/89 Initial standing water level 6.40m casing at 7.50m
Final standing water level 3.50m casing at 7.50m

SN81SW 37

Norwest Holst Soil Engineering Ltd.

Trial Pit No. **1**

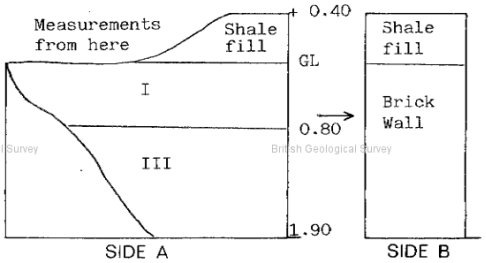
TRIAL PIT LOG

8400 1043

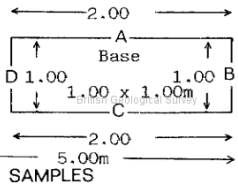
Contract No. F9074
Location Nant Helen O.C.C.S.
Client British Coal
Excavation Plant 180° excavator
Dimensions (l x b x h) 2.00 x 1.00 x 1.90m

Chainage .....
Ground Level ..... m.A.O.D.
Date 4/2/91

ELEVATIONS:—

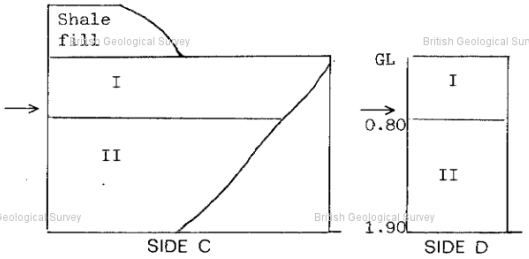


PLAN (Not to scale)



SAMPLES

No. & Type	Depth m.
	None taken



No.	Depth m.	STRATA DESCRIPTION	Cv/Cp kN/m²
I	0.00–0.80	Firm orange silty sandy CLAY with some fine and medium angular mudstone gravel, and occasional coarse gravel and cobbles of sandstone.	
II	0.80–1.90	Highly weathered grey and orange laminated MUDSTONE, very weak. Generally recovered as angular gravel size fragments in clay matrix.	
		Trial Pit complete at 1.90m depth	
		Note: Ground level taken at a point 0.35m below adjacent rail.	

NOTES Cv/Cp Approximate value of undrained shear strength from hand vane/penetrometer
Groundwater: Slight seepage from 1.00m, in mudstone
Pumping: None
Supports/Stability: Unsupported/stable

SN81SW 38

Norwest Holst Soil Engineering Ltd.

Trial Pit No. **2**

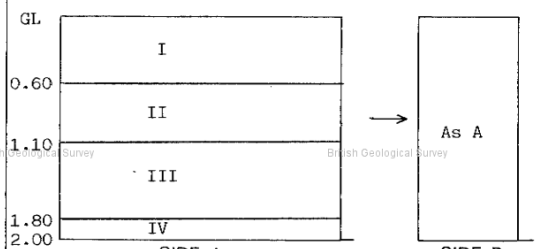
8403 1044

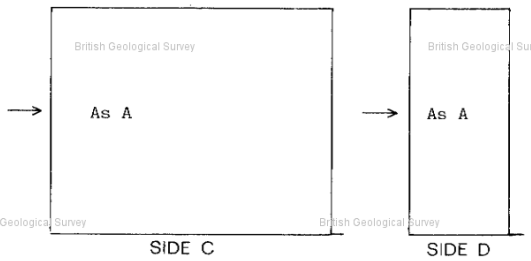
TRIAL PIT LOG

Contract No. F9074
Location Nant Helen O.C.C.S
Client British Coal
Excavation Plant 180° excavator
Dimensions (l x b x h) 2.00 x 1.00 x 2.00m

Chainage .....
Ground Level ..... m.A.O.D.
Date 4/2/91

ELEVATIONS:—





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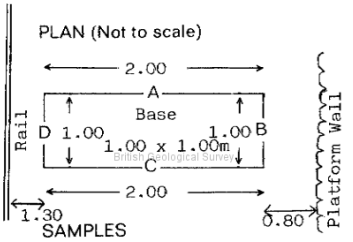


SAMPLES

No. & Type	Depth m.	
B	0.60 - 1.10	(II)
B	0.60 - 1.10	(II)

No.	Depth m.	STRATA DESCRIPTION	Cv/Cp kN/m²
I	0.00–0.60	MADE GROUND: Grey shale and coal fragments with occasional brick and clinker.	
II	0.60–1.10	Firm grey and orange silty sandy CLAY, with occasional fine gravel.	
III	1.10 1.80	Dark grey completely weathered MUDSTONE, recovered as clay with very occasional very weak mudstone lithorelicts.	
IV	1.80–2.00	Highly weathered grey and orange laminated MUDSTONE, very weak. Generally recovered as angular gravel size fragments in clay matrix.	
		Note: Ground level taken at a point 0.40m below adjacent rail.	
		Trial Pit complete at 2.00m depth.	

NOTES Cv/Cp Approximate value of undrained shear strength from hand vane/penetrometer
Groundwater: Dry
Pumping: None
Supports/Stability: None/Stable

SN81SW 39

Norwest Holst Soil Engineering Ltd.

8405 1046

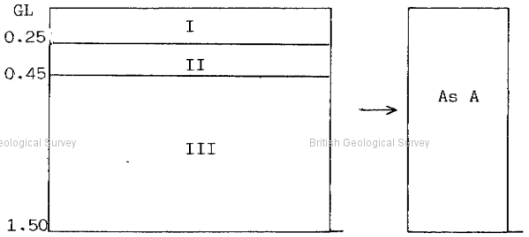
Trial Pit No. **3**

TRIAL PIT LOG

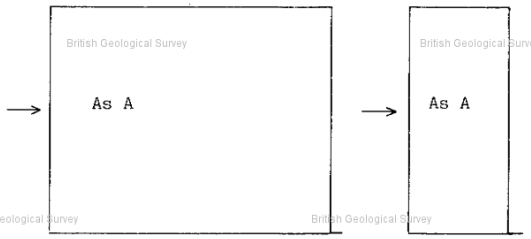
Contract No. F9074
Location Nant Helen O.C.C.S
Client British Coal
Excavation Plant 180° excavator
Dimensions (l x b x h) 1.50 x 1.00 x 1.50m

Chainage .....
Ground Level ..... m.A.O.D.
Date 4/2/91

ELEVATIONS:—

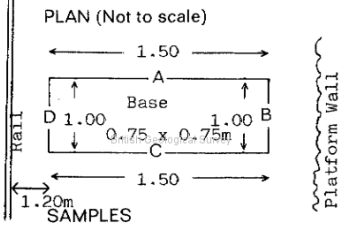


SIDE A SIDE B



SIDE C SIDE D

PLAN (Not to scale)



SAMPLES

No. & Type	Depth m.
	None
	Taken

No.	Depth m.	STRATA DESCRIPTION	Cv/Cp kN/m²
I	0.00–0.25	MADE GROUND: Grey shale fragments with occasional gravel.	
II	0.25–0.45	Stiff orange and grey silty sandy CLAY with occasional fine sandstone gravel and occasional boulder.	
III	0.45–1.50	Grey and orange highly weathered laminated MUDSTONE, very weak. Recovered as gravel size fragments.	
		Trial Pit complete at 1.50m depth	
		Note: Ground level taken at a point 0.40m below adjacent rail.	

NOTES Cv/Cp Approximate value of undrained shear strength from hand vane/penetrometer
Groundwater: Dry
Pumping: None
Supports/Stability: None/Stable

Appendix E

Groundsure EnviroInsight and GeoInsight Reports

Ove Arup & Partners International Ltd

4 OVE ARUP & PARTNERS, PIERHEAD STREET, CARDIFF, CF10 4QP

Groundsure Reference:	GS-6396069
Your Reference:	GCORE
Report Date	14 Oct 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: 282917.86237392283, 211100.677756288,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**282917.86237392283, 211100.677756288,**
Date:	**14 Oct 2019**
Reference:	**GS-6396069**
Client:	**Ove Arup & Partners International Ltd**

NW N NE

W E

SW S SE



Aerial Photograph Capture date:	26-May-2017
Grid Reference:	283073,211130
Site Size:	483.2560ha

Report Reference: GS-6396069
Client Reference: GCORE

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	912	160	372	394
1.2 Additional Information – Historical Tank Database	20	1	1	12
1.3 Additional Information – Historical Energy Features Database	2	4	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	848	169	378	357

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	1	0	0	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	3	0	1	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	21	1	16	12
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	2	2	4	0
2.3.2 National Incidents Recording System, List 1	0	0	0	1
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	1	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	2	0	0	7	2	5
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	1	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	7

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	26	8	9	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	Identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	8	8
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	2	1	1	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	Yes	No	No	No	Yes	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	358	40	238	288	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	High
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	High

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	1	1	0	1	3
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	7	0	5	16	39	103
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	1	0	0	3
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	High
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Very Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Moderate
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	High
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	Identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

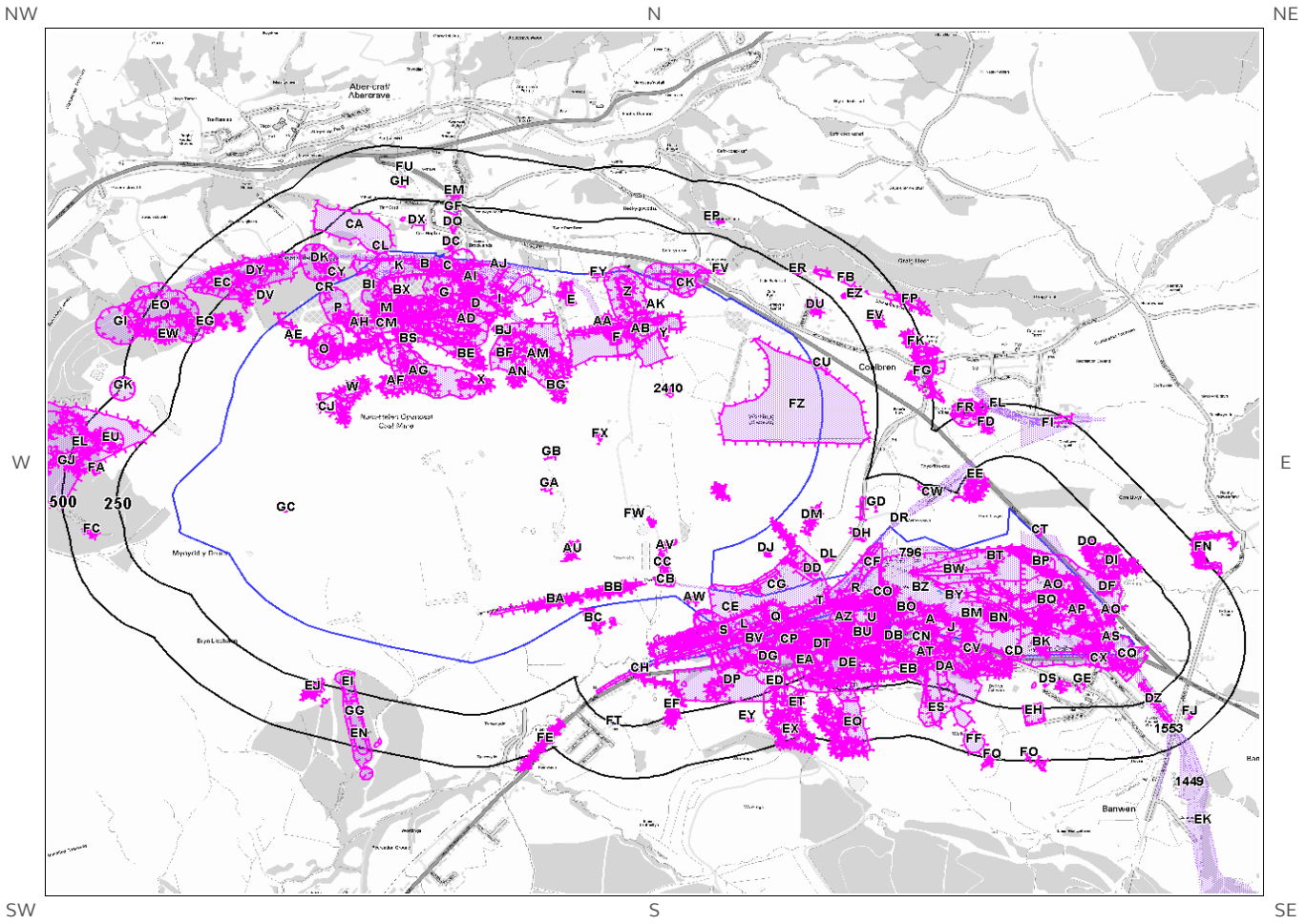
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 1838

ID	Distance [m]	Direction	Use	Date
1AR	0	On Site	Unspecified Ground Workings	1921
2AS	0	On Site	Old Coal Level	1921
3AQ	0	On Site	Unspecified Ground Workings	1921
4J	0	On Site	Unspecified Heap	1921
5BO	0	On Site	Unspecified Ground Workings	1921
6AI	0	On Site	Coal Drift	1877
7A	0	On Site	Unspecified Ground Workings	1921
8A	0	On Site	Cuttings	1921
9BM	0	On Site	Unspecified Pit	1921
10BR	0	On Site	Unspecified Ground Workings	1921
11AO	0	On Site	Unspecified Pit	1921
12AP	0	On Site	Unspecified Ground Workings	1921
13AT	0	On Site	Unspecified Ground Workings	1921
14P	0	On Site	Unspecified Ground Workings	1921
15M	0	On Site	Unspecified Pit	1948
16C	0	On Site	Sewage and Water Purification Works	1921
17B	0	On Site	Unspecified Heap	1921
18B	0	On Site	Railway Station	1921
19C	0	On Site	Unspecified Drift	1921
20D	0	On Site	Unspecified Old Level	1921
21D	0	On Site	Unspecified Drift	1921
22I	0	On Site	Refuse Heap	1921
23D	0	On Site	Unspecified Heap	1921
24H	0	On Site	Unspecified Ground Workings	1921
25AJ	0	On Site	Engine House	1921
26E	0	On Site	Unspecified Drift	1921
27E	0	On Site	Refuse Heap	1921
28F	0	On Site	Old Coal Levels	1921

29F	0	On Site	Old Coal Levels	1921
30F	0	On Site	Unspecified Heap	1921
31F	0	On Site	Unspecified Ground Workings	1921
32AK	0	On Site	Tramway Sidings	1921
33Z	0	On Site	Unspecified Ground Workings	1921
34AA	0	On Site	Unspecified Ground Workings	1921
35Y	0	On Site	Coal Trial Shaft	1921
36AB	0	On Site	Colliery	1921
37K	0	On Site	Colliery	1921
38G	0	On Site	Unspecified Old Levels	1921
39G	0	On Site	Unspecified Ground Workings	1921
40D	0	On Site	Unspecified Ground Workings	1921
41H	0	On Site	Refuse Heap	1921
42G	0	On Site	Unspecified Ground Workings	1921
43G	0	On Site	Unspecified Old Levels	1921
44I	0	On Site	Colliery	1921
45CK	0	On Site	Unspecified Drift	1948
46L	0	On Site	Unspecified Disused Mine	1965
47R	0	On Site	Railway Sidings	1921
48U	0	On Site	Unspecified Ground Workings	1921
49J	0	On Site	Unspecified Ground Workings	1921
50K	0	On Site	Engine House	1921
51AZ	0	On Site	Unspecified Drift	1948
52L	0	On Site	Unspecified Disused Mine	1987
53H	0	On Site	Tramway Sidings	1921
54C	0	On Site	Unspecified Heap	1921
55K	0	On Site	Railway Sidings	1921
56M	0	On Site	Unspecified Old Level	1921
57M	0	On Site	Unspecified Ground Workings	1921
58M	0	On Site	Unspecified Ground Workings	1921
59N	0	On Site	Unspecified Ground Workings	1921
60AD	0	On Site	Unspecified Heaps	1921
61N	0	On Site	Unspecified Ground Workings	1921
62AM	0	On Site	Unspecified Ground Workings	1921
63AN	0	On Site	Unspecified Ground Workings	1921
64X	0	On Site	Unspecified Ground Workings	1921

65O	0	On Site	Old Coal Levels	1921
66O	0	On Site	Old Coal Levels	1921
67P	0	On Site	Unspecified Ground Workings	1921
68AL	0	On Site	Unspecified Ground Workings	1921
69AE	0	On Site	Unspecified Heap	1921
70W	0	On Site	Unspecified Heap	1921
71AF	0	On Site	Unspecified Ground Workings	1921
72AG	0	On Site	Unspecified Ground Workings	1921
73AC	0	On Site	Unspecified Ground Workings	1921
74N	0	On Site	Unspecified Pit	1921
75BE	0	On Site	Unspecified Pit	1921
76M	0	On Site	Unspecified Heap	1921
77F	0	On Site	Unspecified Heap	1921
78B	0	On Site	Railway Sidings	1921
79AV	0	On Site	Old Coal Level	1921
80BA	0	On Site	Cuttings	1921
81BB	0	On Site	Cuttings	1921
82Q	0	On Site	Trial Slant	1921
83Q	0	On Site	Unspecified Old Shaft	1921
84Q	0	On Site	Railway Sidings	1921
85Q	0	On Site	Unspecified Old Shaft	1921
86Q	0	On Site	Unspecified Heap	1921
87L	0	On Site	Engine House	1921
88AW	0	On Site	Unspecified Heap	1921
89S	0	On Site	Railway Sidings	1921
90L	0	On Site	Railway Sidings	1921
91R	0	On Site	Railway Sidings	1921
92S	0	On Site	Railway Sidings	1921
93V	0	On Site	Railway Sidings	1921
94T	0	On Site	Railway Sidings	1921
95T	0	On Site	Unspecified Tank	1921
96T	0	On Site	Railway Station	1921
97AY	0	On Site	Refuse Heap	1921
98S	0	On Site	Colliery	1921
99R	0	On Site	Railway Building	1921
100AX	0	On Site	Unspecified Ground Workings	1921
101AU	0	On Site	Refuse Heaps	1921
102U	0	On Site	Unspecified Ground Workings	1921
103R	0	On Site	Unspecified Ground Workings	1921
104V	0	On Site	Colliery	1921

105E	0	On Site	Unspecified Drift	1914
106AH	0	On Site	Unspecified Ground Workings	1914
107M	0	On Site	Unspecified Ground Workings	1914
108W	0	On Site	Unspecified Heap	1914
109X	0	On Site	Unspecified Ground Workings	1914
110Y	0	On Site	Trial Shaft	1914
111Z	0	On Site	Unspecified Ground Workings	1914
112AA	0	On Site	Unspecified Ground Workings	1914
113AB	0	On Site	Unspecified Heap	1914
114AC	0	On Site	Unspecified Ground Workings	1914
115D	0	On Site	Unspecified Heap	1914
116AD	0	On Site	Unspecified Ground Workings	1914
117AC	0	On Site	Unspecified Pit	1914
118AD	0	On Site	Unspecified Heap	1914
119N	0	On Site	Unspecified Ground Workings	1914
120AE	0	On Site	Unspecified Heap	1914
121AF	0	On Site	Unspecified Ground Workings	1914
122AG	0	On Site	Unspecified Ground Workings	1914
123AH	0	On Site	Unspecified Ground Workings	1914
124P	0	On Site	Unspecified Ground Workings	1914
125K	0	On Site	Engine House	1914
126H	0	On Site	Colliery	1914
127B	0	On Site	Sewage and Water Purification Works	1914
128AI	0	On Site	Unspecified Heap	1914
129B	0	On Site	Unspecified Heap	1914
130H	0	On Site	Unspecified Drift	1914
131C	0	On Site	Unspecified Drift	1914
132AI	0	On Site	Unspecified Ground Workings	1914
133G	0	On Site	Unspecified Old Level	1914
134G	0	On Site	Unspecified Old Level	1914
135G	0	On Site	Unspecified Old Level	1914
136B	0	On Site	Railway Sidings	1914
137B	0	On Site	Railway Sidings	1914
138K	0	On Site	Colliery	1914
139AJ	0	On Site	Engine House	1914
140B	0	On Site	Railway Station	1914
141H	0	On Site	Tramway Sidings	1914

142AK	0	On Site	Tramway Sidings	1914
143AB	0	On Site	Colliery	1914
144O	0	On Site	Old Coal Levels	1914
145AL	0	On Site	Unspecified Ground Workings	1914
146D	0	On Site	Unspecified Ground Workings	1914
147AD	0	On Site	Unspecified Old Level	1914
148AM	0	On Site	Unspecified Ground Workings	1914
149AN	0	On Site	Unspecified Ground Workings	1914
150F	0	On Site	Old Coal Levels	1914
151F	0	On Site	Old Coal Levels	1914
152AB	0	On Site	Old Coal Levels	1914
153G	0	On Site	Unspecified Heaps	1914
154M	0	On Site	Unspecified Ground Workings	1914
155M	0	On Site	Unspecified Old Level	1914
156BN	0	On Site	Unspecified Ground Workings	1921
157J	0	On Site	Unspecified Pit	1921
158AO	0	On Site	Old Coal Level	1921
159BL	0	On Site	Unspecified Ground Workings	1921
160AO	0	On Site	Unspecified Pit	1921
161AP	0	On Site	Unspecified Ground Workings	1921
162BT	0	On Site	Unspecified Heap	1921
163AO	0	On Site	Unspecified Ground Workings	1921
164AQ	0	On Site	Unspecified Ground Workings	1921
165BK	0	On Site	Unspecified Ground Workings	1921
166AR	0	On Site	Old Coal Level	1921
167AS	0	On Site	Old Coal Pit	1921
168AR	0	On Site	Unspecified Ground Workings	1921
169AO	0	On Site	Cuttings	1921
170AT	0	On Site	Unspecified Ground Workings	1921
171AU	0	On Site	Refuse Heap	1914
172AV	0	On Site	Old Level (Coal)	1914
173AV	0	On Site	Unspecified Ground Workings and Heap	1914
174AW	0	On Site	Unspecified Heap	1914
175Q	0	On Site	Unspecified Old Shaft	1914
176Q	0	On Site	Trial Slant	1914
177S	0	On Site	Engine House	1914
178Q	0	On Site	Unspecified Old Shaft	1914

179T	0	On Site	Unspecified Tank	1914
180BC	0	On Site	Unspecified Ground Workings	1914
181AX	0	On Site	Unspecified Ground Workings	1914
182BD	0	On Site	Unspecified Ground Workings	1914
183T	0	On Site	Railway Station	1914
184T	0	On Site	Railway Sidings	1914
185AY	0	On Site	Refuse Heap	1914
186L	0	On Site	Refuse Heap	1914
187U	0	On Site	Unspecified Ground Workings	1914
188R	0	On Site	Unspecified Ground Workings	1914
189AZ	0	On Site	Colliery	1914
190L	0	On Site	Colliery	1914
191BA	0	On Site	Cuttings	1914
192BB	0	On Site	Cuttings	1914
193AU	0	On Site	Refuse Heap	1914
194AV	0	On Site	Old Level (Coal)	1914
195AV	0	On Site	Unspecified Ground Workings and Heap	1914
196AW	0	On Site	Unspecified Heap	1914
197Q	0	On Site	Unspecified Old Shaft	1914
198Q	0	On Site	Trial Slant	1914
199S	0	On Site	Engine House	1914
200Q	0	On Site	Unspecified Old Shaft	1914
201T	0	On Site	Unspecified Tank	1914
202BC	0	On Site	Unspecified Ground Workings	1914
203AX	0	On Site	Unspecified Ground Workings	1914
204BD	0	On Site	Unspecified Ground Workings	1914
205T	0	On Site	Railway Station	1914
206T	0	On Site	Railway Sidings	1914
207AY	0	On Site	Refuse Heap	1914
208L	0	On Site	Refuse Heap	1914
209U	0	On Site	Unspecified Ground Workings	1914
210R	0	On Site	Unspecified Ground Workings	1914
211AZ	0	On Site	Colliery	1914
212L	0	On Site	Colliery	1914
213BA	0	On Site	Cuttings	1914
214BB	0	On Site	Cuttings	1914
215AC	0	On Site	Unspecified Ground Workings	1948
216AF	0	On Site	Unspecified Ground	1948

			Workings	
217BF	0	On Site	Unspecified Pit	1948
218AM	0	On Site	Unspecified Ground Workings	1948
219BG	0	On Site	Unspecified Pit	1948
220F	0	On Site	Unspecified Pit	1948
221BE	0	On Site	Unspecified Pit	1948
222X	0	On Site	Unspecified Ground Workings	1948
223W	0	On Site	Unspecified Ground Workings	1948
224AF	0	On Site	Unspecified Ground Workings	1948
225AN	0	On Site	Unspecified Ground Workings	1948
226AN	0	On Site	Unspecified Pit	1948
227AG	0	On Site	Unspecified Pit	1948
228AH	0	On Site	Unspecified Pit	1903
229AH	0	On Site	Unspecified Pit	1903
230BH	0	On Site	Unspecified Ground Workings	1903
231M	0	On Site	Unspecified Pit	1903
232G	0	On Site	Unspecified Pit	1903
233AC	0	On Site	Unspecified Ground Workings	1903
234N	0	On Site	Unspecified Pit	1903
235N	0	On Site	Unspecified Pit	1903
236E	0	On Site	Unspecified Ground Workings	1903
237AA	0	On Site	Unspecified Ground Workings	1903
238AL	0	On Site	Unspecified Ground Workings	1903
239BE	0	On Site	Unspecified Pit	1903
240BS	0	On Site	Unspecified Ground Workings	1903
241AG	0	On Site	Unspecified Pit	1903
242X	0	On Site	Unspecified Pit	1903
243D	0	On Site	Unspecified Ground Workings	1948
244N	0	On Site	Unspecified Pit	1948
245M	0	On Site	Unspecified Ground Workings	1948
246M	0	On Site	Unspecified Ground Workings	1948
247M	0	On Site	Unspecified Ground Workings	1948
248AH	0	On Site	Unspecified Pit	1948
249AH	0	On Site	Unspecified Pit	1948
250AL	0	On Site	Unspecified Ground Workings	1948

251BF	0	On Site	Unspecified Pit	1903
252AM	0	On Site	Unspecified Ground Workings	1903
253BG	0	On Site	Unspecified Pit	1903
254AN	0	On Site	Unspecified Ground Workings	1903
255AN	0	On Site	Unspecified Pit	1903
256X	0	On Site	Unspecified Ground Workings	1903
257W	0	On Site	Unspecified Ground Workings	1903
258AF	0	On Site	Unspecified Ground Workings	1903
259BJ	0	On Site	Unspecified Ground Workings	1903
260AG	0	On Site	Unspecified Ground Workings	1903
261BH	0	On Site	Unspecified Ground Workings	1877
262BI	0	On Site	Old Coal Level	1877
263BI	0	On Site	Old Coal Level	1877
264B	0	On Site	Unspecified Ground Workings	1877
265M	0	On Site	Unspecified Pit	1877
266D	0	On Site	Old Coal Level	1877
267AL	0	On Site	Old Coal Level	1877
268O	0	On Site	Old Coal Level	1877
269AL	0	On Site	Unspecified Pit	1877
270AL	0	On Site	Unspecified Pit	1877
271AE	0	On Site	Unspecified Ground Workings	1877
272W	0	On Site	Unspecified Ground Workings	1877
273BJ	0	On Site	Unspecified Pit	1877
274BP	0	On Site	Unspecified Ground Workings	1948
275AO	0	On Site	Unspecified Ground Workings	1948
276AP	0	On Site	Unspecified Pit	1948
277BK	0	On Site	Unspecified Pit	1948
278AR	0	On Site	Unspecified Pit	1948
279BL	0	On Site	Unspecified Ground Workings	1948
280BK	0	On Site	Unspecified Ground Workings	1948
281AP	0	On Site	Unspecified Ground Workings	1948
282AQ	0	On Site	Old Coal Level	1948
283BQ	0	On Site	Unspecified Pit	1948
284BM	0	On Site	Unspecified Ground Workings	1948
285A	0	On Site	Unspecified Pit	1948

286A	0	On Site	Unspecified Ground Workings	1948
287BN	0	On Site	Unspecified Pit	1948
288AO	0	On Site	Unspecified Pit	1903
289A	0	On Site	Unspecified Pit	1903
290AO	0	On Site	Unspecified Pit	1903
291BK	0	On Site	Unspecified Pit	1903
292AO	0	On Site	Old Coal Level	1903
293BO	0	On Site	Unspecified Ground Workings	1903
294A	0	On Site	Unspecified Ground Workings	1903
295AR	0	On Site	Old Coal Level	1903
296AO	0	On Site	Unspecified Pit	1903
297BP	0	On Site	Unspecified Pit	1903
298BL	0	On Site	Unspecified Ground Workings	1877
299BQ	0	On Site	Unspecified Ground Workings	1877
300BL	0	On Site	Unspecified Ground Workings	1877
301BK	0	On Site	Unspecified Ground Workings	1877
302AO	0	On Site	Unspecified Pit	1877
303AO	0	On Site	Unspecified Ground Workings	1877
304BM	0	On Site	Unspecified Ground Workings	1877
305BM	0	On Site	Unspecified Pit	1877
306A	0	On Site	Unspecified Ground Workings	1877
307AT	0	On Site	Unspecified Ground Workings	1877
308BO	0	On Site	Unspecified Ground Workings	1877
309AZ	0	On Site	Unspecified Ground Workings	1876
310BP	0	On Site	Unspecified Ground Workings	1877
311AV	0	On Site	Old Coal Level	1901
312R	0	On Site	Unspecified Ground Workings	1901
313AZ	0	On Site	Unspecified Ground Workings	1901
314Q	0	On Site	Unspecified Ground Workings	1901
315BU	0	On Site	Unspecified Ground Workings	1901
316AO	0	On Site	Old Coal Level	1900
317BR	0	On Site	Unspecified Ground Workings	1900
318AR	0	On Site	Old Coal Level	1900

319BP	0	On Site	Unspecified Ground Workings	1900
320BK	0	On Site	Unspecified Pit	1900
321BO	0	On Site	Unspecified Ground Workings	1900
322AO	0	On Site	Unspecified Pit	1877
323BM	0	On Site	Unspecified Pit	1900
324BL	0	On Site	Unspecified Ground Workings	1900
325AR	0	On Site	Unspecified Pit	1877
326AR	0	On Site	Unspecified Pit	1877
327BK	0	On Site	Unspecified Pit	1877
328P	0	On Site	Unspecified Heap	1948
329P	0	On Site	Unspecified Heap	1948
330BI	0	On Site	Unspecified Old Level	1948
331AI	0	On Site	Unspecified Heap	1948
332AD	0	On Site	Unspecified Old Level	1948
333N	0	On Site	Unspecified Heap	1948
334AD	0	On Site	Unspecified Heap	1948
335AD	0	On Site	Unspecified Heap	1948
336Y	0	On Site	Coal Shaft	1948
337AK	0	On Site	Unspecified Heap	1948
338F	0	On Site	Old Coal Levels	1948
339AA	0	On Site	Unspecified Heaps	1948
340AC	0	On Site	Unspecified Heap	1948
341BS	0	On Site	Unspecified Heap	1948
342BS	0	On Site	Unspecified Heap	1948
343AM	0	On Site	Unspecified Heap	1948
344AM	0	On Site	Unspecified Heaps	1948
345BJ	0	On Site	Unspecified Heaps	1948
346F	0	On Site	Unspecified Heap	1948
347F	0	On Site	Refuse Heap	1948
348F	0	On Site	Unspecified Heap	1948
349AB	0	On Site	Colliery	1948
350G	0	On Site	Unspecified Old Levels	1948
351K	0	On Site	Colliery	1948
352BE	0	On Site	Unspecified Heap	1948
353H	0	On Site	Colliery	1948
354AN	0	On Site	Unspecified Heap	1948
355CI	0	On Site	Refuse Heap	1948
356E	0	On Site	Refuse Heap	1948
357AE	0	On Site	Unspecified Heap	1948
358AE	0	On Site	Unspecified Heap	1948
359AR	0	On Site	Old Coal Pit	1903
360BL	0	On Site	Unspecified Ground Workings	1903
361BN	0	On Site	Unspecified Ground	1903

			Workings	
362Q	0	On Site	Old Coal Pit	1901
363N	0	On Site	Unspecified Heap	1948
364D	0	On Site	Unspecified Heap	1948
365AD	0	On Site	Unspecified Heap	1948
366AH	0	On Site	Unspecified Heap	1903
367P	0	On Site	Unspecified Heap	1903
368M	0	On Site	Unspecified Heap	1903
369M	0	On Site	Unspecified Heap	1903
370M	0	On Site	Unspecified Heaps	1903
371N	0	On Site	Unspecified Heap	1903
372M	0	On Site	Unspecified Heap	1903
373BX	0	On Site	Unspecified Heap	1903
374N	0	On Site	Unspecified Heaps	1903
375N	0	On Site	Unspecified Heap	1903
376D	0	On Site	Unspecified Old Levels	1903
377Z	0	On Site	Unspecified Heaps	1903
378AL	0	On Site	Unspecified Old Levels	1903
379AE	0	On Site	Unspecified Heap	1903
380AC	0	On Site	Unspecified Heap	1903
381BE	0	On Site	Unspecified Heap	1903
382AN	0	On Site	Unspecified Heap	1903
383AM	0	On Site	Unspecified Heap	1903
384AM	0	On Site	Unspecified Heaps	1903
385AA	0	On Site	Unspecified Heap	1903
386AA	0	On Site	Unspecified Old Levels	1903
387K	0	On Site	Colliery	1903
388AI	0	On Site	Colliery	1903
389D	0	On Site	Unspecified Old Levels	1903
390BJ	0	On Site	Unspecified Heap	1903
391AM	0	On Site	Unspecified Heaps	1903
392AL	0	On Site	Unspecified Old Levels	1903
393AL	0	On Site	Unspecified Heap	1903
394AA	0	On Site	Unspecified Old Level	1903
395BS	0	On Site	Unspecified Heap	1903
396D	0	On Site	Unspecified Heap	1903
397M	0	On Site	Unspecified Heaps	1877
398M	0	On Site	Unspecified Heaps	1877
399N	0	On Site	Unspecified Heaps	1877
400M	0	On Site	Unspecified Heap	1877
401D	0	On Site	Unspecified Heap	1877
402AB	0	On Site	Unspecified Heap	1877
403G	0	On Site	Coal Levels	1877
404G	0	On Site	Coal Levels	1877
405AI	0	On Site	Colliery	1877
406AL	0	On Site	Unspecified Heap	1877

407BT	0	On Site	Unspecified Heap	1948
408BM	0	On Site	Colliery	1948
409BW	0	On Site	Refuse Heap	1948
410BM	0	On Site	Refuse Heaps	1948
411BR	0	On Site	Refuse Heap	1948
412AP	0	On Site	Unspecified Heaps	1948
413AP	0	On Site	Unspecified Heap	1903
414BK	0	On Site	Unspecified Heap	1903
415BT	0	On Site	Unspecified Heap	1903
416AR	0	On Site	Unspecified Heap	1903
417BT	0	On Site	Unspecified Heap	1877
418BL	0	On Site	Unspecified Heap	1877
419AP	0	On Site	Unspecified Heap	1877
420AQ	0	On Site	Unspecified Heap	1877
421AP	0	On Site	Unspecified Heap	1877
422BV	0	On Site	Unspecified Heap	1876
423BU	0	On Site	Colliery	1901
424U	0	On Site	Unspecified Heap	1901
425BT	0	On Site	Unspecified Heap	1900
426BL	0	On Site	Unspecified Heap	1900
427BK	0	On Site	Unspecified Heap	1900
428BO	0	On Site	Brick Works	1948
429B	0	On Site	Railway Station	1948
430K	0	On Site	Engine House	1948
431AJ	0	On Site	Engine House	1948
432C	0	On Site	Purification Works	1948
433B	0	On Site	Railway Sidings	1948
434B	0	On Site	Railway Station	1903
435C	0	On Site	Purification Works	1903
436AJ	0	On Site	Engine House	1903
437B	0	On Site	Railway Sidings	1903
438AA	0	On Site	Tramway Sidings	1903
439B	0	On Site	Railway Sidings	1877
440BY	0	On Site	Railway Sidings	1948
441AY	0	On Site	Lime Kiln	1876
442BV	0	On Site	Railway Sidings	1876
443T	0	On Site	Railway Station	1901
444CF	0	On Site	Railway Sidings	1901
445T	0	On Site	Railway Sidings	1901
446AS	0	On Site	Refuse Heap	1977
447BL	0	On Site	Railway Sidings	1977
448AS	0	On Site	Unspecified Ground Workings	1962
449AS	0	On Site	Unspecified Ground Workings	1962
450BQ	0	On Site	Unspecified Ground Workings	1962

451P	0	On Site	Unspecified Heap	1965
452E	0	On Site	Unspecified Disused Drift	1965
453BW	0	On Site	Refuse Heap	1965
454BM	0	On Site	Refuse Heap	1965
455O	0	On Site	Unspecified Disused Levels	1965
456BI	0	On Site	Unspecified Disused Level	1965
457G	0	On Site	Unspecified Disused Levels	1965
458G	0	On Site	Unspecified Disused Levels	1965
459G	0	On Site	Unspecified Disused Levels	1965
460G	0	On Site	Unspecified Disused Levels	1965
461AG	0	On Site	Unspecified Heaps	1965
462P	0	On Site	Unspecified Heap	1965
463BS	0	On Site	Unspecified Heap	1965
464BX	0	On Site	Unspecified Heap	1965
465M	0	On Site	Unspecified Heap	1965
466N	0	On Site	Unspecified Heaps	1965
467BX	0	On Site	Unspecified Heaps	1965
468BQ	0	On Site	Unspecified Pit	1962
469BK	0	On Site	Unspecified Ground Workings	1962
470BK	0	On Site	Unspecified Ground Workings	1962
471AQ	0	On Site	Unspecified Ground Workings	1962
472BQ	0	On Site	Railway Sidings	1962
473BK	0	On Site	Unspecified Heap	1962
474AQ	0	On Site	Unspecified Disused Level	1962
475CA	0	On Site	Refuse Heap	1965
476K	0	On Site	Refuse Heap	1965
477BP	0	On Site	Refuse Heap	1977
478BL	0	On Site	Refuse Heap	1977
479F	0	On Site	Unspecified Disused Levels	1965
480F	0	On Site	Unspecified Disused Levels	1965
481D	0	On Site	Unspecified Heap	1965
482AI	0	On Site	Unspecified Heap	1965
483D	0	On Site	Unspecified Heaps	1965
484D	0	On Site	Unspecified Heap	1965
485AD	0	On Site	Unspecified Heaps	1965
486AC	0	On Site	Unspecified Heap	1965
487AN	0	On Site	Unspecified Heaps	1965
488BF	0	On Site	Unspecified Heaps	1965
489Z	0	On Site	Unspecified Heap	1965

490Z	0	On Site	Unspecified Heap	1965
491AA	0	On Site	Unspecified Heaps	1965
492AK	0	On Site	Unspecified Heap	1965
493F	0	On Site	Unspecified Heap	1965
494AF	0	On Site	Unspecified Heaps	1965
495X	0	On Site	Unspecified Heap	1965
496CB	0	On Site	Unspecified Disused Level	1965
497Q	0	On Site	Unspecified Disused Level	1965
498BV	0	On Site	Unspecified Disused Level	1965
499AY	0	On Site	Unspecified Heaps	1965
500AZ	0	On Site	Refuse Heap	1965
501BO	0	On Site	Refuse Heap	1965
502BY	0	On Site	Unspecified Heap	1965
503M	0	On Site	Unspecified Heap	1965
504K	0	On Site	Railway Station	1965
505T	0	On Site	Railway Station	1965
506BZ	0	On Site	Unspecified Works	1965
507T	0	On Site	Railway Building	1965
508R	0	On Site	Railway Building	1965
509BZ	0	On Site	Railway Sidings	1965
510BS	0	On Site	Unspecified Ground Workings	1965
511AL	0	On Site	Unspecified Ground Workings	1965
512AL	0	On Site	Unspecified Ground Workings	1965
513AH	0	On Site	Unspecified Pit	1965
514BS	0	On Site	Unspecified Ground Workings	1965
515N	0	On Site	Unspecified Ground Workings	1965
516M	0	On Site	Unspecified Pit	1965
517M	0	On Site	Unspecified Pit	1965
518N	0	On Site	Unspecified Ground Workings	1965
519M	0	On Site	Unspecified Ground Workings	1965
520N	0	On Site	Unspecified Ground Workings	1965
521M	0	On Site	Unspecified Ground Workings	1965
522I	0	On Site	Unspecified Ground Workings	1965
523AD	0	On Site	Unspecified Pit	1965
524BE	0	On Site	Unspecified Pit	1965
525BE	0	On Site	Unspecified Ground Workings	1965
526BE	0	On Site	Unspecified Ground Workings	1965
527AM	0	On Site	Unspecified Ground	1965

			Workings	
528BJ	0	On Site	Unspecified Ground Workings	1965
529AM	0	On Site	Unspecified Ground Workings	1965
530AM	0	On Site	Unspecified Ground Workings	1965
531BG	0	On Site	Unspecified Ground Workings	1965
532AM	0	On Site	Unspecified Ground Workings	1965
533Z	0	On Site	Unspecified Pit	1965
534AK	0	On Site	Unspecified Pit	1965
535AK	0	On Site	Unspecified Pit	1965
536AA	0	On Site	Unspecified Ground Workings	1965
537W	0	On Site	Unspecified Ground Workings	1965
538AG	0	On Site	Unspecified Ground Workings	1965
539CC	0	On Site	Unspecified Ground Workings	1965
540BN	0	On Site	Unspecified Ground Workings	1965
541CD	0	On Site	Unspecified Ground Workings	1965
542BM	0	On Site	Unspecified Ground Workings	1965
543AX	0	On Site	Unspecified Ground Workings	1965
544B	0	On Site	Unspecified Mine	1965
545AI	0	On Site	Railway Sidings	1965
546AI	0	On Site	Railway Buildings	1965
547AI	0	On Site	Railway Buildings	1965
548AI	0	On Site	Railway Building	1965
549AI	0	On Site	Railway Building	1965
550AJ	0	On Site	Railway Buildings	1965
551AI	0	On Site	Railway Building	1965
552T	0	On Site	Railway Buildings	1965
553AZ	0	On Site	Railway Buildings	1965
554BU	0	On Site	Railway Buildings	1965
555BO	0	On Site	Unspecified Works	1965
556CA	0	On Site	Unspecified Disused Tip	1987
557E	0	On Site	Unspecified Disused Drift	1987
558AM	0	On Site	Refuse Heap	1987
559AB	0	On Site	Unspecified Disused Drift	1987
560F	0	On Site	Unspecified Disused Levels	1987
561F	0	On Site	Unspecified Disused Levels	1987
562FZ	0	On Site	Unspecified Disused	1987

			Workings	
563Q	0	On Site	Unspecified Disused Level	1987
564AY	0	On Site	Unspecified Heaps	1987
565BR	0	On Site	Opencast Workings	1987
566CB	0	On Site	Unspecified Disused Level	1987
567L	0	On Site	Unspecified Disused Shaft	1987
568CE	0	On Site	Unspecified Disused Level	1987
569R	0	On Site	Railway Building	1987
570R	0	On Site	Unspecified Tanks	1987
571BZ	0	On Site	Mineral Railway Sidings	1987
572Z	0	On Site	Unspecified Pit	1987
573AA	0	On Site	Unspecified Ground Workings	1987
574CC	0	On Site	Unspecified Ground Workings	1987
575CD	0	On Site	Unspecified Ground Workings	1987
576AZ	0	On Site	Refuse Heap	1987
577BZ	0	On Site	Unspecified Works	1987
578CO	0	On Site	Railway Buildings	1987
579BN	0	On Site	Refuse Heap	1987
580AT	0	On Site	Unspecified Ground Workings	1876
581BT	0	On Site	Unspecified Heap	1876
582AP	0	On Site	Unspecified Ground Workings	1876
583AQ	0	On Site	Unspecified Ground Workings	1876
584BR	0	On Site	Unspecified Ground Workings	1876
585BN	0	On Site	Unspecified Ground Workings	1876
586BO	0	On Site	Unspecified Tank	1876
587T	0	On Site	Railway Sidings	1948
588AZ	0	On Site	Railway Buildings	1948
589CC	0	On Site	Unspecified Heap	1948
590CC	0	On Site	Unspecified Heap	1948
591CE	0	On Site	Unspecified Old Shaft	1948
592AW	0	On Site	Unspecified Heap	1948
593AZ	0	On Site	Colliery	1948
594AY	0	On Site	Refuse Heap	1948
595Q	0	On Site	Unspecified Heap	1948
596Q	0	On Site	Unspecified Slant	1948
597Q	0	On Site	Refuse Heap	1948
598Q	0	On Site	Refuse Heap	1948
599Q	0	On Site	Unspecified Old Shaft	1948
600T	0	On Site	Railway Station	1948
601T	0	On Site	Railway Buildings	1948

602T	0	On Site	Railway Building	1948
603T	0	On Site	Railway Building	1948
604AV	0	On Site	Old Coal Level	1948
605CB	0	On Site	Unspecified Pit	1948
606AZ	0	On Site	Unspecified Ground Workings	1948
607BV	0	On Site	Unspecified Ground Workings	1948
608BD	0	On Site	Unspecified Ground Workings	1948
609AX	0	On Site	Unspecified Ground Workings	1948
610Q	0	On Site	Unspecified Old Shaft	1903
611T	0	On Site	Railway Sidings	1903
612AV	0	On Site	Coal Level	1903
613CG	0	On Site	Tramway Sidings	1903
614AW	0	On Site	Tramway Sidings	1903
615GA	0	On Site	Refuse Heap	1903
616Q	0	On Site	Unspecified Old Shaft	1903
617T	0	On Site	Railway Station	1903
618S	0	On Site	Unspecified Heap	1903
619U	0	On Site	Unspecified Heap	1903
620AX	0	On Site	Unspecified Pit	1903
621CH	0	On Site	Old Coal Level	1903
622AU	0	On Site	Refuse Heap	1903
623AZ	0	On Site	Smithy	1877
624AY	0	On Site	Lime Kiln	1877
625BV	0	On Site	Unspecified Heap	1877
626Q	0	On Site	Unspecified Heap	1877
627T	0	On Site	Railway Station	1877
628T	0	On Site	Railway Sidings	1877
629AX	0	On Site	Unspecified Heap	1877
630AW	0	On Site	Unspecified Heap	1877
631Q	0	On Site	Old Coal Pit	1877
632AZ	0	On Site	Unspecified Ground Workings	1877
633AV	0	On Site	Old Coal Level	1877
634BD	0	On Site	Unspecified Ground Workings	1877
635CS	0	On Site	Unspecified Ground Workings	1877
636AX	0	On Site	Unspecified Pit	1877
637AX	0	On Site	Unspecified Ground Workings	1877
638CJ	0	On Site	Unspecified Pit	1877
639AI	0	On Site	Unspecified Drift	1948
640I	0	On Site	Unspecified Drift	1903
641AI	0	On Site	Unspecified Drift	1903

642AH	0	On Site	Unspecified Old Quarry	1877
643FY	0	On Site	Cuttings	1877
644AL	0	On Site	Unspecified Old Quarry	1877
645AF	0	On Site	Unspecified Old Quarry	1877
646X	0	On Site	Unspecified Old Quarry	1877
647AN	0	On Site	Unspecified Old Quarry	1877
648AM	0	On Site	Unspecified Old Quarry	1877
649CR	0	On Site	Cuttings	1877
650D	0	On Site	Unspecified Drift	1948
651E	0	On Site	Unspecified Drift	1948
652Z	0	On Site	Unspecified Old Quarry	1877
653AP	0	On Site	Unspecified Old Quarries	1903
654AT	0	On Site	Unspecified Old Quarries	1900
655BQ	0	On Site	Unspecified Old Quarries	1900
656AZ	0	On Site	Cuttings	1876
657BB	0	On Site	Cuttings	1901
658BB	0	On Site	Cuttings	1965
659BA	0	On Site	Cuttings	1965
660BB	0	On Site	Cuttings	1987
661BA	0	On Site	Cuttings	1987
662BE	0	On Site	Unspecified Old Quarries	1877
663BA	0	On Site	Cuttings	1948
664BB	0	On Site	Cuttings	1903
665BA	0	On Site	Cuttings	1903
666GB	0	On Site	Unspecified Old Quarries	1877
667GC	0	On Site	Unspecified Old Quarry	1877
668CF	0	On Site	Cuttings	1877
669CG	0	On Site	Cuttings	1877
670CH	0	On Site	Cuttings	1877
671AO	0	On Site	Unspecified Old Quarries	1900
672AP	0	On Site	Unspecified Old Quarries	1900
673K	0	On Site	Colliery	1921
674K	0	On Site	Engine House	1921
675B	0	On Site	Purification Works	1921
676K	0	On Site	Unspecified Old Level	1921
677AJ	0	On Site	Engine House	1921
678D	0	On Site	Unspecified Old Level	1921
679G	0	On Site	Unspecified Old Levels	1921
680N	0	On Site	Unspecified Old Levels	1921
681N	0	On Site	Unspecified Old Levels	1921
682BX	0	On Site	Unspecified Old Levels	1921
683G	0	On Site	Unspecified Old Levels	1921
684H	0	On Site	Colliery	1921
685B	0	On Site	Railway Station	1921
686B	0	On Site	Railway Building	1921
687BH	0	On Site	Unspecified Ground	1921

			Workings	
688CL	0	On Site	Unspecified Heap	1921
689B	0	On Site	Unspecified Heap	1921
690BA	0	On Site	Cuttings	1901
691AI	0	On Site	Refuse Heap	1921
692D	0	On Site	Unspecified Heap	1921
693BJ	0	On Site	Unspecified Ground Workings	1921
694CI	0	On Site	Unspecified Heap	1921
695I	0	On Site	Refuse Heap	1921
696Y	0	On Site	Coal Trial Shaft	1921
697F	0	On Site	Old Coal Levels	1921
698F	0	On Site	Old Coal Levels	1921
699F	0	On Site	Old Coal Levels	1921
700F	0	On Site	Old Coal Levels	1921
701AA	0	On Site	Old Coal Levels	1921
702W	0	On Site	Unspecified Heap	1921
703CJ	0	On Site	Unspecified Heap	1921
704BH	0	On Site	Unspecified Pit	1921
705AE	0	On Site	Old Coal Levels	1921
706BS	0	On Site	Unspecified Ground Workings	1921
707X	0	On Site	Unspecified Ground Workings	1921
708AN	0	On Site	Unspecified Ground Workings	1921
709N	0	On Site	Unspecified Ground Workings	1921
710AI	0	On Site	Unspecified Heap	1921
711B	0	On Site	Railway Sidings	1921
712E	0	On Site	Refuse Heap	1921
713CK	0	On Site	Tramway Sidings	1921
714Y	0	On Site	Colliery	1921
715F	0	On Site	Refuse Heap	1921
716Z	0	On Site	Unspecified Ground Workings	1921
717O	0	On Site	Old Coal Levels	1921
718AG	0	On Site	Unspecified Ground Workings	1921
719AF	0	On Site	Unspecified Ground Workings	1921
720BE	0	On Site	Unspecified Ground Workings	1921
721AM	0	On Site	Unspecified Ground Workings	1921
722AH	0	On Site	Unspecified Ground Workings	1921
723P	0	On Site	Unspecified Ground Workings	1921
724BX	0	On Site	Unspecified Old Level	1921

725BB	0	On Site	Cuttings	1948
726BA	0	On Site	Cuttings	1877
727N	0	On Site	Unspecified Pit	1921
728D	0	On Site	Unspecified Ground Workings	1921
729G	0	On Site	Unspecified Heap	1921
730AI	0	On Site	Unspecified Heap	1921
731BX	0	On Site	Unspecified Ground Workings	1921
732CM	0	On Site	Unspecified Ground Workings	1921
733M	0	On Site	Unspecified Heap	1921
734AH	0	On Site	Unspecified Ground Workings	1921
735M	0	On Site	Unspecified Heaps	1921
736AV	0	On Site	Old Coal Level	1921
737CC	0	On Site	Unspecified Heap	1921
738CB	0	On Site	Unspecified Pit	1921
739AX	0	On Site	Unspecified Ground Workings	1921
740T	0	On Site	Railway Station	1921
741T	0	On Site	Unspecified Tank	1921
742AW	0	On Site	Unspecified Heap	1921
743Q	0	On Site	Unspecified Old Shaft	1921
744Q	0	On Site	Unspecified Old Shaft	1921
745S	0	On Site	Colliery	1921
746AY	0	On Site	Refuse Heap	1921
747V	0	On Site	Colliery	1921
748R	0	On Site	Railway Building	1921
749V	0	On Site	Railway Sidings	1921
750BD	0	On Site	Unspecified Pits	1921
751AV	0	On Site	Unspecified Heap	1921
752AZ	0	On Site	Unspecified Ground Workings	1921
753Q	0	On Site	Unspecified Heap	1921
754Q	0	On Site	Refuse Heap	1921
755Q	0	On Site	Unspecified Slant	1921
756BT	0	On Site	Unspecified Heaps	1921
757AO	0	On Site	Old Coal Level	1921
758AO	0	On Site	Unspecified Pit	1921
759AO	0	On Site	Unspecified Ground Workings	1921
760AP	0	On Site	Unspecified Ground Workings	1921
761BK	0	On Site	Unspecified Ground Workings	1921
762CN	0	On Site	Unspecified Ground Workings	1921
763BM	0	On Site	Unspecified Pit	1921

764BM	0	On Site	Unspecified Ground Workings	1921
765BL	0	On Site	Unspecified Ground Workings	1921
766AS	0	On Site	Old Coal Pit	1921
767AS	0	On Site	Old Coal Level	1921
768AS	0	On Site	Unspecified Ground Workings	1921
769AQ	0	On Site	Unspecified Ground Workings	1921
770T	0	On Site	Railway Building	1921
771BR	0	On Site	Unspecified Ground Workings	1921
772T	0	On Site	Railway Buildings	1921
773S	0	On Site	Engine House	1921
774K	0	On Site	Colliery	1921
775BI	0	On Site	Unspecified Old Level	1921
776D	0	On Site	Unspecified Old Level	1921
777AI	0	On Site	Unspecified Drift	1921
778D	0	On Site	Unspecified Drift	1921
779G	0	On Site	Unspecified Old Levels	1921
780N	0	On Site	Unspecified Old Levels	1921
781G	0	On Site	Unspecified Old Levels	1921
782BX	0	On Site	Unspecified Old Levels	1921
783G	0	On Site	Unspecified Old Levels	1921
784AI	0	On Site	Colliery	1921
785E	0	On Site	Unspecified Drift	1921
786AI	0	On Site	Unspecified Drift	1921
787BH	0	On Site	Unspecified Ground Workings	1921
788CL	0	On Site	Unspecified Heap	1921
789B	0	On Site	Unspecified Heap	1921
790M	0	On Site	Unspecified Heap	1921
791CM	0	On Site	Unspecified Ground Workings	1921
792CM	0	On Site	Unspecified Heaps	1921
793N	0	On Site	Unspecified Pit	1921
794D	0	On Site	Unspecified Ground Workings	1921
795CW	0	On Site	Railway Sidings	1921
796	0	On Site	Railway Sidings	1921
797G	0	On Site	Unspecified Heap	1921
798AI	0	On Site	Unspecified Heap	1921
799H	0	On Site	Refuse Heap	1921
800D	0	On Site	Unspecified Heap	1921
801BJ	0	On Site	Unspecified Ground Workings	1921
802H	0	On Site	Unspecified Heap	1921
803I	0	On Site	Refuse Heap	1921

804Y	0	On Site	Coal Trial Shaft	1921
805F	0	On Site	Old Coal Levels	1921
806F	0	On Site	Old Coal Levels	1921
807F	0	On Site	Old Coal Levels	1921
808F	0	On Site	Old Coal Levels	1921
809AA	0	On Site	Old Coal Levels	1921
810W	0	On Site	Unspecified Heap	1921
811CJ	0	On Site	Unspecified Heap	1921
812BH	0	On Site	Unspecified Pit	1921
813AE	0	On Site	Old Coal Levels	1921
814BS	0	On Site	Unspecified Ground Workings	1921
815X	0	On Site	Unspecified Ground Workings	1921
816AN	0	On Site	Unspecified Ground Workings	1921
817M	0	On Site	Unspecified Ground Workings	1921
818CM	0	On Site	Unspecified Ground Workings	1921
819N	0	On Site	Unspecified Ground Workings	1921
820AI	0	On Site	Unspecified Heap	1921
821E	0	On Site	Refuse Heap	1921
822Y	0	On Site	Colliery	1921
823F	0	On Site	Refuse Heap	1921
824Z	0	On Site	Unspecified Ground Workings	1921
825AL	0	On Site	Old Coal Levels	1921
826AG	0	On Site	Unspecified Ground Workings	1921
827AF	0	On Site	Unspecified Ground Workings	1921
828BE	0	On Site	Unspecified Ground Workings	1921
829AM	0	On Site	Unspecified Ground Workings	1921
830AH	0	On Site	Unspecified Ground Workings	1921
831AH	0	On Site	Unspecified Ground Workings	1921
832BI	0	On Site	Unspecified Old Level	1921
833AV	0	On Site	Old Coal Level	1921
834CC	0	On Site	Unspecified Heap	1921
835CB	0	On Site	Unspecified Pit	1921
836AX	0	On Site	Unspecified Ground Workings	1921
837BA	0	On Site	Cuttings	1921
838BB	0	On Site	Cuttings	1921
839AW	0	On Site	Unspecified Heap	1921
840L	0	On Site	Unspecified Old Shaft	1921

841Q	0	On Site	Unspecified Old Shaft	1921
842S	0	On Site	Colliery	1921
843AY	0	On Site	Refuse Heap	1921
844V	0	On Site	Colliery	1921
845Q	0	On Site	Unspecified Slant	1921
846Q	0	On Site	Refuse Heap	1921
847Q	0	On Site	Unspecified Heap	1921
848U	0	On Site	Unspecified Ground Workings	1921
849BD	0	On Site	Unspecified Pits	1921
850AV	0	On Site	Unspecified Heap	1921
851BO	0	On Site	Cuttings	1921
852BK	0	On Site	Unspecified Ground Workings	1921
853CN	0	On Site	Unspecified Ground Workings	1921
854J	0	On Site	Unspecified Pit	1921
855BM	0	On Site	Unspecified Ground Workings	1921
856BL	0	On Site	Unspecified Ground Workings	1921
857AR	0	On Site	Old Coal Pit	1921
858AR	0	On Site	Old Coal Level	1921
859AR	0	On Site	Unspecified Ground Workings	1921
860AQ	0	On Site	Unspecified Ground Workings	1921
861AP	0	On Site	Unspecified Ground Workings	1921
862BP	0	On Site	Unspecified Ground Workings	1921
863AZ	0	On Site	Colliery	1903
864CG	0	On Site	Colliery	1903
865BQ	0	On Site	Unspecified Pit	1921
866BQ	0	On Site	Cuttings	1921
867BR	0	On Site	Unspecified Ground Workings	1921
868CG	0	On Site	Disused Colliery	1948
869N	0	On Site	Unspecified Ground Workings	1948
870N	0	On Site	Unspecified Old Levels	1948
871Z	0	On Site	Unspecified Heaps	1948
872AL	0	On Site	Old Coal Levels	1948
873CK	0	On Site	Colliery	1948
874BI	0	On Site	Unspecified Old Level	1903
875T	0	On Site	Smithy	1876
876P	0	On Site	Unspecified Heaps	1877
877M	0	On Site	Unspecified Heaps	1877
878G	0	On Site	Unspecified Old Drift	1877
879AG	0	On Site	Coal Level	1877

880BQ	0	On Site	Old Coal Level	1921
881BT	0	On Site	Unspecified Heaps	1921
882AD	0	On Site	Unspecified Old Quarry	1877
883AG	0	On Site	Unspecified Old Quarry	1877
884N	0	On Site	Unspecified Old Levels	1948
885BS	0	On Site	Unspecified Level	1903
886CP	0	On Site	Coal Pit	1876
887BA	0	On Site	Cuttings	1921
888BB	0	On Site	Cuttings	1921
889Q	0	On Site	Railway Sidings	1921
890R	0	On Site	Railway Building	1921
891V	0	On Site	Colliery	1921
892S	0	On Site	Colliery	1921
893AW	0	On Site	Unspecified Heap	1921
894Q	0	On Site	Old Shaft	1921
895AV	0	On Site	Old Coal Level	1921
896Q	0	On Site	Slant	1921
897Q	0	On Site	Old Shaft	1921
898AY	0	On Site	Engine House	1921
899AY	0	On Site	Refuse Heap	1921
900T	0	On Site	Railway Station	1921
901R	0	On Site	Unspecified Ground Workings	1921
902AX	0	On Site	Unspecified Ground Workings	1921
903BD	0	On Site	Unspecified Ground Workings	1921
904CC	0	On Site	Unspecified Heap	1921
905CC	0	On Site	Unspecified Heap	1921
906BT	0	On Site	Unspecified Heap	1921
907BP	0	On Site	Unspecified Ground Workings	1921
908CO	0	On Site	Unspecified Ground Workings	1921
909BM	0	On Site	Unspecified Ground Workings	1921
910BK	0	On Site	Unspecified Ground Workings	1921
911BL	0	On Site	Unspecified Ground Workings	1921
912BQ	0	On Site	Unspecified Pit	1921
913BC	2	S	Unspecified Pit	1921
914BC	2	S	Unspecified Pit	1921
915AR	2	S	Unspecified Ground Workings	1877
916CG	2	N	Cuttings	1877
917AZ	3	W	Unspecified Drift	1921
918U	3	W	Unspecified Heap	1877
919V	3	SE	Unspecified Disused Tip	1987

920CK	3	N	Colliery	1921
921BD	3	SE	Unspecified Ground Workings	1921
922CT	3	NE	Unspecified Old Quarry	1900
923CQ	4	S	Cuttings	1962
924AR	4	S	Old Coal Level	1903
925BU	5	W	Unspecified Drift	1914
926BU	5	W	Unspecified Drift	1914
927AR	5	S	Old Coal Pit	1900
928CK	5	N	Unspecified Disused Drift	1987
929J	5	S	Unspecified Heap	1948
930CP	5	SE	Unspecified Ground Workings	1921
931CP	5	SE	Unspecified Ground Workings	1921
932BU	5	W	Unspecified Drift	1921
933DR	6	NE	Railway Sidings	1921
934CQ	6	S	Old Coal Level	1900
935CR	7	NW	Old Coal Level	1903
936CR	7	NW	Old Coal Level	1877
937CS	7	S	Old Level (Coal)	1914
938CS	7	S	Old Level (Coal)	1914
939CT	7	NE	Old Quarry	1921
940V	8	SE	Refuse Heap	1948
941CG	8	N	Unspecified Heap	1921
942CK	8	N	Colliery	1921
943CK	8	N	Colliery	1921
944CG	8	N	Unspecified Ground Workings	1921
945CT	9	NE	Unspecified Old Quarry	1921
946CH	9	SE	Unspecified Ground Workings	1876
947CK	9	N	Colliery	1914
948CS	9	S	Old Coal Level	1948
949CS	9	S	Old Coal Level	1903
950CT	9	NE	Unspecified Quarry	1962
951CT	10	NE	Unspecified Old Quarry	1921
952CH	10	SE	Old Coal Level	1901
953CT	10	NE	Unspecified Old Quarry	1948
954CQ	11	S	Unspecified Ground Workings	1877
955V	11	SE	Refuse Heap	1914
956V	11	SE	Refuse Heap	1914
957AY	11	N	Shale Tip	1914
958AY	11	N	Shale Tip	1914
959CK	11	N	Unspecified Drift	1914
960CU	12	NE	Cuttings	1903
961CU	12	NE	Cuttings	1877

962CK	12	N	Refuse Heap	1965
963CK	12	N	Drift	1921
964CK	12	N	Drift	1921
965CP	12	SE	Railway Buildings	1965
966BU	13	W	Railway Buildings	1948
967CV	13	S	Unspecified Pit	1987
968CV	14	S	Unspecified Heaps	1965
969CV	14	S	Unspecified Ground Workings	1948
970CP	14	SE	Refuse Heaps	1921
971CP	15	SE	Refuse Heap	1965
972CG	15	N	Unspecified Heaps	1877
973CS	15	S	Old Coal Level	1921
974CK	16	N	Unspecified Drift	1921
975CG	17	N	Unspecified Heap	1948
976DA	17	S	Unspecified Disused Tip	1987
977CW	17	NE	Railway Sidings	1948
978CW	17	NE	Railway Sidings	1921
979CX	17	S	Cuttings	1921
980BU	17	S	Unspecified Heap	1921
981DB	18	S	Unspecified Heap	1903
982CG	19	N	Unspecified Ground Workings	1921
983CG	19	N	Unspecified Ground Workings	1921
984CV	19	S	Unspecified Ground Workings	1921
985CG	19	N	Unspecified Ground Workings	1914
986CG	19	N	Unspecified Ground Workings	1914
987CY	19	NW	Unspecified Ground Workings	1914
988CV	19	S	Unspecified Ground Workings	1903
989BV	20	S	Old Coal Level	1901
990CG	20	N	Unspecified Old Level	1948
991CX	20	S	Old Coal Pit	1921
992CG	21	N	Unspecified Pit	1914
993CG	21	N	Unspecified Pit	1914
994CX	21	S	Unspecified Pit	1877
995V	22	S	Unspecified Ground Workings	1876
996BV	22	S	Unspecified Pit	1948
997BV	22	S	Unspecified Pit	1903
998CG	22	N	Unspecified Heap	1921
999CG	22	N	Unspecified Heap	1921
1000V	22	S	Unspecified Ground Workings	1877

1001BV	22	SE	Refuse Heap	1921
1002BV	22	SE	Refuse Heap	1921
1003BV	22	S	Old Coal Level	1921
1004BV	22	S	Old Coal Level	1921
1005AT	24	S	Unspecified Ground Workings	1948
1006CY	25	NW	Unspecified Ground Workings	1921
1007CY	25	NW	Unspecified Ground Workings	1921
1008CY	25	NW	Unspecified Ground Workings	1921
1009BV	25	SE	Refuse Heap	1914
1010BV	25	SE	Refuse Heap	1914
1011CX	26	S	Unspecified Pit	1962
1012CX	28	S	Unspecified Pits	1948
1013BV	28	S	Old Coal Level	1921
1014CQ	28	SE	Unspecified Heap	1900
1015CD	29	S	Unspecified Ground Workings	1921
1016CD	29	S	Unspecified Ground Workings	1921
1017CZ	31	SE	Unspecified Ground Workings	1914
1018CZ	31	SE	Unspecified Ground Workings	1914
1019AT	31	S	Unspecified Heap	1948
1020V	31	S	Unspecified Mine	1965
1021DD	31	N	Unspecified Pit	1921
1022DA	31	S	Refuse Heap	1965
1023DC	33	NE	Unspecified Pit	1914
1024BV	34	SE	Refuse Heap	1921
1025DB	34	S	Unspecified Heap	1948
1026BU	34	S	Unspecified Heap	1903
1027CD	34	S	Unspecified Ground Workings	1877
1028DC	35	NE	Unspecified Pit	1921
1029DC	35	NE	Unspecified Pit	1921
1030DC	35	NE	Unspecified Pit	1903
1031DC	35	NE	Unspecified Pit	1948
1032DC	36	NE	Unspecified Pit	1921
1033CY	36	NW	Unspecified Heaps	1877
1034DC	37	NE	Unspecified Pit	1877
1035CX	37	S	Old Coal Level	1903
1036DD	37	N	Old Coal Pit	1877
1037DD	37	N	Unspecified Pit	1921
1038BV	38	S	Old Trial Drift	1914
1039BV	38	S	Old Trial Drift	1914
1040DA	40	S	Unspecified Old Quarries	1903

1041DC	41	NE	Unspecified Old Level	1903
1042CG	42	N	Unspecified Old Level	1921
1043CS	43	S	Unspecified Heap	1948
1044CN	43	SE	Unspecified Heap	1965
1045CN	43	SE	Unspecified Heap	1987
1046CY	43	NW	Old Coal Level	1921
1047CY	43	NW	Old Coal Level	1921
1048DD	44	N	Unspecified Pit	1914
1049DD	44	N	Unspecified Pit	1914
1050DD	44	N	Unspecified Pit	1948
1051CS	44	S	Unspecified Heap	1921
1052CS	44	S	Unspecified Heap	1921
1053CY	44	NW	Old Coal Level	1914
1054DP	45	S	Unspecified Disused Workings	1987
1055DD	45	N	Unspecified Pit	1921
1056DD	45	N	Unspecified Pit	1921
1057CS	45	S	Unspecified Pit	1914
1058CS	45	S	Unspecified Pit	1914
1059BD	45	SE	Unspecified Pit	1948
1060CG	45	N	Old Level	1921
1061AQ	46	NE	Unspecified Disused Level	1977
1062CY	47	NW	Old Coal Level	1948
1063CS	47	S	Unspecified Ground Workings	1877
1064BV	47	S	Old Trail Drift	1921
1065BC	47	S	Unspecified Heap	1903
1066BC	47	S	Unspecified Heap	1877
1067CX	47	S	Unspecified Pit	1877
1068CQ	49	SE	Unspecified Heap	1921
1069CQ	49	SE	Unspecified Heap	1921
1070CX	49	S	Unspecified Ground Workings	1962
1071CP	50	W	Unspecified Ground Workings	1901
1072CY	50	NW	Old Coal Level	1921
1073DE	51	SW	Unspecified Ground Workings	1876
1074AQ	51	NE	Old Coal Level	1921
1075AQ	51	NE	Old Coal Level	1921
1076AQ	52	NE	Old Coal Pit	1921
1077CG	52	N	Unspecified Old Level	1914
1078CG	52	N	Unspecified Old Level	1914
1079AT	52	S	Unspecified Quarry	1876
1080DF	52	NE	Unspecified Heap	1877
1081DE	53	SW	Unspecified Ground Workings	1877
1082DG	53	SE	Coal Pit	1877

1083AQ	53	NE	Old Coal Level	1921
1084DE	53	SW	Unspecified Old Quarry	1901
1085DA	53	S	Refuse Heap	1948
1086DC	53	NE	Old Coal Level	1877
1087DF	53	NE	Unspecified Heap	1962
1088DE	54	SW	Unspecified Old Quarry	1903
1089CG	54	N	Unspecified Old Level	1921
1090CG	54	N	Unspecified Old Level	1921
1091CS	54	S	Unspecified Heap	1921
1092DF	55	NE	Unspecified Heap	1921
1093DF	55	NE	Unspecified Heap	1921
1094DG	55	S	Unspecified Ground Workings	1921
1095DG	55	S	Unspecified Ground Workings	1921
1096DF	56	NE	Unspecified Heap	1948
1097DF	56	NE	Unspecified Heap	1921
1098DF	56	NE	Unspecified Heap	1921
1099DG	57	S	Unspecified Ground Workings	1948
1100DB	57	S	Unspecified Ground Workings	1965
1101DE	57	S	Unspecified Ground Workings	1921
1102DE	57	S	Unspecified Ground Workings	1921
1103CP	58	SE	Unspecified Ground Workings	1877
1104CQ	58	S	Old Coal Level	1903
1105DE	59	S	Unspecified Ground Workings	1914
1106DE	59	S	Unspecified Ground Workings	1914
1107DB	59	S	Unspecified Pit	1948
1108CS	60	S	Unspecified Pit	1876
1109CK	60	N	Cuttings	1877
1110CP	60	SE	Unspecified Ground Workings	1914
1111CP	60	SE	Unspecified Ground Workings	1914
1112DH	61	NW	Unspecified Heap	1948
1113DH	61	NW	Unspecified Ground Workings	1914
1114DH	61	NW	Unspecified Ground Workings	1914
1115DH	61	NW	Unspecified Heaps	1921
1116DE	63	S	Unspecified Ground Workings	1921
1117DH	64	NW	Unspecified Heaps	1921
1118DH	64	NW	Unspecified Heaps	1921
1119BC	64	S	Unspecified Ground	1921

			Workings	
1120BC	64	S	Unspecified Ground Workings	1921
1121CS	64	S	Unspecified Pit	1877
1122CN	65	S	Unspecified Old Quarries	1903
1123CD	66	S	Unspecified Heap	1948
1124CS	66	S	Unspecified Pit	1903
1125CP	66	SE	Unspecified Ground Workings	1921
1126CS	66	S	Unspecified Pit	1901
1127DE	67	SW	Unspecified Ground Workings	1921
1128DH	68	NW	Unspecified Heap	1877
1129DE	70	SW	Unspecified Ground Workings	1948
1130CD	71	S	Unspecified Ground Workings	1965
1131CD	71	S	Unspecified Ground Workings	1987
1132CS	71	S	Unspecified Heap	1876
1133CS	72	S	Unspecified Heap	1877
1134DE	72	S	Unspecified Heap	1877
1135CP	72	SE	Unspecified Ground Workings	1921
1136BC	73	S	Unspecified Heap	1948
1137CS	73	S	Unspecified Pit	1921
1138CS	73	S	Unspecified Pit	1921
1139DI	74	NE	Unspecified Ground Workings	1876
1140CS	74	S	Unspecified Pit	1948
1141DI	74	NE	Unspecified Ground Workings	1962
1142CS	75	S	Unspecified Pit	1914
1143CS	75	S	Unspecified Pit	1914
1144CY	77	NW	Unspecified Ground Workings	1914
1145DD	78	N	Unspecified Pit	1921
1146DI	78	NE	Unspecified Ground Workings	1921
1147DI	78	NE	Unspecified Ground Workings	1921
1148CS	78	S	Unspecified Heap	1921
1149DE	79	S	Unspecified Pit	1948
1150CY	79	NW	Unspecified Ground Workings	1965
1151BC	80	S	Unspecified Heap	1948
1152DJ	80	SE	Old Shafts (Coal)	1914
1153DJ	80	SE	Old Shafts (Coal)	1914
1154DK	80	NW	Unspecified Ground Workings	1921
1155DK	80	NW	Unspecified Ground	1921

			Workings	
1156DJ	81	SE	Old Coal Shafts	1921
1157DK	81	NW	Unspecified Ground Workings	1921
1158DH	82	NW	Unspecified Pit	1877
1159DI	82	NE	Unspecified Pit	1877
1160DJ	82	SE	Old Clay Pit	1877
1161DD	83	N	Old Coal Shaft	1921
1162DI	83	NE	Unspecified Ground Workings	1877
1163DJ	83	SE	Unspecified Pit	1948
1164DJ	83	SE	Unspecified Old Shafts	1903
1165FV	83	NE	Cuttings	1877
1166DJ	84	SE	Old Clay Pit	1901
1167DD	84	N	Disused Old Coal Pit	1877
1168DD	84	N	Old Coal Pit	1901
1169DG	84	S	Unspecified Pit	1921
1170DD	85	N	Unspecified Heap	1921
1171DD	85	N	Unspecified Old Shaft	1903
1172DG	85	S	Old Trial Drift	1948
1173DG	86	S	Old Trial Drift	1921
1174DG	86	S	Old Trial Drift	1921
1175DG	86	S	Unspecified Drift	1876
1176DE	86	SW	Refuse Heap	1965
1177BC	86	S	Unspecified Ground Workings	1921
1178CY	87	NW	Unspecified Heaps	1903
1179DD	88	N	Old Coal Shaft	1921
1180DI	88	NE	Unspecified Ground Workings	1948
1181DI	88	NE	Unspecified Ground Workings	1903
1182DI	89	NE	Unspecified Ground Workings	1900
1183DG	90	S	Unspecified Drift	1877
1184DD	91	N	Unspecified Pit	1914
1185DD	91	N	Unspecified Pit	1914
1186DG	91	S	Old Trial Drift	1921
1187DD	91	N	Unspecified Pit	1948
1188DD	91	N	Unspecified Pit	1921
1189DD	91	N	Unspecified Pit	1921
1190DJ	91	SE	Unspecified Pit	1921
1191DL	93	N	Old Coal Shaft	1921
1192DI	93	NE	Unspecified Ground Workings	1921
1193DL	94	N	Old Coal Shaft	1948
1194DL	94	N	Old Shafts (Coal)	1914
1195DL	94	N	Old Shafts (Coal)	1914

1196BD	95	SE	Unspecified Pit	1877
1197BD	95	SE	Unspecified Pit	1948
1198DM	95	SE	Cuttings	1921
1199DM	96	SE	Cuttings	1877
1200DI	100	NE	Unspecified Ground Workings	1921
1201DI	100	NE	Unspecified Pit	1948
1202DM	101	SE	Cuttings	1914
1203DM	101	SE	Cuttings	1914
1204DT	101	W	Unspecified Ground Workings	1876
1205DM	102	SE	Cuttings	1921
1206DN	102	NW	Old Ironstone Levels	1914
1207DM	102	SE	Cuttings	1948
1208DN	103	NW	Old Ironstone Levels	1921
1209BD	104	SE	Unspecified Pit	1965
1210DD	104	N	Old Coal Shafts	1921
1211DN	106	NW	Unspecified Old Levels	1903
1212DN	106	NW	Old Ironstone Levels	1948
1213DI	106	NE	Unspecified Ground Workings	1921
1214DN	106	NW	Old Ironstone Levels	1921
1215DO	106	NE	Unspecified Heap	1903
1216DO	106	NE	Unspecified Ground Workings	1921
1217DO	107	NE	Unspecified Ground Workings	1877
1218DN	107	NW	Unspecified Pit	1965
1219CZ	108	S	Unspecified Heap	1965
1220DJ	108	N	Old Coal Shafts	1921
1221DO	108	NE	Unspecified Heap	1900
1222GD	109	NW	Old Gravel Pit	1877
1223DQ	109	N	Unspecified Heap	1903
1224DM	109	SE	Cuttings	1921
1225DN	109	NW	Old Ironstone Level	1877
1226DO	110	NE	Unspecified Heap	1948
1227DO	112	NE	Unspecified Ground Workings	1876
1228DV	112	NW	Unspecified Drifts	1948
1229CZ	113	S	Unspecified Ground Workings	1965
1230CZ	113	S	Unspecified Ground Workings	1987
1231DS	113	S	Unspecified Ground Workings	1876
1232DD	114	N	Old Coal Pit	1901
1233BD	114	SE	Unspecified Pit	1948
1234BD	114	SE	Old Shafts (Coal)	1914
1235BD	114	SE	Old Shafts (Coal)	1914

1236BD	114	SE	Unspecified Pit	1877
1237DD	114	N	Old Coal Shafts	1948
1238DD	114	N	Unspecified Old Shafts	1903
1239DP	115	S	Unspecified Ground Workings	1914
1240DP	115	S	Unspecified Ground Workings	1914
1241DQ	115	N	Unspecified Heap	1877
1242DD	115	N	Old Coal Shafts	1921
1243DR	120	NW	Cuttings	1877
1244DS	120	S	Unspecified Ground Workings	1876
1245DS	122	S	Unspecified Heaps	1876
1246DD	123	N	Cuttings	1877
1247DT	123	S	Lime Kiln	1876
1248DP	124	S	Unspecified Pit	1965
1249BD	124	SE	Unspecified Pit	1921
1250DD	125	N	Old Coal Shafts	1921
1251CP	126	S	Lime Kiln	1877
1252DD	126	N	Old Coal Shafts	1921
1253DS	127	S	Unspecified Heap	1876
1254DP	127	S	Unspecified Old Quarry	1901
1255DX	128	N	Cuttings	1903
1256DP	129	S	Unspecified Pit	1903
1257DY	129	NW	Colliery	1921
1258DT	130	SW	Old Coal Pit	1921
1259DT	130	SW	Old Coal Pit	1921
1260DT	130	SW	Old Coal Pit	1914
1261DT	130	SW	Old Coal Pit	1914
1262DP	131	S	Unspecified Ground Workings	1914
1263DP	131	S	Unspecified Ground Workings	1914
1264DO	132	NE	Unspecified Heap	1900
1265DT	132	SW	Old Coal Pit	1921
1266DD	132	N	Old Shafts (Coal)	1914
1267DD	132	N	Old Shafts (Coal)	1914
1268DD	132	N	Old Coal Shafts	1948
1269DT	133	SW	Old Coal Pit	1921
1270DT	134	SW	Old Coal Pit	1948
1271DT	134	SW	Old Coal Pit	1903
1272DN	134	NW	Old Ironstone Levels	1921
1273DT	135	SW	Old Coal Pit	1901
1274DD	135	N	Old Coal Shafts	1921
1275DN	136	NW	Unspecified Heap	1965
1276DN	138	NW	Old Ironstone Levels	1921
1277DJ	139	SE	Unspecified Pit	1877

1278CW	140	N	Railway Sidings	1965
1279DU	141	NE	Unspecified Heap	1914
1280DU	142	NE	Unspecified Ground Workings	1921
1281DU	142	NE	Unspecified Ground Workings	1921
1282DS	144	S	Unspecified Pit	1948
1283DS	145	S	Unspecified Ground Workings	1921
1284DU	145	NE	Unspecified Ground Workings	1921
1285DV	145	NW	Unspecified Pit	1965
1286DU	145	NE	Unspecified Pit	1903
1287DU	145	NE	Old Ironstone Quarry	1877
1288DE	145	SW	Old Coal Level	1901
1289DW	146	NW	Unspecified Ground Workings	1903
1290DW	146	NW	Unspecified Ground Workings	1921
1291DU	146	NE	Unspecified Pit	1948
1292DW	146	NW	Unspecified Ground Workings	1900
1293DS	147	S	Unspecified Pit	1921
1294DS	147	S	Unspecified Pit	1921
1295DX	147	N	Cuttings	1903
1296DW	149	NW	Unspecified Ground Workings	1948
1297DW	150	NW	Unspecified Ground Workings	1921
1298DW	150	NW	Unspecified Ground Workings	1921
1299DW	150	NW	Unspecified Ground Workings	1921
1300DU	152	NE	Unspecified Heap	1948
1301DS	154	S	Unspecified Ground Workings	1876
1302DJ	154	N	Unspecified Pit	1877
1303DS	154	S	Old Coal Level	1903
1304DY	156	NW	Colliery	1914
1305DW	156	NW	Unspecified Ground Workings	1877
1306EI	157	S	Refuse Heap	1965
1307DU	158	NE	Unspecified Pit	1965
1308DY	158	NW	Colliery	1921
1309DY	158	NW	Colliery	1921
1310DZ	158	SE	Cuttings	1877
1311DJ	158	N	Old Coal Shafts	1948
1312DU	159	NE	Unspecified Pit	1987
1313DZ	164	SE	Cuttings	1876
1314DS	164	S	Old Coal Level	1900

1315DS	165	S	Old Coal Level	1903
1316DY	166	NW	Railway Sidings	1921
1317DY	169	NW	Railway Sidings	1914
1318DV	169	NW	Unspecified Drift	1914
1319DN	169	NW	Old Ironstone Levels	1921
1320DE	172	SW	Unspecified Pit	1921
1321DE	172	SW	Unspecified Pit	1921
1322GG	172	S	Refuse Heap	1948
1323DN	172	NW	Old Ironstone Levels	1921
1324DN	172	NW	Unspecified Old Levels	1903
1325DN	172	NW	Old Ironstone Levels	1948
1326DE	173	SW	Unspecified Pit	1948
1327DV	173	NW	Unspecified Drifts	1921
1328DY	173	NW	Railway Sidings	1921
1329DE	173	SW	Unspecified Pit	1921
1330DN	176	NW	Old Ironstone Level	1877
1331EA	176	SE	Old Coal Level	1903
1332EC	176	NW	Unspecified Ground Workings	1965
1333EA	180	SE	Unspecified Heap	1921
1334EA	180	SE	Unspecified Heap	1921
1335EB	180	S	Unspecified Ground Workings	1965
1336EB	180	S	Unspecified Ground Workings	1987
1337EA	180	SE	Old Level (Coal)	1914
1338EA	180	SE	Old Level (Coal)	1914
1339EA	180	SE	Unspecified Heap	1876
1340EA	181	SE	Unspecified Heap	1948
1341EA	181	SE	Unspecified Heap	1877
1342EA	181	SE	Old Coal Level	1921
1343DG	181	SE	Burial Ground	1876
1344DK	183	NW	Unspecified Heap	1965
1345DK	183	NW	Unspecified Heap	1987
1346DG	183	SE	Burial Ground	1877
1347EA	183	SW	Old Coal Level	1921
1348EA	183	SW	Old Coal Level	1921
1349EA	184	SW	Old Coal Level	1948
1350EA	186	SW	Old Coal Level	1921
1351DY	189	NW	Unspecified Ground Workings	1914
1352DY	189	NW	Unspecified Ground Workings	1921
1353DY	189	NW	Unspecified Ground Workings	1921
1354DW	189	W	Unspecified Heap	1921
1355DY	191	NW	Unspecified Pit	1948
1356DY	191	NW	Unspecified Pit	1903

1357EA	191	SE	Unspecified Heap	1921
1358DY	191	NW	Unspecified Ground Workings	1965
1359DW	191	W	Unspecified Heap	1948
1360DN	192	NW	Old Ironstone Levels	1914
1361DY	192	NW	Colliery	1903
1362DN	193	NW	Old Ironstone Levels	1921
1363DY	193	NW	Unspecified Old Quarry	1877
1364DY	193	NW	Unspecified Ground Workings	1921
1365DV	194	NW	Engine House	1914
1366DY	194	NW	Refuse Heap	1921
1367DY	194	NW	Refuse Heaps	1921
1368DY	194	NW	Refuse Heaps	1921
1369DV	194	NW	Engine House	1921
1370GF	194	N	Unspecified Old Quarries	1877
1371DY	195	NW	Unspecified Pit	1965
1372EC	197	NW	Unspecified Drifts	1948
1373DV	197	NW	Engine House	1921
1374ED	197	S	Unspecified Heap	1876
1375DN	197	NW	Old Ironstone Levels	1921
1376DN	199	NW	Unspecified Heap	1965
1377EC	200	NW	Railway Sidings	1903
1378DV	200	NW	Unspecified Drift	1914
1379ED	200	S	Unspecified Heap	1877
1380DV	201	NW	Unspecified Drifts	1921
1381EE	203	NW	Unspecified Pit	1900
1382EE	205	NW	Unspecified Pit	1877
1383DV	206	NW	Unspecified Drifts	1921
1384EF	207	S	Unspecified Heap	1876
1385DY	208	NW	Unspecified Ground Workings	1948
1386EF	210	S	Unspecified Pit	1914
1387EF	210	S	Unspecified Pit	1914
1388EF	210	S	Unspecified Heap	1921
1389EF	210	S	Unspecified Heap	1921
1390EF	210	S	Unspecified Heap	1921
1391EF	211	S	Unspecified Heap	1948
1392EF	211	S	Unspecified Heap	1877
1393DY	213	NW	Unspecified Ground Workings	1965
1394DN	213	NW	Old Ironstone Levels	1914
1395DN	213	NW	Unspecified Ground Workings	1921
1396DN	213	NW	Unspecified Ground Workings	1921
1397DN	218	NW	Old Ironstone Levels	1921
1398CW	219	NE	Unspecified Pit	1903

1399EF	219	S	Unspecified Heap	1921
1400EG	220	NW	Unspecified Heaps	1903
1401EG	220	NW	Old Ironstone Levels	1948
1402EG	221	NW	Unspecified Pit	1965
1403EG	222	NW	Unspecified Old Level	1903
1404EG	222	NW	Old Ironstone Level	1877
1405DV	227	NW	Unspecified Drifts	1921
1406EH	227	S	Cemetery	1948
1407EH	229	S	Cemetery	1964
1408EH	229	S	Cemetery	1980
1409EH	229	S	Cemetery	1981
1410EC	236	NW	Unspecified Heap	1921
1411EC	236	NW	Unspecified Heap	1921
1412EC	236	NW	Unspecified Ground Workings	1914
1413EG	237	NW	Unspecified Ground Workings	1921
1414EF	238	S	Unspecified Pits	1876
1415EC	238	NW	Unspecified Ground Workings	1921
1416EF	238	S	Unspecified Pit	1964
1417EF	238	S	Unspecified Pit	1988
1418EF	239	SE	Unspecified Pit	1903
1419EF	239	SE	Unspecified Pit	1877
1420EF	239	SE	Unspecified Pit	1921
1421DY	239	NW	Railway Sidings	1948
1422EF	240	SE	Unspecified Old Quarry	1901
1423EF	240	SE	Unspecified Ground Workings	1921
1424EF	240	SE	Unspecified Ground Workings	1921
1425EF	240	S	Unspecified Ground Workings	1914
1426EF	240	S	Unspecified Ground Workings	1914
1427EF	240	S	Unspecified Ground Workings	1948
1428EC	240	NW	Unspecified Ground Workings	1965
1429EI	242	S	Cuttings	1948
1430EJ	242	S	Cuttings	1903
1431EJ	242	S	Cuttings	1877
1432EJ	243	S	Cuttings	1914
1433EJ	243	S	Cuttings	1914
1434EJ	243	S	Cuttings	1901
1435EJ	245	S	Cuttings	1921
1436EF	245	SE	Unspecified Ground Workings	1988
1437EF	245	SE	Unspecified Ground Workings	1964

1438EC	246	NW	Unspecified Ground Workings	1948
1439EF	247	SE	Unspecified Pit	1877
1440EG	248	NW	Unspecified Heap	1965
1441EJ	249	S	Cuttings	1921
1442ER	249	NE	Cuttings	1877
1443EF	249	S	Unspecified Ground Workings	1921
1444EJ	250	S	Cuttings	1921
1445EK	251	SE	Railway Sidings	1964
1446EK	251	SE	Railway Sidings	1980
1447EL	252	NW	Brick Works	1914
1448EL	252	NW	Brick Works	1914
1449	257	SE	Railway Sidings	1981
1450EG	268	NW	Unspecified Old Quarry	1877
1451ED	269	S	Old Coal Drift	1921
1452EG	269	NW	Old Ironstone Level	1914
1453ED	270	S	Old Coal Drift	1921
1454ED	270	S	Old Coal Drift	1921
1455EG	270	NW	Old Ironstone Level	1921
1456EG	271	NW	Unspecified Pit	1965
1457ED	271	S	Old Coal Drift	1948
1458ED	272	S	Old Coal Drift	1914
1459ED	272	S	Old Coal Drift	1914
1460EG	272	NW	Old Ironstone Level	1948
1461EG	275	NW	Old Ironstone Level	1921
1462EM	276	N	Unspecified Pit	1903
1463EG	280	NW	Unspecified Old Level	1903
1464ED	283	S	Old Coal Drift	1921
1465EM	286	N	Unspecified Old Quarry	1877
1466EJ	287	S	Unspecified Ground Workings	1914
1467EJ	287	S	Unspecified Ground Workings	1914
1468EJ	288	S	Unspecified Heap	1921
1469EJ	288	S	Unspecified Heap	1921
1470EJ	289	S	Unspecified Heap	1948
1471EJ	290	S	Unspecified Heap	1921
1472DU	290	NE	Old Ironstone Level	1948
1473EN	291	S	Refuse Heaps	1964
1474EN	291	S	Refuse Heaps	1988
1475EO	293	NW	Unspecified Old Quarry	1948
1476EO	293	NW	Unspecified Old Quarry	1903
1477ET	294	SE	Old Coal Drift	1901
1478EP	295	N	Unspecified Mill	1921
1479EP	295	N	Unspecified Mill	1921
1480ED	297	SE	Unspecified Ground	1914

			Workings	
1481ED	297	SE	Unspecified Ground Workings	1914
1482DU	298	NE	Old Ironstone Level	1921
1483EP	300	N	Unspecified Mill	1921
1484EQ	302	S	Refuse Heap	1964
1485EQ	302	S	Refuse Heap	1988
1486EQ	302	S	Railway Sidings	1964
1487EQ	302	S	Railway Sidings	1988
1488ER	302	NE	Cuttings	1914
1489FI	303	N	Railway Sidings	1962
1490ER	304	NE	Cuttings	1948
1491ER	304	NE	Cuttings	1877
1492ER	304	NE	Cuttings	1903
1493EP	304	N	Unspecified Mill	1914
1494ES	306	S	Refuse Heap	1964
1495ES	306	S	Refuse Heap	1988
1496GH	307	N	Unspecified Pit	1877
1497EU	308	NW	Old Ironstone Level	1948
1498ET	310	S	Unspecified Old Quarries	1901
1499EP	310	N	Mill Pond	1903
1500EP	310	N	Mill Pond	1877
1501ES	312	S	Refuse Heap	1964
1502ES	312	S	Refuse Heap	1988
1503EC	313	NW	Unspecified Heap	1903
1504EJ	313	S	Unspecified Pit	1877
1505ET	313	S	Unspecified Pit	1914
1506ET	313	S	Unspecified Pit	1914
1507ET	315	S	Unspecified Heap	1948
1508ET	315	S	Unspecified Ground Workings	1921
1509ET	315	S	Unspecified Ground Workings	1921
1510ET	315	S	Unspecified Ground Workings	1921
1511ET	315	SE	Unspecified Heaps	1876
1512ET	315	S	Unspecified Heap	1903
1513ET	316	S	Unspecified Ground Workings	1876
1514ET	317	SE	Unspecified Heap	1903
1515ET	318	SE	Unspecified Heap	1948
1516ET	318	S	Unspecified Heap	1964
1517ET	318	S	Unspecified Heap	1988
1518EU	318	NW	Unspecified Ground Workings	1914
1519EU	318	NW	Unspecified Ground Workings	1914
1520ET	319	S	Unspecified Ground	1877

			Workings	
1521EO	319	NW	Unspecified Ground Workings	1914
1522ET	319	S	Old Coal Drift	1903
1523EO	320	NW	Unspecified Pit	1921
1524EO	320	NW	Unspecified Pit	1921
1525ET	322	S	Unspecified Ground Workings	1921
1526EO	322	NW	Unspecified Pit	1921
1527EO	323	NW	Unspecified Pit	1903
1528EO	323	NW	Unspecified Pit	1948
1529EU	324	NW	Unspecified Pit	1921
1530EU	324	NW	Unspecified Pit	1921
1531EZ	325	NE	Old Ironstone Level	1877
1532EU	325	NW	Old Ironstone Level	1914
1533EU	325	NW	Old Ironstone Level	1914
1534EU	325	NW	Unspecified Pit	1903
1535EU	325	NW	Unspecified Pit	1948
1536EU	326	NW	Unspecified Pit	1921
1537EU	326	NW	Disused Old Ironstone Level	1877
1538EU	326	NW	Unspecified Pit	1901
1539EO	329	NW	Unspecified Pit	1965
1540EP	330	N	Unspecified Mill	1948
1541EP	330	N	Unspecified Mill	1903
1542EP	330	N	Unspecified Mill	1877
1543EV	334	NE	Unspecified Heap	1921
1544EV	334	NE	Unspecified Heap	1921
1545EW	334	NW	Unspecified Ground Workings	1914
1546EW	334	NW	Unspecified Ground Workings	1921
1547EW	334	NW	Unspecified Ground Workings	1921
1548EV	335	NE	Unspecified Heap	1914
1549FB	335	NE	Cuttings	1877
1550ET	336	S	Unspecified Pit	1948
1551EV	336	NE	Unspecified Ground Workings	1921
1552EY	337	S	Unspecified Heap	1877
1553	337	SE	Mineral Railway Sidings	1948
1554EO	338	NW	Unspecified Old Quarry	1914
1555ET	338	S	Unspecified Pit	1903
1556EV	339	NE	Unspecified Heap	1948
1557EV	339	NE	Unspecified Heap	1903
1558EV	339	NE	Old Ironstone Quarry	1877
1559EO	339	NW	Unspecified Old Quarry	1921
1560EW	339	NW	Unspecified Ground	1948

			Workings	
1561EW	340	NW	Unspecified Old Quarry	1877
1562EO	340	NW	Unspecified Old Quarry	1921
1563EQ	340	S	Unspecified Pit	1988
1564EQ	340	S	Unspecified Pit	1964
1565EW	341	NW	Unspecified Ground Workings	1903
1566EW	343	NW	Unspecified Heap	1965
1567FM	343	SE	Mineral Railway Sidings	1921
1568EO	343	NW	Colliery	1877
1569EV	347	NE	Unspecified Pit	1921
1570EV	347	NE	Unspecified Pit	1921
1571EO	348	NW	Unspecified Quarry	1965
1572EV	349	NE	Unspecified Pit	1903
1573EV	349	NE	Unspecified Pit	1948
1574EV	349	NE	Unidentified Pit	1914
1575EQ	350	S	Unspecified Old Quarries	1901
1576EX	352	S	Unspecified Ground Workings	1876
1577EQ	353	S	Unspecified Pit	1914
1578EQ	353	S	Unspecified Pit	1914
1579EQ	353	S	Unspecified Pits	1921
1580EQ	353	S	Unspecified Pits	1921
1581EQ	353	S	Unspecified Pits	1921
1582EV	353	NE	Unspecified Pit	1877
1583EQ	353	S	Unspecified Heap	1948
1584EQ	353	S	Unspecified Heap	1903
1585EU	354	NW	Old Ironstone Level	1921
1586EX	354	S	Unspecified Ground Workings	1921
1587EQ	354	S	Unspecified Ground Workings	1877
1588EX	355	S	Unspecified Ground Workings	1914
1589EX	355	S	Unspecified Ground Workings	1914
1590EQ	355	S	Unspecified Heaps	1876
1591EY	355	S	Old Coal Level	1901
1592EX	355	S	Unspecified Ground Workings	1948
1593EZ	355	NE	Unspecified Disused Level	1987
1594EX	356	S	Unspecified Ground Workings	1903
1595EU	356	NW	Unspecified Old Level	1903
1596EX	356	S	Unspecified Ground Workings	1921
1597EX	356	S	Unspecified Ground Workings	1921
1598EX	357	S	Unspecified Ground Workings	1877

1599EU	357	NW	Old Ironstone Level	1921
1600EU	358	NW	Unspecified Ground Workings	1914
1601EU	358	NW	Unspecified Ground Workings	1914
1602EU	358	NW	Disused Old Ironstone Level	1901
1603EU	359	NW	Old Ironstone Level	1921
1604FA	361	W	Unspecified Disused Shaft	1965
1605EU	361	NW	Unspecified Pit	1948
1606EX	361	S	Unspecified Heap	1964
1607EX	361	S	Unspecified Heap	1988
1608FA	362	W	Old Ironstone Shaft	1921
1609EQ	362	S	Unspecified Ground Workings	1921
1610EU	362	NW	Unspecified Pit	1965
1611EU	362	NW	Unspecified Pit	1921
1612FA	363	W	Old Ironstone Shaft	1921
1613FA	364	W	Old Ironstone Shaft	1921
1614FB	364	NE	Old Ironstone Level	1914
1615FA	364	W	Old Ironstone Level	1914
1616FA	364	W	Old Ironstone Level	1914
1617FA	366	W	Old Ironstone Pit	1901
1618EZ	366	NE	Old Ironstone Level	1921
1619EX	367	S	Unspecified Ground Workings	1921
1620EZ	367	NE	Unspecified Tank	1903
1621FA	367	W	Unspecified Old Shaft	1903
1622FA	367	W	Old Ironstone Shaft	1948
1623FA	367	W	Old Limestone Pit	1877
1624ET	367	SE	Old Level (Coal)	1914
1625ET	367	SE	Old Level (Coal)	1914
1626EX	368	S	Unspecified Ground Workings	1988
1627EX	368	S	Unspecified Ground Workings	1964
1628FC	376	W	Unspecified Pit	1921
1629FC	378	W	Unspecified Heap	1914
1630FC	378	W	Unspecified Heap	1914
1631FC	379	W	Unspecified Heap	1877
1632EQ	379	S	Unspecified Pit	1877
1633FC	379	W	Unspecified Heap	1948
1634FC	380	W	Unspecified Heap	1921
1635FC	380	W	Unspecified Heap	1921
1636FD	383	N	Unspecified Heap	1900
1637FD	387	N	Unspecified Heap	1877
1638FD	387	N	Unspecified Heap	1948
1639EQ	388	S	Unspecified Pit	1948

1640EQ	388	S	Unspecified Pit	1903
1641EZ	388	NE	Unspecified Old Level	1903
1642FD	388	N	Unspecified Heap	1921
1643FD	388	N	Unspecified Heap	1921
1644FD	388	N	Unspecified Heap	1921
1645EQ	389	S	Unspecified Pit	1914
1646EQ	389	S	Unspecified Pit	1914
1647EQ	389	S	Unspecified Pit	1948
1648FE	390	SW	Cuttings	1876
1649FD	391	N	Unspecified Heap	1921
1650FE	392	SW	Cuttings	1877
1651FC	392	W	Unspecified Heap	1965
1652FC	392	W	Unspecified Heap	1987
1653EQ	393	S	Unspecified Pit	1876
1654FG	394	E	Unspecified Old Quarries	1903
1655EW	394	NW	Unspecified Heap	1914
1656FF	394	S	Refuse Heap	1964
1657FF	394	S	Refuse Heap	1988
1658FG	395	E	Old Ironstone Quarry	1877
1659FH	397	S	Unspecified Ground Workings	1877
1660EQ	398	S	Unspecified Ground Workings	1988
1661EQ	398	S	Unspecified Ground Workings	1964
1662EU	399	NW	Unspecified Ground Workings	1921
1663EW	399	NW	Unspecified Heap	1948
1664EW	399	NW	Unspecified Heap	1903
1665EQ	400	S	Unspecified Old Quarries	1901
1666EQ	400	S	Unspecified Pit	1921
1667FH	400	S	Unspecified Ground Workings	1921
1668EQ	400	S	Old Coal Level	1948
1669EL	400	NW	Disused Old Ironstone Level	1877
1670FH	400	S	Unspecified Heap	1914
1671FH	400	S	Unspecified Heap	1914
1672EW	401	NW	Unspecified Heap	1965
1673EQ	401	S	Old Coal Level	1921
1674EQ	401	S	Old Coal Level	1921
1675EU	402	NW	Unspecified Pit	1903
1676FE	402	SW	Cuttings	1914
1677FE	402	SW	Cuttings	1914
1678EQ	403	S	Old Coal Level	1903
1679EU	403	NW	Unspecified Pit	1901
1680EU	404	NW	Unspecified Pit	1965
1681EU	404	NW	Unspecified Ground	1914

			Workings	
1682EU	404	NW	Unspecified Ground Workings	1914
1683FE	404	SE	Cuttings	1948
1684EL	404	NW	Brick Works	1921
1685EL	404	NW	Unspecified Ground Workings	1921
1686EL	404	NW	Brick Works	1921
1687EL	404	NW	Unspecified Ground Workings	1921
1688EX	405	SE	Old Coal Level	1921
1689EL	405	NW	Unspecified Ground Workings	1948
1690FI	405	N	Unspecified Tank	1877
1691EL	406	NW	Unspecified Ground Workings	1921
1692FE	408	SE	Cuttings	1921
1693FH	408	S	Unspecified Ground Workings	1921
1694FE	410	SE	Cuttings	1921
1695FE	412	SW	Cuttings	1921
1696FJ	413	SE	Old Coal Level	1921
1697FJ	414	SE	Old Coal Level	1948
1698EU	414	NW	Unspecified Heap	1921
1699FK	415	E	Unspecified Ground Workings	1948
1700FI	415	N	Railway Sidings	1900
1701FK	415	E	Unspecified Ground Workings	1921
1702FK	415	E	Unspecified Ground Workings	1921
1703FJ	417	SE	Old Coal Level	1921
1704FJ	417	SE	Old Coal Level	1921
1705EU	417	NW	Unspecified Heap	1877
1706FJ	417	SE	Old Coal Level	1921
1707FI	418	N	Railway Sidings	1948
1708FI	418	N	Railway Sidings	1903
1709EU	420	NW	Unspecified Heap	1948
1710FI	420	N	Railway Sidings	1921
1711EU	420	NW	Unspecified Heap	1921
1712EU	420	NW	Unspecified Heap	1921
1713FI	420	N	Railway Buildings	1977
1714FI	420	N	Railway Buildings	1962
1715FI	420	N	Railway Buildings	1948
1716FI	420	N	Railway Buildings	1903
1717FL	421	N	Railway Sidings	1965
1718FI	421	N	Railway Buildings	1900
1719FI	424	N	Railway Building	1921
1720FI	424	N	Railway Buildings	1877

1721FK	425	E	Old Ironstone Quarry	1877
1722FK	425	E	Unspecified Ground Workings	1903
1723FI	426	N	Junction Station	1921
1724FI	427	N	Railway Sidings	1921
1725FL	427	N	Railway Station	1921
1726FI	428	N	Railway Building	1921
1727FA	429	W	Unspecified Pit	1901
1728FI	430	N	Railway Sidings	1877
1729GK	430	W	Old Coal Pit	1877
1730FK	431	E	Unspecified Ground Workings	1921
1731GJ	431	W	Unspecified Ground Workings	1903
1732FD	432	NW	Unspecified Drift	1948
1733FK	434	E	Unspecified Ground Workings	1914
1734FK	434	E	Unspecified Ground Workings	1914
1735FA	434	W	Unspecified Heap	1914
1736FA	434	W	Unspecified Heap	1914
1737EW	439	NW	Unspecified Pit	1877
1738FM	440	SE	Railway Sidings	1903
1739FI	440	N	Railway Buildings	1962
1740FL	440	N	Railway Sidings	1914
1741FL	440	N	Railway Sidings	1914
1742FI	440	N	Railway Building	1962
1743FN	441	NE	Unspecified Ground Workings	1977
1744FL	441	N	Railway Sidings	1877
1745FN	441	NE	Unspecified Ground Workings	1877
1746FL	444	N	Railway Sidings	1948
1747FP	444	NE	Cuttings	1877
1748EW	445	NW	Unspecified Ground Workings	1965
1749EW	445	NW	Unspecified Ground Workings	1903
1750EW	445	NW	Unspecified Ground Workings	1948
1751FL	445	N	Railway Sidings	1921
1752FL	445	N	Railway Sidings	1921
1753FL	446	N	Railway Sidings	1921
1754FN	447	NE	Unspecified Ground Workings	1962
1755FI	448	NE	Cuttings	1877
1756FN	448	NE	Unspecified Ground Workings	1921
1757FN	451	NE	Unspecified Ground Workings	1921

1758FN	451	NE	Unspecified Ground Workings	1921
1759FM	451	SE	Tramway Sidings	1900
1760FN	453	NE	Unspecified Ground Workings	1900
1761FN	454	NE	Unspecified Ground Workings	1903
1762EW	455	NW	Unspecified Heap	1877
1763FL	458	N	Colliery	1914
1764FL	458	N	Colliery	1914
1765EX	461	SE	Old Coal Level	1921
1766FL	462	N	Colliery	1921
1767FL	462	N	Colliery	1921
1768FL	463	N	Colliery	1921
1769FO	463	S	Old Coal Level	1921
1770FI	464	N	Railway Building	1962
1771FO	465	S	Old Coal Level	1921
1772FO	466	S	Old Coal Level	1948
1773FI	466	N	Railway Building	1948
1774FM	466	S	Ambulance Station	1981
1775FI	466	N	Railway Building	1921
1776FO	467	S	Old Coal Level	1921
1777FO	467	S	Old Coal Level	1921
1778FG	467	E	Unspecified Heap	1948
1779FH	469	S	Unspecified Ground Workings	1948
1780FG	470	E	Unspecified Ground Workings	1921
1781FG	470	E	Unspecified Ground Workings	1914
1782FG	470	E	Unspecified Ground Workings	1914
1783FG	470	E	Unspecified Heap	1921
1784FG	470	E	Unspecified Heap	1921
1785FS	471	E	Unspecified Heap	1877
1786EW	471	NW	Cuttings	1921
1787FL	471	N	Unspecified Drift	1921
1788FN	472	NE	Unspecified Tank	1877
1789FL	472	NW	Refuse Heap	1987
1790FL	473	N	Railway Building	1921
1791FL	473	N	Railway Building	1921
1792FH	474	S	Unspecified Ground Workings	1921
1793FH	474	S	Unspecified Ground Workings	1921
1794FN	476	NE	Unspecified Ground Workings	1877
1795GI	478	NW	Unspecified Old Quarry	1877
1796FH	479	S	Unspecified Ground Workings	1988

1797FH	479	S	Unspecified Ground Workings	1964
1798FP	480	NE	Cuttings	1921
1799FQ	481	S	Unspecified Ground Workings	1921
1800FQ	483	S	Unspecified Ground Workings	1921
1801FH	484	S	Unspecified Ground Workings	1903
1802FH	485	S	Unspecified Ground Workings	1876
1803FQ	485	S	Old Coal Level	1948
1804FQ	485	S	Unspecified Heap	1921
1805FQ	485	S	Unspecified Heap	1921
1806FK	486	E	Unspecified Ground Workings	1921
1807FQ	487	S	Unspecified Ground Workings	1876
1808FQ	487	S	Old Coal Level	1900
1809FP	488	NE	Cuttings	1903
1810FP	488	NE	Cuttings	1948
1811FL	488	N	Unspecified Heap	1965
1812FQ	489	S	Old Coal Level	1903
1813FR	491	N	Unspecified Ground Workings	1903
1814FR	491	N	Old Ironstone Quarry	1877
1815FS	491	E	Unspecified Heap	1948
1816FK	491	E	Unspecified Ground Workings	1914
1817FK	491	E	Unspecified Ground Workings	1914
1818FG	492	E	Unspecified Heap	1965
1819FG	492	E	Unspecified Heap	1987
1820FR	493	N	Refuse Heap	1914
1821FR	493	N	Refuse Heap	1914
1822FG	493	E	Unspecified Heap	1903
1823EX	493	SE	Unspecified Pit	1988
1824EX	493	SE	Unspecified Pit	1964
1825FG	494	E	Unspecified Ground Workings	1921
1826FG	494	E	Unspecified Ground Workings	1921
1827FS	496	E	Unspecified Ground Workings	1921
1828FS	496	E	Unspecified Ground Workings	1921
1829FS	496	E	Unspecified Heap	1877
1830FS	496	E	Unspecified Heap	1903
1831FR	497	N	Refuse Heap	1948
1832FO	497	S	Unspecified Ground Workings	1921

1833FO	497	S	Unspecified Ground Workings	1921
1834FO	498	S	Old Coal Level	1948
1835FR	499	N	Refuse Heap	1921
1836FR	499	N	Refuse Heap	1921
1837FO	499	S	Unspecified Ground Workings	1921
1838FO	499	S	Unspecified Ground Workings	1921

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 34

ID	Distance (m)	Direction	Use	Date
1839FW	0	On Site	Unspecified Tank	1996
1840CF	0	On Site	Tanks	1997
1841CO	0	On Site	Tanks	1997
1842BY	0	On Site	Unspecified Tank	1962
1843T	0	On Site	Unspecified Tank	1962
1844BY	0	On Site	Tanks	1997
1845B	0	On Site	Unspecified Tank	1989
1846B	0	On Site	Unspecified Tank	1989
1847B	0	On Site	Unspecified Tank	1989
1848CF	0	On Site	Tanks	1986
1849AI	0	On Site	Unspecified Tank	1962
1850CO	0	On Site	Tanks	1986
1851BY	0	On Site	Unspecified Tank	1986
1852AI	0	On Site	Unspecified Tank	1989
1853T	0	On Site	Unspecified Tank	1986
1854B	0	On Site	Unspecified Tank	1989
1855T	0	On Site	Unspecified Tank	1918
1856T	0	On Site	Unspecified Tank	1877
1857L	0	On Site	Unspecified Tank	1918
1858B	0	On Site	Unspecified Tank	1996
1859BD	21	SE	Unspecified Tank	1877
1860DL	93	N	Unspecified Tank	1997
1861FT	256	S	Unspecified Tank	1962
1862FT	257	S	Unspecified Tank	1989
1863FT	257	S	Unspecified Tank	1990
1864EZ	369	NE	Unspecified Tank	1919
1865EZ	369	NE	Unspecified Tank	1905

1866FU	382	N	Unspecified Tank	1989
1867FU	382	N	Unspecified Tank	1989
1868FU	382	N	Unspecified Tank	1989
1869FU	382	N	Unspecified Tank	1989
1870FI	408	N	Unspecified Tank	1877
1871FI	463	NE	Unspecified Tank	1962
1872FN	482	NE	Unspecified Tank	1877

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 6

ID	Distance (m)	Direction	Use	Date
1873FV	0	On Site	Electricity Substation	1993
1874CK	0	On Site	Electricity Substation	1997
1875CK	2	N	Electricity Substation	1980
1876CK	2	N	Electricity Substation	1986
1877CK	17	N	Electricity Substation	1980
1878CK	19	N	Electricity Substation	1997

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 1752

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
1879BE	0	On Site	Unspecified Pit	1921
1880M	0	On Site	Unspecified Heap	1921
1881F	0	On Site	Unspecified Heap	1921
1882FW	0	On Site	Air Shaft	1921
1883AV	0	On Site	Old Coal Level	1921
1884BA	0	On Site	Cuttings	1921
1885BB	0	On Site	Cuttings	1921
1886L	0	On Site	Unspecified Old Shaft	1921
1887CE	0	On Site	Unspecified Old Shaft	1921
1888Q	0	On Site	Unspecified Heap	1921
1889AW	0	On Site	Unspecified Heap	1921
1890AY	0	On Site	Refuse Heap	1921
1891AY	0	On Site	Colliery	1921
1892AX	0	On Site	Unspecified Ground Workings	1921
1893CJ	0	On Site	Pond	1921
1894AZ	0	On Site	Colliery	1921
1895CM	0	On Site	Unspecified Ground Workings	1914
1896M	0	On Site	Unspecified Ground Workings	1914
1897W	0	On Site	Unspecified Heap	1914
1898X	0	On Site	Unspecified Ground Workings	1914
1899Y	0	On Site	Trial Shaft	1914
1900Z	0	On Site	Unspecified Ground Workings	1914
1901AA	0	On Site	Unspecified Ground	1914

			Workings	
1902F	0	On Site	Unspecified Heap	1914
1903BE	0	On Site	Unspecified Ground Workings	1914
1904D	0	On Site	Unspecified Heap	1914
1905AD	0	On Site	Unspecified Ground Workings	1914
1906N	0	On Site	Unspecified Pit	1914
1907D	0	On Site	Unspecified Heap	1914
1908N	0	On Site	Unspecified Ground Workings	1914
1909AE	0	On Site	Unspecified Heap	1914
1910AF	0	On Site	Unspecified Ground Workings	1914
1911AF	0	On Site	Unspecified Ground Workings	1914
1912CM	0	On Site	Unspecified Ground Workings	1914
1913P	0	On Site	Unspecified Ground Workings	1914
1914C	0	On Site	Air Shaft	1914
1915H	0	On Site	Colliery	1914
1916C	0	On Site	Unspecified Heap	1914
1917B	0	On Site	Unspecified Heap	1914
1918D	0	On Site	Unspecified Drift	1914
1919C	0	On Site	Unspecified Drift	1914
1920G	0	On Site	Unspecified Ground Workings	1914
1921G	0	On Site	Unspecified Old Level	1914
1922CO	0	On Site	Unspecified Ground Workings	1921
1923AZ	0	On Site	Unspecified Ground Workings	1921
1924DT	0	On Site	Air Shaft	1921
1925AU	0	On Site	Refuse Heaps	1921
1926E	0	On Site	Unspecified Drift	1914
1927G	0	On Site	Unspecified Old Level	1914
1928D	0	On Site	Unspecified Old Level	1914
1929K	0	On Site	Colliery	1914
1930F	0	On Site	Colliery	1914
1931O	0	On Site	Old Coal Levels	1914
1932AL	0	On Site	Unspecified Ground Workings	1914
1933D	0	On Site	Unspecified Ground Workings	1914
1934D	0	On Site	Unspecified Old Level	1914
1935AM	0	On Site	Unspecified Ground Workings	1914
1936AN	0	On Site	Unspecified Ground Workings	1914
1937F	0	On Site	Old Coal Levels	1914

1938F	0	On Site	Old Coal Levels	1914
1939F	0	On Site	Old Coal Levels	1914
1940G	0	On Site	Unspecified Heaps	1914
1941M	0	On Site	Unspecified Ground Workings	1914
1942M	0	On Site	Unspecified Old Level	1914
1943BM	0	On Site	Unspecified Ground Workings	1921
1944J	0	On Site	Unspecified Pit	1921
1945AO	0	On Site	Old Coal Level	1921
1946BL	0	On Site	Unspecified Ground Workings	1921
1947AO	0	On Site	Unspecified Pit	1921
1948BL	0	On Site	Unspecified Ground Workings	1921
1949BT	0	On Site	Unspecified Heap	1921
1950AO	0	On Site	Unspecified Ground Workings	1921
1951AQ	0	On Site	Unspecified Ground Workings	1921
1952CD	0	On Site	Unspecified Ground Workings	1921
1953AR	0	On Site	Old Coal Level	1921
1954CQ	0	On Site	Old Coal Pit	1921
1955AR	0	On Site	Unspecified Ground Workings	1921
1956AO	0	On Site	Cuttings	1921
1957J	0	On Site	Unspecified Ground Workings	1921
1958AU	0	On Site	Refuse Heap	1914
1959FW	0	On Site	Air Shaft	1914
1960AV	0	On Site	Old Level (Coal)	1914
1961CC	0	On Site	Unspecified Ground Workings and Heap	1914
1962AW	0	On Site	Unspecified Heap	1914
1963CE	0	On Site	Unspecified Old Shaft	1914
1964L	0	On Site	Unspecified Old Shaft	1914
1965BC	0	On Site	Unspecified Ground Workings	1914
1966FX	0	On Site	Pond	1914
1967AX	0	On Site	Unspecified Ground Workings	1914
1968BD	0	On Site	Unspecified Ground Workings	1914
1969AY	0	On Site	Refuse Heap	1914
1970AY	0	On Site	Refuse Heap	1914
1971AZ	0	On Site	Unspecified Ground Workings	1914
1972CO	0	On Site	Unspecified Ground Workings	1914
1973CO	0	On Site	Colliery	1914

1974L	0	On Site	Colliery	1914
1975CJ	0	On Site	Pond	1914
1976BA	0	On Site	Cuttings	1914
1977BB	0	On Site	Cuttings	1914
1978BC	0	On Site	Unspecified Ground Workings	1914
1979FX	0	On Site	Pond	1914
1980AX	0	On Site	Unspecified Ground Workings	1914
1981BD	0	On Site	Unspecified Ground Workings	1914
1982AY	0	On Site	Refuse Heap	1914
1983AY	0	On Site	Refuse Heap	1914
1984AZ	0	On Site	Unspecified Ground Workings	1914
1985CO	0	On Site	Unspecified Ground Workings	1914
1986CO	0	On Site	Colliery	1914
1987L	0	On Site	Colliery	1914
1988CJ	0	On Site	Pond	1914
1989L	0	On Site	Unspecified Old Shaft	1914
1990CE	0	On Site	Unspecified Old Shaft	1914
1991AW	0	On Site	Unspecified Heap	1914
1992AV	0	On Site	Unspecified Ground Workings and Heap	1914
1993AV	0	On Site	Old Level (Coal)	1914
1994FW	0	On Site	Air Shaft	1914
1995AU	0	On Site	Refuse Heap	1914
1996BA	0	On Site	Cuttings	1914
1997BB	0	On Site	Cuttings	1914
1998AC	0	On Site	Unspecified Ground Workings	1948
1999AF	0	On Site	Unspecified Ground Workings	1948
2000BF	0	On Site	Unspecified Pit	1948
2001AM	0	On Site	Unspecified Ground Workings	1948
2002BG	0	On Site	Unspecified Pit	1948
2003F	0	On Site	Unspecified Pit	1948
2004BE	0	On Site	Unspecified Pit	1948
2005W	0	On Site	Unspecified Ground Workings	1948
2006AF	0	On Site	Unspecified Ground Workings	1948
2007AL	0	On Site	Unspecified Ground Workings	1948
2008AN	0	On Site	Unspecified Ground Workings	1948
2009AN	0	On Site	Unspecified Pit	1948
2010AG	0	On Site	Unspecified Pit	1948

2011AH	0	On Site	Unspecified Pit	1903
2012AH	0	On Site	Unspecified Pit	1903
2013BH	0	On Site	Unspecified Ground Workings	1903
2014M	0	On Site	Unspecified Pit	1903
2015G	0	On Site	Unspecified Pit	1903
2016AC	0	On Site	Unspecified Ground Workings	1903
2017N	0	On Site	Unspecified Pit	1903
2018N	0	On Site	Unspecified Pit	1903
2019E	0	On Site	Unspecified Ground Workings	1903
2020AA	0	On Site	Unspecified Ground Workings	1903
2021AL	0	On Site	Unspecified Ground Workings	1903
2022D	0	On Site	Unspecified Ground Workings	1948
2023N	0	On Site	Unspecified Pit	1948
2024M	0	On Site	Unspecified Ground Workings	1948
2025M	0	On Site	Unspecified Ground Workings	1948
2026M	0	On Site	Unspecified Ground Workings	1948
2027AH	0	On Site	Unspecified Pit	1948
2028AH	0	On Site	Unspecified Pit	1948
2029X	0	On Site	Unspecified Ground Workings	1948
2030BE	0	On Site	Unspecified Pit	1903
2031AC	0	On Site	Unspecified Ground Workings	1903
2032AG	0	On Site	Unspecified Pit	1903
2033X	0	On Site	Unspecified Pit	1903
2034BF	0	On Site	Unspecified Pit	1903
2035AM	0	On Site	Unspecified Ground Workings	1903
2036BG	0	On Site	Unspecified Pit	1903
2037AN	0	On Site	Unspecified Ground Workings	1903
2038AN	0	On Site	Unspecified Pit	1903
2039X	0	On Site	Unspecified Ground Workings	1903
2040W	0	On Site	Unspecified Ground Workings	1903
2041AF	0	On Site	Unspecified Ground Workings	1903
2042BJ	0	On Site	Unspecified Ground Workings	1903
2043AG	0	On Site	Unspecified Ground Workings	1903
2044AE	0	On Site	Unspecified Ground	1877

			Workings	
2045BI	0	On Site	Old Coal Level	1877
2046BI	0	On Site	Old Coal Level	1877
2047B	0	On Site	Unspecified Ground Workings	1877
2048M	0	On Site	Unspecified Pit	1877
2049D	0	On Site	Old Coal Level	1877
2050AL	0	On Site	Old Coal Level	1877
2051O	0	On Site	Old Coal Level	1877
2052AL	0	On Site	Unspecified Pit	1877
2053AL	0	On Site	Unspecified Pit	1877
2054AE	0	On Site	Unspecified Ground Workings	1877
2055W	0	On Site	Unspecified Ground Workings	1877
2056BJ	0	On Site	Unspecified Pit	1877
2057BP	0	On Site	Unspecified Ground Workings	1948
2058BQ	0	On Site	Unspecified Ground Workings	1948
2059BQ	0	On Site	Unspecified Pit	1948
2060CD	0	On Site	Unspecified Pit	1948
2061AR	0	On Site	Unspecified Pit	1948
2062BL	0	On Site	Unspecified Ground Workings	1948
2063CD	0	On Site	Unspecified Ground Workings	1948
2064AP	0	On Site	Unspecified Ground Workings	1948
2065AQ	0	On Site	Old Coal Level	1948
2066BQ	0	On Site	Unspecified Pit	1948
2067J	0	On Site	Unspecified Ground Workings	1948
2068A	0	On Site	Unspecified Pit	1948
2069A	0	On Site	Unspecified Ground Workings	1948
2070BN	0	On Site	Unspecified Pit	1948
2071BQ	0	On Site	Unspecified Pit	1903
2072A	0	On Site	Unspecified Pit	1903
2073BQ	0	On Site	Unspecified Pit	1903
2074CD	0	On Site	Unspecified Pit	1903
2075BQ	0	On Site	Old Coal Level	1903
2076BO	0	On Site	Unspecified Ground Workings	1903
2077A	0	On Site	Unspecified Ground Workings	1903
2078AR	0	On Site	Old Coal Level	1903
2079BP	0	On Site	Unspecified Pit	1903
2080BP	0	On Site	Unspecified Pit	1903
2081BN	0	On Site	Unspecified Ground	1903

			Workings	
2082BL	0	On Site	Unspecified Ground Workings	1903
2083AR	0	On Site	Old Coal Pit	1903
2084CD	0	On Site	Unspecified Pit	1877
2085AR	0	On Site	Unspecified Pit	1877
2086AR	0	On Site	Unspecified Pit	1877
2087BQ	0	On Site	Unspecified Pit	1877
2088BP	0	On Site	Unspecified Ground Workings	1877
2089BO	0	On Site	Unspecified Ground Workings	1877
2090AT	0	On Site	Unspecified Ground Workings	1877
2091BO	0	On Site	Unspecified Ground Workings	1877
2092BN	0	On Site	Unspecified Pit	1877
2093BN	0	On Site	Unspecified Ground Workings	1877
2094BL	0	On Site	Unspecified Ground Workings	1877
2095BQ	0	On Site	Unspecified Ground Workings	1877
2096BL	0	On Site	Unspecified Ground Workings	1877
2097CD	0	On Site	Unspecified Ground Workings	1877
2098BQ	0	On Site	Unspecified Pit	1877
2099AP	0	On Site	Unspecified Ground Workings	1877
2100AZ	0	On Site	Unspecified Ground Workings	1876
2101AV	0	On Site	Old Coal Level	1901
2102L	0	On Site	Old Coal Pit	1901
2103CO	0	On Site	Unspecified Ground Workings	1901
2104AZ	0	On Site	Unspecified Ground Workings	1901
2105Q	0	On Site	Unspecified Ground Workings	1901
2106BU	0	On Site	Unspecified Ground Workings	1901
2107BQ	0	On Site	Old Coal Level	1900
2108BR	0	On Site	Unspecified Ground Workings	1900
2109AR	0	On Site	Old Coal Level	1900
2110BP	0	On Site	Unspecified Ground Workings	1900
2111CD	0	On Site	Unspecified Pit	1900
2112BO	0	On Site	Unspecified Ground Workings	1900
2113BN	0	On Site	Unspecified Pit	1900

2114BL	0	On Site	Unspecified Ground Workings	1900
2115P	0	On Site	Unspecified Heap	1948
2116AH	0	On Site	Unspecified Heap	1948
2117BI	0	On Site	Unspecified Old Level	1948
2118AI	0	On Site	Unspecified Heap	1948
2119AD	0	On Site	Unspecified Old Level	1948
2120M	0	On Site	Unspecified Heap	1948
2121AD	0	On Site	Unspecified Heap	1948
2122AD	0	On Site	Unspecified Heap	1948
2123N	0	On Site	Unspecified Heap	1948
2124D	0	On Site	Unspecified Heap	1948
2125AD	0	On Site	Unspecified Heap	1948
2126Y	0	On Site	Coal Shaft	1948
2127AK	0	On Site	Unspecified Heap	1948
2128F	0	On Site	Old Coal Levels	1948
2129AA	0	On Site	Unspecified Heaps	1948
2130AC	0	On Site	Unspecified Heap	1948
2131BS	0	On Site	Unspecified Heap	1948
2132AC	0	On Site	Unspecified Heap	1948
2133AM	0	On Site	Unspecified Heap	1948
2134AM	0	On Site	Unspecified Heaps	1948
2135AM	0	On Site	Unspecified Heaps	1948
2136F	0	On Site	Unspecified Heap	1948
2137F	0	On Site	Refuse Heap	1948
2138F	0	On Site	Unspecified Heap	1948
2139F	0	On Site	Colliery	1948
2140G	0	On Site	Unspecified Old Levels	1948
2141K	0	On Site	Colliery	1948
2142BF	0	On Site	Unspecified Heap	1948
2143AI	0	On Site	Colliery	1948
2144AN	0	On Site	Unspecified Heap	1948
2145CI	0	On Site	Refuse Heap	1948
2146E	0	On Site	Refuse Heap	1948
2147AE	0	On Site	Unspecified Heap	1948
2148AE	0	On Site	Unspecified Heap	1948
2149AH	0	On Site	Unspecified Heap	1903
2150P	0	On Site	Unspecified Heap	1903
2151M	0	On Site	Unspecified Heap	1903
2152M	0	On Site	Unspecified Heap	1903
2153M	0	On Site	Unspecified Heaps	1903
2154M	0	On Site	Unspecified Heap	1903
2155AH	0	On Site	Unspecified Heap	1903
2156BX	0	On Site	Unspecified Heap	1903
2157AD	0	On Site	Unspecified Heaps	1903
2158G	0	On Site	Unspecified Heap	1903

2159D	0	On Site	Unspecified Old Levels	1903
2160AK	0	On Site	Unspecified Heaps	1903
2161AL	0	On Site	Unspecified Old Levels	1903
2162AE	0	On Site	Unspecified Heap	1903
2163AC	0	On Site	Unspecified Heap	1903
2164BF	0	On Site	Unspecified Heap	1903
2165AN	0	On Site	Unspecified Heap	1903
2166AM	0	On Site	Unspecified Heap	1903
2167AM	0	On Site	Unspecified Heaps	1903
2168F	0	On Site	Unspecified Heap	1903
2169F	0	On Site	Unspecified Old Levels	1903
2170K	0	On Site	Colliery	1903
2171AI	0	On Site	Colliery	1903
2172AI	0	On Site	Coal Levels	1877
2173G	0	On Site	Coal Levels	1877
2174C	0	On Site	Colliery	1877
2175F	0	On Site	Unspecified Heap	1877
2176AD	0	On Site	Unspecified Heap	1877
2177M	0	On Site	Unspecified Heap	1877
2178G	0	On Site	Unspecified Heaps	1877
2179BT	0	On Site	Unspecified Heap	1948
2180M	0	On Site	Unspecified Heaps	1877
2181M	0	On Site	Unspecified Heaps	1877
2182BW	0	On Site	Refuse Heap	1948
2183BN	0	On Site	Refuse Heaps	1948
2184BR	0	On Site	Refuse Heap	1948
2185AP	0	On Site	Unspecified Heaps	1948
2186AP	0	On Site	Unspecified Heap	1903
2187CD	0	On Site	Unspecified Heap	1903
2188AR	0	On Site	Unspecified Heap	1903
2189BT	0	On Site	Unspecified Heap	1877
2190BQ	0	On Site	Unspecified Heap	1877
2191AP	0	On Site	Unspecified Heap	1877
2192AQ	0	On Site	Unspecified Heap	1877
2193AP	0	On Site	Unspecified Heap	1877
2194AD	0	On Site	Unspecified Heap	1903
2195BS	0	On Site	Unspecified Heap	1903
2196AZ	0	On Site	Colliery	1901
2197AZ	0	On Site	Unspecified Heap	1901
2198BT	0	On Site	Unspecified Heap	1900
2199AR	0	On Site	Unspecified Heap	1900
2200F	0	On Site	Unspecified Old Level	1903
2201AL	0	On Site	Unspecified Heap	1903
2202AL	0	On Site	Unspecified Old Levels	1903
2203AM	0	On Site	Unspecified Heaps	1903
2204BJ	0	On Site	Unspecified Heap	1903

2205AD	0	On Site	Unspecified Old Levels	1903
2206CD	0	On Site	Unspecified Ground Workings	1962
2207BK	0	On Site	Unspecified Ground Workings	1962
2208AL	0	On Site	Unspecified Heap	1877
2209BQ	0	On Site	Unspecified Ground Workings	1962
2210AR	0	On Site	Unspecified Ground Workings	1962
2211AR	0	On Site	Unspecified Ground Workings	1962
2212BP	0	On Site	Refuse Heap	1977
2213BN	0	On Site	Refuse Heap	1977
2214AR	0	On Site	Refuse Heap	1977
2215BN	0	On Site	Colliery	1948
2216CA	0	On Site	Refuse Heap	1965
2217K	0	On Site	Refuse Heap	1965
2218P	0	On Site	Unspecified Heap	1965
2219E	0	On Site	Unspecified Disused Drift	1965
2220BR	0	On Site	Refuse Heap	1965
2221BN	0	On Site	Refuse Heap	1965
2222AE	0	On Site	Unspecified Disused Levels	1965
2223BI	0	On Site	Unspecified Disused Level	1965
2224G	0	On Site	Unspecified Disused Levels	1965
2225G	0	On Site	Unspecified Disused Levels	1965
2226D	0	On Site	Unspecified Disused Levels	1965
2227AI	0	On Site	Unspecified Disused Levels	1965
2228AG	0	On Site	Unspecified Heaps	1965
2229AH	0	On Site	Unspecified Heap	1965
2230BT	0	On Site	Unspecified Heap	1903
2231M	0	On Site	Unspecified Heap	1965
2232M	0	On Site	Unspecified Heap	1965
2233AD	0	On Site	Unspecified Heaps	1965
2234M	0	On Site	Unspecified Heaps	1965
2235F	0	On Site	Unspecified Disused Levels	1965
2236F	0	On Site	Unspecified Disused Levels	1965
2237AD	0	On Site	Unspecified Heap	1965
2238AI	0	On Site	Unspecified Heap	1965
2239D	0	On Site	Unspecified Heaps	1965
2240AD	0	On Site	Unspecified Heap	1965
2241AD	0	On Site	Unspecified Heaps	1965
2242AC	0	On Site	Unspecified Heap	1965

2243AN	0	On Site	Unspecified Heaps	1965
2244AM	0	On Site	Unspecified Heaps	1965
2245FY	0	On Site	Unspecified Heap	1965
2246AK	0	On Site	Unspecified Heap	1965
2247AA	0	On Site	Unspecified Heaps	1965
2248AK	0	On Site	Unspecified Heap	1965
2249F	0	On Site	Unspecified Heap	1965
2250AF	0	On Site	Unspecified Heaps	1965
2251X	0	On Site	Unspecified Heap	1965
2252CB	0	On Site	Unspecified Disused Level	1965
2253Q	0	On Site	Unspecified Disused Level	1965
2254L	0	On Site	Unspecified Disused Level	1965
2255AY	0	On Site	Unspecified Heaps	1965
2256AZ	0	On Site	Refuse Heap	1965
2257BO	0	On Site	Refuse Heap	1965
2258BO	0	On Site	Unspecified Heap	1965
2259M	0	On Site	Unspecified Heap	1965
2260AC	0	On Site	Unspecified Ground Workings	1965
2261AL	0	On Site	Unspecified Ground Workings	1965
2262AL	0	On Site	Unspecified Ground Workings	1965
2263AH	0	On Site	Unspecified Pit	1965
2264BV	0	On Site	Unspecified Heap	1876
2265M	0	On Site	Unspecified Pit	1965
2266M	0	On Site	Unspecified Ground Workings	1965
2267AH	0	On Site	Unspecified Ground Workings	1965
2268AC	0	On Site	Unspecified Ground Workings	1965
2269AH	0	On Site	Unspecified Ground Workings	1965
2270D	0	On Site	Unspecified Ground Workings	1965
2271AD	0	On Site	Unspecified Pit	1965
2272BE	0	On Site	Unspecified Pit	1965
2273BE	0	On Site	Unspecified Ground Workings	1965
2274BF	0	On Site	Unspecified Ground Workings	1965
2275AM	0	On Site	Unspecified Ground Workings	1965
2276BJ	0	On Site	Unspecified Ground Workings	1965
2277AM	0	On Site	Unspecified Ground Workings	1965
2278AM	0	On Site	Unspecified Ground Workings	1965
2279BG	0	On Site	Unspecified Ground	1965

			Workings	
2280AM	0	On Site	Unspecified Ground Workings	1965
2281FY	0	On Site	Unspecified Pit	1965
2282AK	0	On Site	Unspecified Pit	1965
2283AK	0	On Site	Unspecified Pit	1965
2284AA	0	On Site	Unspecified Ground Workings	1965
2285W	0	On Site	Unspecified Ground Workings	1965
2286AF	0	On Site	Unspecified Ground Workings	1965
2287CC	0	On Site	Unspecified Ground Workings	1965
2288BN	0	On Site	Unspecified Ground Workings	1965
2289J	0	On Site	Unspecified Ground Workings	1965
2290AX	0	On Site	Unspecified Ground Workings	1965
2291B	0	On Site	Unspecified Mine	1965
2292CA	0	On Site	Unspecified Disused Tip	1987
2293E	0	On Site	Unspecified Disused Drift	1987
2294AM	0	On Site	Refuse Heap	1987
2295F	0	On Site	Unspecified Disused Drift	1987
2296F	0	On Site	Unspecified Disused Levels	1987
2297F	0	On Site	Unspecified Disused Levels	1987
2298FZ	0	On Site	Unspecified Disused Workings	1987
2299Q	0	On Site	Unspecified Disused Level	1987
2300AY	0	On Site	Unspecified Heaps	1987
2301BR	0	On Site	Opencast Workings	1987
2302CB	0	On Site	Unspecified Disused Level	1987
2303L	0	On Site	Unspecified Disused Shaft	1987
2304CE	0	On Site	Unspecified Disused Level	1987
2305FY	0	On Site	Unspecified Pit	1987
2306AA	0	On Site	Unspecified Ground Workings	1987
2307CC	0	On Site	Unspecified Ground Workings	1987
2308CD	0	On Site	Unspecified Ground Workings	1987
2309AZ	0	On Site	Refuse Heap	1987
2310BN	0	On Site	Refuse Heap	1987
2311CD	0	On Site	Unspecified Heap	1900
2312BQ	0	On Site	Unspecified Pit	1962
2313AP	0	On Site	Unspecified Ground Workings	1876
2314AP	0	On Site	Unspecified Ground	1876

			Workings	
2315BS	0	On Site	Unspecified Heap	1965
2316AC	0	On Site	Unspecified Ground Workings	1965
2317M	0	On Site	Unspecified Ground Workings	1965
2318M	0	On Site	Unspecified Pit	1965
2319CD	0	On Site	Unspecified Ground Workings	1965
2320CC	0	On Site	Unspecified Heap	1948
2321CE	0	On Site	Unspecified Old Shaft	1948
2322AW	0	On Site	Unspecified Heap	1948
2323AZ	0	On Site	Colliery	1948
2324AY	0	On Site	Refuse Heap	1948
2325Q	0	On Site	Unspecified Heap	1948
2326Q	0	On Site	Unspecified Slant	1948
2327Q	0	On Site	Refuse Heap	1948
2328L	0	On Site	Refuse Heap	1948
2329L	0	On Site	Unspecified Old Shaft	1948
2330BO	0	On Site	Brick Works	1948
2331AV	0	On Site	Old Coal Level	1948
2332CB	0	On Site	Unspecified Pit	1948
2333AZ	0	On Site	Unspecified Ground Workings	1948
2334L	0	On Site	Unspecified Ground Workings	1948
2335BD	0	On Site	Unspecified Ground Workings	1948
2336AP	0	On Site	Unspecified Disused Level	1962
2337AX	0	On Site	Unspecified Ground Workings	1948
2338CE	0	On Site	Unspecified Old Shaft	1903
2339AV	0	On Site	Coal Level	1903
2340GA	0	On Site	Refuse Heap	1903
2341L	0	On Site	Unspecified Old Shaft	1903
2342L	0	On Site	Unspecified Heap	1903
2343AZ	0	On Site	Unspecified Heap	1903
2344AX	0	On Site	Unspecified Pit	1903
2345CH	0	On Site	Old Coal Level	1903
2346AU	0	On Site	Refuse Heap	1903
2347CD	0	On Site	Unspecified Heap	1962
2348AQ	0	On Site	Unspecified Ground Workings	1962
2349AT	0	On Site	Unspecified Ground Workings	1876
2350AX	0	On Site	Unspecified Heap	1877
2351AW	0	On Site	Unspecified Heap	1877
2352L	0	On Site	Old Coal Pit	1877
2353AZ	0	On Site	Unspecified Ground	1877

			Workings	
2354AV	0	On Site	Old Coal Level	1877
2355BD	0	On Site	Unspecified Ground Workings	1877
2356BT	0	On Site	Unspecified Heap	1876
2357AX	0	On Site	Unspecified Pit	1877
2358AX	0	On Site	Unspecified Ground Workings	1877
2359CJ	0	On Site	Unspecified Pit	1877
2360BR	0	On Site	Unspecified Ground Workings	1876
2361BN	0	On Site	Unspecified Ground Workings	1876
2362AV	0	On Site	Unspecified Heap	1948
2363D	0	On Site	Unspecified Drift	1948
2364E	0	On Site	Unspecified Drift	1948
2365C	0	On Site	Unspecified Drift	1948
2366BI	0	On Site	Reservoir	1903
2367D	0	On Site	Unspecified Drift	1903
2368AI	0	On Site	Unspecified Drift	1903
2369CS	0	On Site	Unspecified Ground Workings	1877
2370AH	0	On Site	Unspecified Old Quarry	1877
2371FY	0	On Site	Cuttings	1877
2372AK	0	On Site	Unspecified Old Quarry	1877
2373AL	0	On Site	Unspecified Old Quarry	1877
2374AF	0	On Site	Unspecified Old Quarry	1877
2375X	0	On Site	Unspecified Old Quarry	1877
2376AN	0	On Site	Unspecified Old Quarry	1877
2377CR	0	On Site	Cuttings	1877
2378BV	0	On Site	Unspecified Heap	1877
2379BB	0	On Site	Cuttings	1901
2380R	0	On Site	Pond	1901
2381Q	0	On Site	Unspecified Heap	1877
2382AZ	0	On Site	Pond	1901
2383CD	0	On Site	Pond	1900
2384AM	0	On Site	Unspecified Old Quarry	1877
2385F	0	On Site	Air Shaft	1903
2386AC	0	On Site	Unspecified Old Quarries	1877
2387BQ	0	On Site	Unspecified Old Quarries	1903
2388AZ	0	On Site	Cuttings	1876
2389R	0	On Site	Pond	1876
2390BQ	0	On Site	Unspecified Old Quarries	1900
2391AT	0	On Site	Unspecified Old Quarries	1900
2392BQ	0	On Site	Unspecified Old Quarries	1900
2393CJ	0	On Site	Pond	1901
2394CJ	0	On Site	Pond	1901

2395FX	0	On Site	Pond	1901
2396BA	0	On Site	Cuttings	1901
2397C	0	On Site	Air Shaft	1948
2398BA	0	On Site	Cuttings	1965
2399CJ	0	On Site	Pond	1965
2400W	0	On Site	Pond	1965
2401AF	0	On Site	Ponds	1965
2402AG	0	On Site	Pond	1965
2403X	0	On Site	Pond	1965
2404X	0	On Site	Pond	1965
2405B	0	On Site	Air Shaft	1903
2406CJ	0	On Site	Ponds	1987
2407W	0	On Site	Pond	1987
2408CJ	0	On Site	Pond	1987
2409X	0	On Site	Pond	1987
2410	0	On Site	Pond	1987
2411R	0	On Site	Ponds	1987
2412BB	0	On Site	Cuttings	1987
2413BA	0	On Site	Cuttings	1987
2414BB	0	On Site	Cuttings	1948
2415CJ	0	On Site	Ponds	1948
2416BA	0	On Site	Cuttings	1948
2417FW	0	On Site	Air Shaft	1903
2418BB	0	On Site	Cuttings	1903
2419BA	0	On Site	Cuttings	1903
2420CJ	0	On Site	Ponds	1903
2421R	0	On Site	Pond	1903
2422GB	0	On Site	Unspecified Old Quarries	1877
2423R	0	On Site	Pond	1877
2424GC	0	On Site	Unspecified Old Quarry	1877
2425CJ	0	On Site	Ponds	1877
2426CF	0	On Site	Cuttings	1877
2427BA	0	On Site	Cuttings	1877
2428CG	0	On Site	Cuttings	1877
2429CH	0	On Site	Cuttings	1877
2430BL	0	On Site	Unspecified Old Quarries	1900
2431BB	0	On Site	Cuttings	1965
2432B	0	On Site	Pond	1987
2433BJ	0	On Site	Pond	1987
2434K	0	On Site	Colliery	1921
2435FW	0	On Site	Air Shaft	1948
2436D	0	On Site	Unspecified Old Level	1921
2437G	0	On Site	Unspecified Old Levels	1921
2438BX	0	On Site	Unspecified Old Levels	1921
2439BX	0	On Site	Unspecified Old Levels	1921
2440BX	0	On Site	Unspecified Old Levels	1921

2441D	0	On Site	Unspecified Old Levels	1921
2442H	0	On Site	Colliery	1921
2443BH	0	On Site	Unspecified Ground Workings	1921
2444CL	0	On Site	Unspecified Heap	1921
2445B	0	On Site	Unspecified Heap	1921
2446BX	0	On Site	Unspecified Heap	1921
2447M	0	On Site	Unspecified Ground Workings	1921
2448M	0	On Site	Unspecified Heaps	1921
2449N	0	On Site	Unspecified Pit	1921
2450D	0	On Site	Unspecified Ground Workings	1921
2451G	0	On Site	Unspecified Heap	1921
2452G	0	On Site	Unspecified Heap	1921
2453H	0	On Site	Refuse Heap	1921
2454D	0	On Site	Unspecified Heap	1921
2455BJ	0	On Site	Unspecified Ground Workings	1921
2456H	0	On Site	Unspecified Heap	1921
2457D	0	On Site	Refuse Heap	1921
2458Y	0	On Site	Coal Trial Shaft	1921
2459F	0	On Site	Old Coal Levels	1921
2460F	0	On Site	Old Coal Levels	1921
2461F	0	On Site	Old Coal Levels	1921
2462F	0	On Site	Old Coal Levels	1921
2463AA	0	On Site	Old Coal Levels	1921
2464BI	0	On Site	Unspecified Old Level	1921
2465W	0	On Site	Unspecified Heap	1921
2466CJ	0	On Site	Unspecified Heap	1921
2467BH	0	On Site	Unspecified Pit	1921
2468AE	0	On Site	Old Coal Levels	1921
2469BS	0	On Site	Unspecified Ground Workings	1921
2470X	0	On Site	Unspecified Ground Workings	1921
2471AN	0	On Site	Unspecified Ground Workings	1921
2472BX	0	On Site	Unspecified Ground Workings	1921
2473AH	0	On Site	Unspecified Ground Workings	1921
2474AD	0	On Site	Unspecified Ground Workings	1921
2475C	0	On Site	Unspecified Heap	1921
2476E	0	On Site	Refuse Heap	1921
2477Y	0	On Site	Colliery	1921
2478F	0	On Site	Refuse Heap	1921
2479Z	0	On Site	Unspecified Ground Workings	1921

2480O	0	On Site	Old Coal Levels	1921
2481AG	0	On Site	Unspecified Ground Workings	1921
2482AF	0	On Site	Unspecified Ground Workings	1921
2483BE	0	On Site	Unspecified Ground Workings	1921
2484AM	0	On Site	Unspecified Ground Workings	1921
2485AH	0	On Site	Unspecified Ground Workings	1921
2486AH	0	On Site	Unspecified Ground Workings	1921
2487BX	0	On Site	Unspecified Old Level	1921
2488AV	0	On Site	Old Coal Level	1921
2489CC	0	On Site	Unspecified Heap	1921
2490CB	0	On Site	Unspecified Pit	1921
2491AX	0	On Site	Unspecified Ground Workings	1921
2492AW	0	On Site	Unspecified Heap	1921
2493L	0	On Site	Unspecified Old Shaft	1921
2494Q	0	On Site	Unspecified Old Shaft	1921
2495S	0	On Site	Colliery	1921
2496S	0	On Site	Refuse Heap	1921
2497V	0	On Site	Colliery	1921
2498Q	0	On Site	Unspecified Slant	1921
2499L	0	On Site	Refuse Heap	1921
2500Q	0	On Site	Unspecified Heap	1921
2501U	0	On Site	Unspecified Ground Workings	1921
2502BD	0	On Site	Unspecified Pits	1921
2503AV	0	On Site	Unspecified Heap	1921
2504BT	0	On Site	Unspecified Heaps	1921
2505BQ	0	On Site	Old Coal Level	1921
2506BQ	0	On Site	Unspecified Pit	1921
2507BP	0	On Site	Unspecified Ground Workings	1921
2508BL	0	On Site	Unspecified Ground Workings	1921
2509BK	0	On Site	Unspecified Ground Workings	1921
2510DB	0	On Site	Unspecified Ground Workings	1921
2511BM	0	On Site	Unspecified Pit	1921
2512BM	0	On Site	Unspecified Ground Workings	1921
2513BL	0	On Site	Unspecified Ground Workings	1921
2514CX	0	On Site	Old Coal Pit	1921
2515AR	0	On Site	Old Coal Level	1921
2516AR	0	On Site	Unspecified Ground	1921

			Workings	
2517AQ	0	On Site	Unspecified Ground Workings	1921
2518BY	0	On Site	Unspecified Ground Workings	1921
2519K	0	On Site	Colliery	1921
2520BI	0	On Site	Unspecified Old Level	1921
2521D	0	On Site	Unspecified Old Level	1921
2522H	0	On Site	Unspecified Drift	1921
2523D	0	On Site	Unspecified Drift	1921
2524G	0	On Site	Unspecified Old Levels	1921
2525BX	0	On Site	Unspecified Old Levels	1921
2526BX	0	On Site	Unspecified Old Levels	1921
2527BX	0	On Site	Unspecified Old Levels	1921
2528D	0	On Site	Unspecified Old Levels	1921
2529H	0	On Site	Colliery	1921
2530E	0	On Site	Unspecified Drift	1921
2531C	0	On Site	Unspecified Drift	1921
2532BH	0	On Site	Unspecified Ground Workings	1921
2533B	0	On Site	Air Shaft	1921
2534CL	0	On Site	Unspecified Heap	1921
2535B	0	On Site	Unspecified Heap	1921
2536BX	0	On Site	Unspecified Heap	1921
2537M	0	On Site	Unspecified Ground Workings	1921
2538M	0	On Site	Unspecified Heaps	1921
2539N	0	On Site	Unspecified Pit	1921
2540D	0	On Site	Unspecified Ground Workings	1921
2541G	0	On Site	Unspecified Heap	1921
2542G	0	On Site	Unspecified Heap	1921
2543H	0	On Site	Refuse Heap	1921
2544D	0	On Site	Unspecified Heap	1921
2545BJ	0	On Site	Unspecified Ground Workings	1921
2546H	0	On Site	Unspecified Heap	1921
2547D	0	On Site	Refuse Heap	1921
2548Y	0	On Site	Coal Trial Shaft	1921
2549F	0	On Site	Old Coal Levels	1921
2550F	0	On Site	Old Coal Levels	1921
2551F	0	On Site	Old Coal Levels	1921
2552F	0	On Site	Old Coal Levels	1921
2553AA	0	On Site	Old Coal Levels	1921
2554W	0	On Site	Unspecified Heap	1921
2555CJ	0	On Site	Unspecified Heap	1921
2556BH	0	On Site	Unspecified Pit	1921
2557AE	0	On Site	Old Coal Levels	1921

2558BS	0	On Site	Unspecified Ground Workings	1921
2559X	0	On Site	Unspecified Ground Workings	1921
2560AN	0	On Site	Unspecified Ground Workings	1921
2561BX	0	On Site	Unspecified Ground Workings	1921
2562AH	0	On Site	Unspecified Ground Workings	1921
2563AD	0	On Site	Unspecified Ground Workings	1921
2564C	0	On Site	Unspecified Heap	1921
2565E	0	On Site	Refuse Heap	1921
2566Y	0	On Site	Colliery	1921
2567F	0	On Site	Refuse Heap	1921
2568Z	0	On Site	Unspecified Ground Workings	1921
2569O	0	On Site	Old Coal Levels	1921
2570AG	0	On Site	Pond	1921
2571AG	0	On Site	Unspecified Ground Workings	1921
2572AF	0	On Site	Unspecified Ground Workings	1921
2573BE	0	On Site	Unspecified Ground Workings	1921
2574AM	0	On Site	Unspecified Ground Workings	1921
2575AH	0	On Site	Unspecified Ground Workings	1921
2576AH	0	On Site	Unspecified Ground Workings	1921
2577BX	0	On Site	Unspecified Old Level	1921
2578CJ	0	On Site	Ponds	1921
2579FW	0	On Site	Air Shaft	1921
2580AV	0	On Site	Old Coal Level	1921
2581CC	0	On Site	Unspecified Heap	1921
2582CB	0	On Site	Unspecified Pit	1921
2583AX	0	On Site	Unspecified Ground Workings	1921
2584BA	0	On Site	Cuttings	1921
2585BB	0	On Site	Cuttings	1921
2586AW	0	On Site	Unspecified Heap	1921
2587L	0	On Site	Unspecified Old Shaft	1921
2588Q	0	On Site	Unspecified Old Shaft	1921
2589S	0	On Site	Colliery	1921
2590S	0	On Site	Refuse Heap	1921
2591V	0	On Site	Colliery	1921
2592Q	0	On Site	Unspecified Slant	1921
2593L	0	On Site	Refuse Heap	1921
2594Q	0	On Site	Unspecified Heap	1921

2595U	0	On Site	Unspecified Ground Workings	1921
2596BD	0	On Site	Unspecified Pits	1921
2597AV	0	On Site	Unspecified Heap	1921
2598BT	0	On Site	Unspecified Heaps	1921
2599BQ	0	On Site	Old Coal Level	1921
2600BQ	0	On Site	Cuttings	1921
2601BQ	0	On Site	Unspecified Pit	1921
2602BP	0	On Site	Unspecified Ground Workings	1921
2603BL	0	On Site	Unspecified Ground Workings	1921
2604A	0	On Site	Cuttings	1921
2605BK	0	On Site	Unspecified Ground Workings	1921
2606DB	0	On Site	Unspecified Ground Workings	1921
2607BM	0	On Site	Unspecified Pit	1921
2608BM	0	On Site	Unspecified Ground Workings	1921
2609BL	0	On Site	Unspecified Ground Workings	1921
2610CX	0	On Site	Old Coal Pit	1921
2611AR	0	On Site	Old Coal Level	1921
2612AR	0	On Site	Unspecified Ground Workings	1921
2613AQ	0	On Site	Unspecified Ground Workings	1921
2614BY	0	On Site	Unspecified Ground Workings	1921
2615CG	0	On Site	Disused Colliery	1948
2616BU	0	On Site	Colliery	1903
2617CG	0	On Site	Colliery	1903
2618AD	0	On Site	Unspecified Ground Workings	1948
2619S	0	On Site	Unspecified Disused Mine	1965
2620S	0	On Site	Unspecified Disused Mine	1987
2621M	0	On Site	Unspecified Pit	1948
2622M	0	On Site	Unspecified Old Levels	1948
2623BX	0	On Site	Unspecified Old Levels	1948
2624Z	0	On Site	Unspecified Heaps	1948
2625O	0	On Site	Old Coal Levels	1948
2626CK	0	On Site	Colliery	1948
2627BX	0	On Site	Unspecified Old Level	1903
2628BS	0	On Site	Unspecified Level	1903
2629P	0	On Site	Unspecified Heaps	1877
2630M	0	On Site	Unspecified Heaps	1877
2631G	0	On Site	Unspecified Old Drift	1877
2632AG	0	On Site	Coal Level	1877
2633CJ	0	On Site	Pond	1921

2634BA	0	On Site	Cuttings	1921
2635BB	0	On Site	Cuttings	1921
2636FW	0	On Site	Air Shaft	1921
2637V	0	On Site	Colliery	1921
2638S	0	On Site	Colliery	1921
2639AW	0	On Site	Unspecified Heap	1921
2640Q	0	On Site	Old Shaft	1921
2641AV	0	On Site	Old Coal Level	1921
2642L	0	On Site	Old Shaft	1921
2643AY	0	On Site	Refuse Heap	1921
2644R	0	On Site	Unspecified Ground Workings	1921
2645U	0	On Site	Unspecified Ground Workings	1921
2646AX	0	On Site	Unspecified Ground Workings	1921
2647BD	0	On Site	Unspecified Ground Workings	1921
2648CC	0	On Site	Unspecified Heap	1921
2649AV	0	On Site	Unspecified Heap	1921
2650BT	0	On Site	Unspecified Heap	1921
2651BP	0	On Site	Unspecified Ground Workings	1921
2652CO	0	On Site	Unspecified Ground Workings	1921
2653BM	0	On Site	Unspecified Ground Workings	1921
2654BK	0	On Site	Unspecified Ground Workings	1921
2655BL	0	On Site	Unspecified Ground Workings	1921
2656BQ	0	On Site	Unspecified Pit	1921
2657AR	0	On Site	Unspecified Ground Workings	1921
2658AR	0	On Site	Old Coal Level	1921
2659AQ	0	On Site	Unspecified Ground Workings	1921
2660CK	0	On Site	Unspecified Drift	1948
2661C	0	On Site	Air Shaft	1877
2662A	0	On Site	Unspecified Ground Workings	1921
2663BM	0	On Site	Unspecified Ground Workings	1921
2664A	0	On Site	Unspecified Ground Workings	1921
2665A	0	On Site	Cuttings	1921
2666BM	0	On Site	Unspecified Pit	1921
2667BR	0	On Site	Unspecified Ground Workings	1921
2668AO	0	On Site	Unspecified Pit	1921
2669BL	0	On Site	Unspecified Ground	1921

			Workings	
2670AT	0	On Site	Unspecified Ground Workings	1921
2671AG	0	On Site	Unspecified Old Quarry	1877
2672AD	0	On Site	Unspecified Old Quarry	1877
2673P	0	On Site	Unspecified Ground Workings	1921
2674B	0	On Site	Unspecified Heap	1921
2675B	0	On Site	Air Shaft	1921
2676C	0	On Site	Unspecified Drift	1921
2677D	0	On Site	Unspecified Old Level	1921
2678D	0	On Site	Unspecified Drift	1921
2679D	0	On Site	Refuse Heap	1921
2680D	0	On Site	Unspecified Heap	1921
2681H	0	On Site	Unspecified Ground Workings	1921
2682E	0	On Site	Unspecified Drift	1921
2683E	0	On Site	Refuse Heap	1921
2684F	0	On Site	Old Coal Levels	1921
2685F	0	On Site	Old Coal Levels	1921
2686F	0	On Site	Unspecified Heap	1921
2687F	0	On Site	Unspecified Ground Workings	1921
2688Z	0	On Site	Unspecified Ground Workings	1921
2689AA	0	On Site	Unspecified Ground Workings	1921
2690Y	0	On Site	Coal Trial Shaft	1921
2691F	0	On Site	Colliery	1921
2692B	0	On Site	Colliery	1921
2693G	0	On Site	Unspecified Old Levels	1921
2694G	0	On Site	Unspecified Ground Workings	1921
2695D	0	On Site	Unspecified Ground Workings	1921
2696H	0	On Site	Refuse Heap	1921
2697G	0	On Site	Unspecified Ground Workings	1921
2698BX	0	On Site	Unspecified Old Levels	1921
2699H	0	On Site	Colliery	1921
2700C	0	On Site	Unspecified Heap	1921
2701AZ	0	On Site	Unspecified Drift	1948
2702C	0	On Site	Coal Drift	1877
2703CP	0	On Site	Coal Pit	1876
2704A	0	On Site	Unspecified Heap	1921
2705BX	0	On Site	Unspecified Old Level	1921
2706BX	0	On Site	Unspecified Ground Workings	1921
2707M	0	On Site	Unspecified Ground Workings	1921

2708N	0	On Site	Unspecified Ground Workings	1921
2709AD	0	On Site	Unspecified Heaps	1921
2710BX	0	On Site	Unspecified Ground Workings	1921
2711AM	0	On Site	Unspecified Ground Workings	1921
2712AN	0	On Site	Unspecified Ground Workings	1921
2713X	0	On Site	Unspecified Ground Workings	1921
2714O	0	On Site	Old Coal Levels	1921
2715O	0	On Site	Old Coal Levels	1921
2716AH	0	On Site	Unspecified Ground Workings	1921
2717O	0	On Site	Unspecified Ground Workings	1921
2718AE	0	On Site	Unspecified Heap	1921
2719W	0	On Site	Unspecified Heap	1921
2720AF	0	On Site	Unspecified Ground Workings	1921
2721AF	0	On Site	Unspecified Ground Workings	1921
2722AC	0	On Site	Unspecified Ground Workings	1921
2723N	0	On Site	Unspecified Pit	1921
2724BU	0	W	Air Shaft	1914
2725BU	0	W	Air Shaft	1914
2726BU	0	W	Air Shaft	1921
2727BC	2	S	Unspecified Pit	1921
2728BC	2	S	Unspecified Pit	1921
2729CX	2	S	Unspecified Ground Workings	1877
2730CG	2	N	Cuttings	1877
2731BU	3	W	Unspecified Drift	1921
2732BU	3	W	Unspecified Heap	1877
2733V	3	SE	Unspecified Disused Tip	1987
2734CK	3	N	Colliery	1921
2735BD	3	SE	Unspecified Ground Workings	1921
2736CT	3	NE	Unspecified Old Quarry	1900
2737CX	4	S	Cuttings	1962
2738CX	4	S	Old Coal Level	1903
2739BU	5	W	Unspecified Drift	1914
2740BU	5	W	Unspecified Drift	1914
2741CX	5	S	Old Coal Pit	1900
2742CK	5	N	Unspecified Disused Drift	1987
2743A	5	S	Unspecified Heap	1948
2744V	5	SE	Unspecified Ground Workings	1921

2745V	5	SE	Unspecified Ground Workings	1921
2746BU	5	W	Unspecified Drift	1921
2747CX	6	S	Old Coal Level	1900
2748BI	7	NW	Old Coal Level	1903
2749BI	7	NW	Old Coal Level	1877
2750CS	7	S	Old Level (Coal)	1914
2751CS	7	S	Old Level (Coal)	1914
2752CT	7	NE	Old Quarry	1921
2753V	8	SE	Refuse Heap	1948
2754CG	8	N	Unspecified Heap	1921
2755CK	8	N	Colliery	1921
2756CK	8	N	Colliery	1921
2757CG	8	N	Unspecified Ground Workings	1921
2758CT	9	NE	Unspecified Old Quarry	1921
2759CZ	9	SE	Unspecified Ground Workings	1876
2760CK	9	N	Colliery	1914
2761CS	9	S	Old Coal Level	1903
2762CS	9	S	Old Coal Level	1948
2763CT	9	NE	Unspecified Quarry	1962
2764CT	10	NE	Unspecified Old Quarry	1921
2765CZ	10	SE	Old Coal Level	1901
2766CT	10	NE	Unspecified Old Quarry	1948
2767BU	11	W	Air Shaft	1948
2768CQ	11	S	Unspecified Ground Workings	1877
2769V	11	SE	Refuse Heap	1914
2770V	11	SE	Refuse Heap	1914
2771AY	11	N	Shale Tip	1914
2772AY	11	N	Shale Tip	1914
2773CK	11	N	Unspecified Drift	1914
2774CU	12	NE	Cuttings	1903
2775CU	12	NE	Cuttings	1877
2776CK	12	N	Refuse Heap	1965
2777CK	12	N	Drift	1921
2778CK	12	N	Drift	1921
2779CV	13	S	Unspecified Pit	1987
2780DA	14	S	Unspecified Heaps	1965
2781CV	14	S	Unspecified Ground Workings	1948
2782V	14	SE	Refuse Heaps	1921
2783V	15	SE	Refuse Heap	1965
2784CG	15	N	Unspecified Heaps	1877
2785BU	15	W	Air Shaft	1921
2786CS	15	S	Old Coal Level	1921

2787CK	16	N	Unspecified Drift	1921
2788CG	17	N	Unspecified Heap	1948
2789DA	17	S	Unspecified Disused Tip	1987
2790CX	17	S	Cuttings	1921
2791BU	17	S	Unspecified Heap	1921
2792BU	18	S	Unspecified Heap	1903
2793CG	19	N	Unspecified Ground Workings	1921
2794CG	19	N	Unspecified Ground Workings	1921
2795CD	19	S	Unspecified Ground Workings	1921
2796CG	19	N	Unspecified Ground Workings	1914
2797CG	19	N	Unspecified Ground Workings	1914
2798CY	19	NW	Unspecified Ground Workings	1914
2799CX	19	S	Pond	1876
2800CV	19	S	Unspecified Ground Workings	1903
2801DG	20	S	Old Coal Level	1901
2802CG	20	N	Unspecified Old Level	1948
2803CX	20	S	Old Coal Pit	1921
2804CG	21	N	Unspecified Pit	1914
2805CG	21	N	Unspecified Pit	1914
2806DF	21	NE	Pond	1948
2807CX	21	S	Unspecified Pit	1877
2808DF	21	NE	Pond	1921
2809V	22	S	Unspecified Ground Workings	1876
2810DG	22	S	Unspecified Pit	1903
2811DG	22	S	Unspecified Pit	1948
2812CG	22	N	Unspecified Heap	1921
2813CG	22	N	Unspecified Heap	1921
2814V	22	S	Unspecified Ground Workings	1877
2815DG	22	SE	Refuse Heap	1921
2816DG	22	SE	Refuse Heap	1921
2817DG	22	S	Old Coal Level	1921
2818DG	22	S	Old Coal Level	1921
2819AT	24	S	Unspecified Ground Workings	1948
2820DK	25	NW	Unspecified Ground Workings	1921
2821DK	25	NW	Unspecified Ground Workings	1921
2822DK	25	NW	Unspecified Ground Workings	1921
2823DG	25	SE	Refuse Heap	1914

2824DG	25	SE	Refuse Heap	1914
2825CX	25	S	Ponds	1921
2826CX	26	S	Unspecified Pit	1962
2827CX	28	S	Unspecified Pits	1948
2828DG	28	S	Old Coal Level	1921
2829CQ	28	SE	Unspecified Heap	1900
2830CD	29	S	Unspecified Ground Workings	1921
2831CD	29	S	Unspecified Ground Workings	1921
2832CZ	31	SE	Unspecified Ground Workings	1914
2833CZ	31	SE	Unspecified Ground Workings	1914
2834AT	31	S	Unspecified Heap	1948
2835V	31	S	Unspecified Mine	1965
2836DD	31	N	Unspecified Pit	1921
2837DA	31	S	Refuse Heap	1965
2838DC	33	NE	Unspecified Pit	1914
2839DG	34	SE	Refuse Heap	1921
2840BU	34	S	Unspecified Heap	1948
2841BU	34	S	Unspecified Heap	1903
2842CD	34	S	Unspecified Ground Workings	1877
2843DC	35	NE	Unspecified Pit	1921
2844DC	35	NE	Unspecified Pit	1921
2845DC	35	NE	Unspecified Pit	1948
2846DC	35	NE	Unspecified Pit	1903
2847DC	36	NE	Unspecified Pit	1921
2848DK	36	NW	Unspecified Heaps	1877
2849DC	37	NE	Unspecified Pit	1877
2850CX	37	S	Old Coal Level	1903
2851DD	37	N	Old Coal Pit	1877
2852DD	37	N	Unspecified Pit	1921
2853DG	38	S	Old Trial Drift	1914
2854DG	38	S	Old Trial Drift	1914
2855DA	40	S	Unspecified Old Quarries	1903
2856DC	41	NE	Unspecified Old Level	1903
2857CG	42	N	Unspecified Old Level	1921
2858CS	43	S	Unspecified Heap	1948
2859DB	43	SE	Unspecified Heap	1965
2860DB	43	SE	Unspecified Heap	1987
2861V	43	W	Pond	1921
2862DK	43	NW	Old Coal Level	1921
2863DK	43	NW	Old Coal Level	1921
2864DD	44	N	Unspecified Pit	1914
2865DD	44	N	Unspecified Pit	1914

2866DD	44	N	Unspecified Pit	1948
2867CS	44	S	Unspecified Heap	1921
2868CS	44	S	Unspecified Heap	1921
2869CR	44	NW	Old Coal Level	1914
2870DP	45	S	Unspecified Disused Workings	1987
2871DD	45	N	Unspecified Pit	1921
2872DD	45	N	Unspecified Pit	1921
2873CS	45	S	Unspecified Pit	1914
2874CS	45	S	Unspecified Pit	1914
2875BD	45	SE	Unspecified Pit	1948
2876CG	45	N	Old Level	1921
2877V	46	W	Pond	1914
2878V	46	W	Pond	1914
2879AQ	46	NE	Unspecified Disused Level	1977
2880V	46	W	Pond	1903
2881V	46	W	Pond	1877
2882V	46	W	Pond	1921
2883DK	47	NW	Old Coal Level	1948
2884DG	47	S	Unspecified Ground Workings	1877
2885BC	47	S	Unspecified Heap	1903
2886BC	47	S	Unspecified Heap	1877
2887CX	47	S	Unspecified Pit	1877
2888CQ	49	SE	Unspecified Heap	1921
2889CQ	49	SE	Unspecified Heap	1921
2890CX	49	S	Unspecified Ground Workings	1962
2891V	49	W	Pond	1876
2892V	50	W	Unspecified Ground Workings	1901
2893V	50	W	Pond	1921
2894V	50	W	Pond	1901
2895CR	50	NW	Old Coal Level	1921
2896DE	51	SW	Unspecified Ground Workings	1876
2897AQ	51	NE	Old Coal Level	1921
2898AQ	51	NE	Old Coal Level	1921
2899AQ	52	NE	Old Coal Pit	1921
2900CG	52	N	Unspecified Old Level	1914
2901CG	52	N	Unspecified Old Level	1914
2902DB	52	S	Unspecified Quarry	1876
2903DF	52	NE	Unspecified Heap	1877
2904DE	53	SW	Unspecified Ground Workings	1877
2905DG	53	SE	Coal Pit	1877
2906AQ	53	NE	Old Coal Level	1921
2907DE	53	SW	Unspecified Old Quarry	1901

2908DA	53	S	Refuse Heap	1948
2909DC	53	NE	Old Coal Level	1877
2910DF	53	NE	Unspecified Heap	1962
2911DE	54	SW	Unspecified Old Quarry	1903
2912CG	54	N	Unspecified Old Level	1921
2913CG	54	N	Unspecified Old Level	1921
2914DG	54	S	Unspecified Heap	1921
2915DF	55	NE	Unspecified Heap	1921
2916DF	55	NE	Unspecified Heap	1921
2917DG	55	S	Unspecified Ground Workings	1921
2918DG	55	S	Unspecified Ground Workings	1921
2919DF	56	NE	Unspecified Heap	1948
2920DF	56	NE	Unspecified Heap	1921
2921DF	56	NE	Unspecified Heap	1921
2922DG	57	S	Unspecified Ground Workings	1948
2923DB	57	S	Unspecified Ground Workings	1965
2924DE	57	S	Unspecified Ground Workings	1921
2925DE	57	S	Unspecified Ground Workings	1921
2926DT	58	SE	Unspecified Ground Workings	1877
2927CX	58	S	Old Coal Level	1903
2928DE	59	S	Unspecified Ground Workings	1914
2929DE	59	S	Unspecified Ground Workings	1914
2930BU	59	S	Unspecified Pit	1948
2931CS	60	S	Unspecified Pit	1876
2932CK	60	N	Cuttings	1877
2933DT	60	SE	Unspecified Ground Workings	1914
2934DT	60	SE	Unspecified Ground Workings	1914
2935DH	61	NW	Unspecified Heap	1948
2936DH	61	NW	Unspecified Ground Workings	1914
2937DH	61	NW	Unspecified Ground Workings	1914
2938DH	61	NW	Unspecified Heaps	1921
2939DE	63	S	Unspecified Ground Workings	1921
2940DH	64	NW	Unspecified Heaps	1921
2941DH	64	NW	Unspecified Heaps	1921
2942BC	64	S	Unspecified Ground Workings	1921
2943BC	64	S	Unspecified Ground	1921

			Workings	
2944CS	64	S	Unspecified Pit	1877
2945DB	65	S	Unspecified Old Quarries	1903
2946CD	66	S	Unspecified Heap	1948
2947DG	66	S	Unspecified Pit	1903
2948DT	66	SE	Unspecified Ground Workings	1921
2949DG	66	S	Unspecified Pit	1901
2950DE	67	SW	Unspecified Ground Workings	1921
2951DH	68	NW	Unspecified Heap	1877
2952DT	70	SW	Unspecified Ground Workings	1948
2953CD	71	S	Unspecified Ground Workings	1965
2954CD	71	S	Unspecified Ground Workings	1987
2955DG	71	S	Unspecified Heap	1876
2956DG	72	S	Unspecified Heap	1877
2957DE	72	S	Unspecified Heap	1877
2958DT	72	SE	Unspecified Ground Workings	1921
2959BC	73	S	Unspecified Heap	1948
2960DG	73	S	Unspecified Pit	1921
2961DG	73	S	Unspecified Pit	1921
2962DI	74	NE	Unspecified Ground Workings	1876
2963DG	74	S	Unspecified Pit	1948
2964DI	74	NE	Unspecified Ground Workings	1962
2965DG	75	S	Unspecified Pit	1914
2966DG	75	S	Unspecified Pit	1914
2967DK	77	NW	Unspecified Ground Workings	1914
2968DD	78	N	Unspecified Pit	1921
2969DI	78	NE	Unspecified Ground Workings	1921
2970DI	78	NE	Unspecified Ground Workings	1921
2971DG	78	S	Unspecified Heap	1921
2972DE	79	S	Unspecified Pit	1948
2973DK	79	NW	Unspecified Ground Workings	1965
2974BC	80	S	Unspecified Heap	1948
2975DJ	80	SE	Old Shafts (Coal)	1914
2976DJ	80	SE	Old Shafts (Coal)	1914
2977DK	80	NW	Unspecified Ground Workings	1921
2978DK	80	NW	Unspecified Ground Workings	1921
2979DJ	81	SE	Old Coal Shafts	1921

2980DK	81	NW	Unspecified Ground Workings	1921
2981DH	82	NW	Unspecified Pit	1877
2982DO	82	NE	Unspecified Pit	1877
2983DJ	82	SE	Old Clay Pit	1877
2984DD	83	N	Old Coal Shaft	1921
2985DI	83	NE	Unspecified Ground Workings	1877
2986DJ	83	SE	Unspecified Old Shafts	1903
2987DJ	83	SE	Unspecified Pit	1948
2988FV	83	NE	Cuttings	1877
2989DJ	84	SE	Old Clay Pit	1901
2990DD	84	N	Disused Old Coal Pit	1877
2991DD	84	N	Old Coal Pit	1901
2992DG	84	S	Unspecified Pit	1921
2993DD	85	N	Unspecified Heap	1921
2994DD	85	N	Unspecified Old Shaft	1903
2995DG	85	S	Old Trial Drift	1948
2996DG	86	S	Old Trial Drift	1921
2997DG	86	S	Old Trial Drift	1921
2998DG	86	S	Unspecified Drift	1876
2999DE	86	SW	Refuse Heap	1965
3000BC	86	S	Unspecified Ground Workings	1921
3001DK	87	NW	Unspecified Heaps	1903
3002DD	88	N	Old Coal Shaft	1921
3003DI	88	NE	Unspecified Ground Workings	1948
3004DI	88	NE	Unspecified Ground Workings	1903
3005DI	89	NE	Unspecified Ground Workings	1900
3006DG	90	S	Unspecified Drift	1877
3007DO	90	NE	Ponds	1977
3008DD	91	N	Unspecified Pit	1914
3009DD	91	N	Unspecified Pit	1914
3010DG	91	S	Old Trial Drift	1921
3011DD	91	N	Unspecified Pit	1948
3012DD	91	N	Unspecified Pit	1921
3013DD	91	N	Unspecified Pit	1921
3014DJ	91	SE	Unspecified Pit	1921
3015DL	93	N	Old Coal Shaft	1921
3016DI	93	NE	Unspecified Ground Workings	1921
3017DL	94	N	Old Coal Shaft	1948
3018DL	94	N	Old Shafts (Coal)	1914
3019DL	94	N	Old Shafts (Coal)	1914
3020DJ	95	SE	Unspecified Pit	1877

3021DJ	95	SE	Unspecified Pit	1948
3022DM	95	SE	Cuttings	1921
3023BD	96	SE	Cuttings	1877
3024DI	100	NE	Unspecified Ground Workings	1921
3025DO	100	NE	Unspecified Pit	1948
3026DM	101	SE	Cuttings	1914
3027DM	101	SE	Cuttings	1914
3028DT	101	W	Unspecified Ground Workings	1876
3029DM	102	SE	Cuttings	1921
3030DN	102	NW	Old Ironstone Levels	1914
3031DM	102	SE	Cuttings	1948
3032DN	103	NW	Old Ironstone Levels	1921
3033BD	104	SE	Unspecified Pit	1965
3034DD	104	N	Old Coal Shafts	1921
3035EG	106	NW	Unspecified Old Levels	1903
3036EG	106	NW	Old Ironstone Levels	1948
3037DO	106	NE	Unspecified Ground Workings	1921
3038DN	106	NW	Old Ironstone Levels	1921
3039DO	106	NE	Unspecified Heap	1903
3040DO	106	NE	Unspecified Ground Workings	1921
3041DO	107	NE	Unspecified Ground Workings	1877
3042DN	107	NW	Unspecified Pit	1965
3043CZ	108	S	Unspecified Heap	1965
3044DD	108	N	Old Coal Shafts	1921
3045DO	108	NE	Unspecified Heap	1900
3046GD	109	NW	Old Gravel Pit	1877
3047DQ	109	N	Unspecified Heap	1903
3048BD	109	SE	Cuttings	1921
3049EG	109	NW	Old Ironstone Level	1877
3050DO	110	NE	Unspecified Heap	1948
3051DO	112	NE	Unspecified Ground Workings	1876
3052DV	112	NW	Unspecified Drifts	1948
3053CZ	113	S	Unspecified Ground Workings	1965
3054CZ	113	S	Unspecified Ground Workings	1987
3055DS	113	S	Unspecified Ground Workings	1876
3056DD	114	N	Old Coal Pit	1901
3057DJ	114	SE	Unspecified Pit	1948
3058DJ	114	SE	Old Shafts (Coal)	1914
3059DJ	114	SE	Old Shafts (Coal)	1914
3060DJ	114	SE	Unspecified Pit	1877

3061DD	114	N	Old Coal Shafts	1948
3062DD	114	N	Unspecified Old Shafts	1903
3063DP	115	S	Unspecified Ground Workings	1914
3064DP	115	S	Unspecified Ground Workings	1914
3065DQ	115	N	Unspecified Heap	1877
3066DD	115	N	Old Coal Shafts	1921
3067GD	120	NW	Cuttings	1877
3068GE	120	S	Unspecified Ground Workings	1876
3069GE	122	S	Unspecified Heaps	1876
3070DJ	123	N	Cuttings	1877
3071DP	124	S	Unspecified Pit	1965
3072BD	124	SE	Unspecified Pit	1921
3073DJ	125	N	Old Coal Shafts	1921
3074DJ	126	N	Old Coal Shafts	1921
3075DS	127	S	Unspecified Heap	1876
3076DP	127	S	Unspecified Old Quarry	1901
3077GF	128	N	Cuttings	1903
3078DP	129	S	Unspecified Pit	1903
3079DY	129	NW	Colliery	1921
3080ED	130	S	Air Shaft	1877
3081DE	130	SW	Old Coal Pit	1921
3082DE	130	SW	Old Coal Pit	1921
3083DE	130	SW	Old Coal Pit	1914
3084DE	130	SW	Old Coal Pit	1914
3085DP	131	S	Unspecified Ground Workings	1914
3086DP	131	S	Unspecified Ground Workings	1914
3087DO	132	NE	Unspecified Heap	1900
3088DE	132	SW	Old Coal Pit	1921
3089DJ	132	N	Old Shafts (Coal)	1914
3090DJ	132	N	Old Shafts (Coal)	1914
3091DJ	132	N	Old Coal Shafts	1948
3092DE	133	SW	Old Coal Pit	1921
3093DE	134	SW	Old Coal Pit	1948
3094DE	134	SW	Old Coal Pit	1903
3095EG	134	NW	Old Ironstone Levels	1921
3096DE	135	SW	Old Coal Pit	1901
3097DJ	135	N	Old Coal Shafts	1921
3098DP	136	S	Air Shaft	1876
3099EG	136	NW	Unspecified Heap	1965
3100DG	137	S	Air Shaft	1876
3101EG	138	NW	Old Ironstone Levels	1921
3102DJ	139	SE	Unspecified Pit	1877

3103DP	140	S	Air Shaft	1877
3104DU	141	NE	Unspecified Heap	1914
3105DU	142	NE	Unspecified Ground Workings	1921
3106DU	142	NE	Unspecified Ground Workings	1921
3107GE	144	S	Unspecified Pit	1948
3108GE	145	S	Unspecified Ground Workings	1921
3109DU	145	NE	Unspecified Ground Workings	1921
3110DV	145	NW	Unspecified Pit	1965
3111DU	145	NE	Unspecified Pit	1903
3112DU	145	NE	Old Ironstone Quarry	1877
3113DE	145	SW	Old Coal Level	1901
3114DW	146	NW	Unspecified Ground Workings	1903
3115DW	146	NW	Unspecified Ground Workings	1921
3116GE	146	S	Ponds	1877
3117DU	146	NE	Unspecified Pit	1948
3118DW	146	NW	Unspecified Ground Workings	1900
3119GE	147	S	Unspecified Pit	1921
3120GE	147	S	Unspecified Pit	1921
3121DX	147	N	Cuttings	1903
3122DW	149	NW	Unspecified Ground Workings	1948
3123DU	149	NE	Pond	1987
3124DU	149	NE	Pond	1965
3125DW	150	NW	Unspecified Ground Workings	1921
3126DW	150	NW	Unspecified Ground Workings	1921
3127DW	150	NW	Unspecified Ground Workings	1921
3128DU	152	NE	Unspecified Heap	1948
3129GE	154	S	Unspecified Ground Workings	1876
3130DJ	154	N	Unspecified Pit	1877
3131GE	154	S	Old Coal Level	1903
3132EC	156	NW	Colliery	1914
3133DW	156	NW	Unspecified Ground Workings	1877
3134EI	157	S	Refuse Heap	1965
3135DU	158	NE	Unspecified Pit	1965
3136EC	158	NW	Colliery	1921
3137EC	158	NW	Colliery	1921
3138DZ	158	SE	Cuttings	1877
3139DJ	158	N	Old Coal Shafts	1948

3140DU	159	NE	Unspecified Pit	1987
3141DZ	164	SE	Cuttings	1876
3142GE	164	S	Old Coal Level	1900
3143GE	165	S	Old Coal Level	1903
3144EC	169	NW	Unspecified Drift	1914
3145EG	169	NW	Old Ironstone Levels	1921
3146DE	172	SW	Unspecified Pit	1921
3147DE	172	SW	Unspecified Pit	1921
3148GG	172	S	Refuse Heap	1948
3149EG	172	NW	Old Ironstone Levels	1921
3150EG	172	NW	Unspecified Old Levels	1903
3151EG	172	NW	Old Ironstone Levels	1948
3152DE	173	SW	Unspecified Pit	1948
3153EC	173	NW	Unspecified Drifts	1921
3154DE	173	SW	Unspecified Pit	1921
3155EG	176	NW	Old Ironstone Level	1877
3156EA	176	SE	Old Coal Level	1903
3157EC	176	NW	Unspecified Ground Workings	1965
3158EE	179	NW	Ponds	1948
3159EE	179	NW	Ponds	1903
3160EE	179	NW	Ponds	1965
3161EE	179	NW	Ponds	1987
3162EA	180	SE	Unspecified Heap	1921
3163EA	180	SE	Unspecified Heap	1921
3164EB	180	S	Unspecified Ground Workings	1965
3165EB	180	S	Unspecified Ground Workings	1987
3166EA	180	SE	Old Level (Coal)	1914
3167EA	180	SE	Old Level (Coal)	1914
3168EA	180	SE	Unspecified Heap	1876
3169EA	181	SE	Unspecified Heap	1948
3170EA	181	SE	Unspecified Heap	1877
3171EA	181	SE	Old Coal Level	1921
3172EA	181	SE	Burial Ground	1876
3173EE	183	NW	Ponds	1921
3174DK	183	NW	Unspecified Heap	1965
3175DK	183	NW	Unspecified Heap	1987
3176EA	183	SE	Burial Ground	1877
3177DE	183	SW	Old Coal Level	1921
3178DE	183	SW	Old Coal Level	1921
3179DE	184	SW	Old Coal Level	1948
3180DE	186	SW	Old Coal Level	1921
3181DY	189	NW	Unspecified Ground Workings	1914
3182DY	189	NW	Unspecified Ground	1921

			Workings	
3183DY	189	NW	Unspecified Ground Workings	1921
3184DW	189	W	Unspecified Heap	1921
3185EE	189	NW	Ponds	1877
3186DY	191	NW	Unspecified Pit	1948
3187DY	191	NW	Unspecified Pit	1903
3188EA	191	SE	Unspecified Heap	1921
3189DY	191	NW	Unspecified Ground Workings	1965
3190DW	191	W	Unspecified Heap	1948
3191EG	192	NW	Old Ironstone Levels	1914
3192EC	192	NW	Colliery	1903
3193EG	193	NW	Old Ironstone Levels	1921
3194DY	193	NW	Unspecified Old Quarry	1877
3195DY	193	NW	Unspecified Ground Workings	1921
3196EC	194	NW	Refuse Heap	1921
3197EC	194	NW	Refuse Heaps	1921
3198EC	194	NW	Refuse Heaps	1921
3199GF	194	N	Unspecified Old Quarries	1877
3200DY	195	NW	Unspecified Pit	1965
3201EC	197	NW	Unspecified Drifts	1948
3202ED	197	S	Unspecified Heap	1876
3203EG	197	NW	Old Ironstone Levels	1921
3204EG	199	NW	Unspecified Heap	1965
3205EC	200	NW	Unspecified Drift	1914
3206ED	200	S	Unspecified Heap	1877
3207EC	201	NW	Unspecified Drifts	1921
3208EE	203	NW	Unspecified Pit	1900
3209EE	205	NW	Unspecified Pit	1877
3210EC	206	NW	Unspecified Drifts	1921
3211EE	207	NW	Pond	1921
3212EF	207	S	Unspecified Heap	1876
3213DY	208	NW	Unspecified Ground Workings	1948
3214EF	210	S	Unspecified Pit	1914
3215EF	210	S	Unspecified Pit	1914
3216EF	210	S	Unspecified Heap	1921
3217EF	210	S	Unspecified Heap	1921
3218EF	210	S	Unspecified Heap	1921
3219EE	211	NW	Pond	1921
3220EF	211	S	Unspecified Heap	1948
3221EF	211	S	Unspecified Heap	1877
3222DY	213	NW	Unspecified Ground Workings	1965
3223EG	213	NW	Old Ironstone Levels	1914

3224EG	213	NW	Unspecified Ground Workings	1921
3225EG	213	NW	Unspecified Ground Workings	1921
3226EG	218	NW	Old Ironstone Levels	1921
3227CW	219	NE	Unspecified Pit	1903
3228EF	219	S	Unspecified Heap	1921
3229EG	220	NW	Unspecified Heaps	1903
3230EG	220	NW	Old Ironstone Levels	1948
3231EG	221	NW	Unspecified Pit	1965
3232EW	222	NW	Unspecified Old Level	1903
3233EG	222	NW	Old Ironstone Level	1877
3234EC	227	NW	Unspecified Drifts	1921
3235EH	227	S	Cemetery	1948
3236EH	229	S	Cemetery	1964
3237EH	229	S	Cemetery	1980
3238EH	229	S	Cemetery	1981
3239ET	232	S	Reservoir	1948
3240EC	236	NW	Unspecified Heap	1921
3241EC	236	NW	Unspecified Heap	1921
3242EC	236	NW	Unspecified Ground Workings	1914
3243EG	237	NW	Unspecified Ground Workings	1921
3244EF	238	S	Unspecified Pits	1876
3245EC	238	NW	Unspecified Ground Workings	1921
3246EF	238	S	Unspecified Pit	1988
3247EF	238	S	Unspecified Pit	1964
3248EF	239	SE	Unspecified Pit	1903
3249EF	239	SE	Unspecified Pit	1877
3250EF	239	SE	Unspecified Pit	1921
3251EF	240	SE	Unspecified Old Quarry	1901
3252EF	240	SE	Unspecified Ground Workings	1921
3253EF	240	SE	Unspecified Ground Workings	1921
3254EF	240	S	Unspecified Ground Workings	1914
3255EF	240	S	Unspecified Ground Workings	1914
3256EF	240	S	Unspecified Ground Workings	1948
3257EC	240	NW	Unspecified Ground Workings	1965
3258EJ	242	S	Cuttings	1948
3259EJ	242	S	Cuttings	1903
3260EJ	242	S	Cuttings	1877
3261EJ	243	S	Cuttings	1914
3262EJ	243	S	Cuttings	1914

3263EJ	243	S	Cuttings	1901
3264EJ	245	S	Cuttings	1921
3265EF	245	SE	Unspecified Ground Workings	1988
3266EF	245	SE	Unspecified Ground Workings	1964
3267EC	246	NW	Unspecified Ground Workings	1948
3268EF	247	SE	Unspecified Pit	1877
3269EG	248	NW	Unspecified Heap	1965
3270EJ	249	S	Cuttings	1921
3271ER	249	NE	Cuttings	1877
3272EF	249	S	Unspecified Ground Workings	1921
3273EJ	250	S	Cuttings	1921
3274EL	252	NW	Brick Works	1914
3275EL	252	NW	Brick Works	1914
3276EW	268	NW	Unspecified Old Quarry	1877
3277ED	269	S	Old Coal Drift	1921
3278EW	269	NW	Old Ironstone Level	1914
3279ED	270	S	Old Coal Drift	1921
3280ED	270	S	Old Coal Drift	1921
3281EW	270	NW	Old Ironstone Level	1921
3282EW	271	NW	Unspecified Pit	1965
3283ED	271	S	Old Coal Drift	1948
3284ED	272	S	Old Coal Drift	1914
3285ED	272	S	Old Coal Drift	1914
3286EW	272	NW	Old Ironstone Level	1948
3287EW	275	NW	Old Ironstone Level	1921
3288EM	276	N	Unspecified Pit	1903
3289EW	280	NW	Unspecified Old Level	1903
3290ED	283	S	Old Coal Drift	1921
3291ET	283	S	Reservoir	1914
3292ET	283	S	Reservoir	1914
3293ET	284	S	Reservoir	1921
3294EM	286	N	Unspecified Old Quarry	1877
3295EJ	287	S	Unspecified Ground Workings	1914
3296EJ	287	S	Unspecified Ground Workings	1914
3297EJ	288	S	Unspecified Heap	1921
3298EJ	288	S	Unspecified Heap	1921
3299EJ	289	S	Unspecified Heap	1948
3300EJ	290	S	Unspecified Heap	1921
3301EZ	290	NE	Old Ironstone Level	1948
3302EN	291	S	Refuse Heaps	1988
3303EN	291	S	Refuse Heaps	1964
3304EO	293	NW	Unspecified Old Quarry	1903

3305EO	293	NW	Unspecified Old Quarry	1948
3306ET	294	SE	Old Coal Drift	1901
3307ET	295	S	Air Shaft	1876
3308ED	297	SE	Unspecified Ground Workings	1914
3309ED	297	SE	Unspecified Ground Workings	1914
3310EZ	298	NE	Old Ironstone Level	1921
3311ET	298	S	Air Shaft	1877
3312EQ	302	S	Refuse Heap	1988
3313EQ	302	S	Refuse Heap	1964
3314FB	302	NE	Cuttings	1914
3315FB	304	NE	Cuttings	1948
3316FB	304	NE	Cuttings	1903
3317FB	304	NE	Cuttings	1877
3318ES	306	S	Refuse Heap	1964
3319ES	306	S	Refuse Heap	1988
3320GH	307	N	Unspecified Pit	1877
3321EU	308	NW	Old Ironstone Level	1948
3322ET	310	S	Unspecified Old Quarries	1901
3323EP	310	N	Mill Pond	1903
3324EP	310	N	Mill Pond	1877
3325ES	312	S	Refuse Heap	1988
3326ES	312	S	Refuse Heap	1964
3327EC	313	NW	Unspecified Heap	1903
3328EJ	313	S	Unspecified Pit	1877
3329ET	313	S	Unspecified Pit	1914
3330ET	313	S	Unspecified Pit	1914
3331ET	315	S	Unspecified Heap	1948
3332ET	315	S	Unspecified Ground Workings	1921
3333ET	315	S	Unspecified Ground Workings	1921
3334ET	315	S	Unspecified Ground Workings	1921
3335ET	315	SE	Unspecified Heaps	1876
3336ET	315	S	Unspecified Heap	1903
3337ET	316	S	Unspecified Ground Workings	1876
3338ET	317	SE	Unspecified Heap	1903
3339ET	318	SE	Unspecified Heap	1948
3340ET	318	S	Unspecified Heap	1988
3341ET	318	S	Unspecified Heap	1964
3342EU	318	NW	Unspecified Ground Workings	1914
3343EU	318	NW	Unspecified Ground Workings	1914
3344ET	319	S	Unspecified Ground Workings	1877

3345EG	319	NW	Unspecified Ground Workings	1914
3346ET	319	S	Old Coal Drift	1903
3347EG	320	NW	Unspecified Pit	1921
3348EG	320	NW	Unspecified Pit	1921
3349ET	322	S	Unspecified Ground Workings	1921
3350EG	322	NW	Unspecified Pit	1921
3351EG	323	NW	Unspecified Pit	1903
3352EG	323	NW	Unspecified Pit	1948
3353EU	324	NW	Unspecified Pit	1921
3354EU	324	NW	Unspecified Pit	1921
3355ET	324	SE	Reservoir	1921
3356EZ	325	NE	Old Ironstone Level	1877
3357EU	325	NW	Old Ironstone Level	1914
3358EU	325	NW	Old Ironstone Level	1914
3359EU	325	NW	Unspecified Pit	1903
3360EU	325	NW	Unspecified Pit	1948
3361EU	326	NW	Unspecified Pit	1921
3362EU	326	NW	Disused Old Ironstone Level	1877
3363EU	326	NW	Unspecified Pit	1901
3364EG	329	NW	Unspecified Pit	1965
3365EV	334	NE	Unspecified Heap	1921
3366EV	334	NE	Unspecified Heap	1921
3367EW	334	NW	Unspecified Ground Workings	1914
3368EW	334	NW	Unspecified Ground Workings	1921
3369EW	334	NW	Unspecified Ground Workings	1921
3370EV	335	NE	Unspecified Heap	1914
3371FB	335	NE	Cuttings	1877
3372ET	336	S	Unspecified Pit	1948
3373EV	336	NE	Unspecified Ground Workings	1921
3374EY	337	S	Unspecified Heap	1877
3375EO	338	NW	Unspecified Old Quarry	1914
3376ET	338	S	Unspecified Pit	1903
3377EV	339	NE	Unspecified Heap	1948
3378EV	339	NE	Unspecified Heap	1903
3379EV	339	NE	Old Ironstone Quarry	1877
3380GI	339	NW	Unspecified Old Quarry	1921
3381EW	339	NW	Unspecified Ground Workings	1948
3382EW	340	NW	Unspecified Old Quarry	1877
3383EO	340	NW	Unspecified Old Quarry	1921
3384EQ	340	S	Unspecified Pit	1988

3385EQ	340	S	Unspecified Pit	1964
3386EW	341	NW	Unspecified Ground Workings	1903
3387EW	343	NW	Unspecified Heap	1965
3388EY	343	S	Air Shaft	1876
3389EO	343	NW	Colliery	1877
3390EY	345	S	Air Shaft	1877
3391EV	347	NE	Unspecified Pit	1921
3392EV	347	NE	Unspecified Pit	1921
3393EO	348	NW	Unspecified Quarry	1965
3394EV	349	NE	Unspecified Pit	1948
3395EV	349	NE	Unspecified Pit	1903
3396EV	349	NE	Unidentified Pit	1914
3397EQ	350	S	Unspecified Old Quarries	1901
3398EX	352	S	Unspecified Ground Workings	1876
3399EQ	353	S	Unspecified Pit	1914
3400EQ	353	S	Unspecified Pit	1914
3401EQ	353	S	Unspecified Pits	1921
3402EQ	353	S	Unspecified Pits	1921
3403EQ	353	S	Unspecified Pits	1921
3404EV	353	NE	Unspecified Pit	1877
3405EQ	353	S	Unspecified Heap	1948
3406EQ	353	S	Unspecified Heap	1903
3407EU	354	NW	Old Ironstone Level	1921
3408EX	354	S	Unspecified Ground Workings	1921
3409EQ	354	S	Unspecified Ground Workings	1877
3410EX	355	S	Unspecified Ground Workings	1914
3411EX	355	S	Unspecified Ground Workings	1914
3412EQ	355	S	Unspecified Heaps	1876
3413EX	355	S	Old Coal Level	1901
3414EX	355	S	Unspecified Ground Workings	1948
3415EZ	355	NE	Unspecified Disused Level	1987
3416EX	356	S	Unspecified Ground Workings	1903
3417EU	356	NW	Unspecified Old Level	1903
3418EX	356	S	Unspecified Ground Workings	1921
3419EX	356	S	Unspecified Ground Workings	1921
3420EX	357	S	Unspecified Ground Workings	1877
3421EU	357	NW	Old Ironstone Level	1921
3422EU	358	NW	Unspecified Ground Workings	1914

3423EU	358	NW	Unspecified Ground Workings	1914
3424EU	358	NW	Disused Old Ironstone Level	1901
3425EU	359	NW	Old Ironstone Level	1921
3426GJ	361	W	Unspecified Disused Shaft	1965
3427EU	361	NW	Unspecified Pit	1948
3428EX	361	S	Unspecified Heap	1988
3429EX	361	S	Unspecified Heap	1964
3430FA	362	W	Old Ironstone Shaft	1921
3431EQ	362	S	Unspecified Ground Workings	1921
3432EU	362	NW	Unspecified Pit	1965
3433EU	362	NW	Unspecified Pit	1921
3434FA	363	W	Old Ironstone Shaft	1921
3435FA	364	W	Old Ironstone Shaft	1921
3436EZ	364	NE	Old Ironstone Level	1914
3437FA	364	W	Old Ironstone Level	1914
3438FA	364	W	Old Ironstone Level	1914
3439FA	366	W	Old Ironstone Pit	1901
3440EZ	366	NE	Old Ironstone Level	1921
3441EX	367	S	Unspecified Ground Workings	1921
3442FA	367	W	Unspecified Old Shaft	1903
3443FA	367	W	Old Limestone Pit	1877
3444FA	367	W	Old Ironstone Shaft	1948
3445ET	367	SE	Old Level (Coal)	1914
3446ET	367	SE	Old Level (Coal)	1914
3447EX	368	S	Unspecified Ground Workings	1964
3448EX	368	S	Unspecified Ground Workings	1988
3449FC	376	W	Unspecified Pit	1921
3450FC	378	W	Unspecified Heap	1914
3451FC	378	W	Unspecified Heap	1914
3452FC	379	W	Unspecified Heap	1877
3453EQ	379	S	Unspecified Pit	1877
3454FC	379	W	Unspecified Heap	1948
3455FC	380	W	Unspecified Heap	1921
3456FC	380	W	Unspecified Heap	1921
3457FD	383	N	Unspecified Heap	1900
3458FR	387	N	Unspecified Heap	1877
3459FR	387	N	Unspecified Heap	1948
3460EQ	388	S	Unspecified Pit	1948
3461EQ	388	S	Unspecified Pit	1903
3462EZ	388	NE	Unspecified Old Level	1903
3463FR	388	N	Unspecified Heap	1921
3464FD	388	N	Unspecified Heap	1921

3465FD	388	N	Unspecified Heap	1921
3466EQ	389	S	Unspecified Pit	1914
3467EQ	389	S	Unspecified Pit	1914
3468EQ	389	S	Unspecified Pit	1948
3469FE	390	SW	Cuttings	1876
3470FR	391	N	Unspecified Heap	1921
3471FE	392	SW	Cuttings	1877
3472FC	392	W	Unspecified Heap	1965
3473FC	392	W	Unspecified Heap	1987
3474EQ	393	S	Unspecified Pit	1876
3475FG	394	E	Unspecified Old Quarries	1903
3476EW	394	NW	Unspecified Heap	1914
3477FF	394	S	Refuse Heap	1988
3478FF	394	S	Refuse Heap	1964
3479FG	395	E	Old Ironstone Quarry	1877
3480FH	397	S	Unspecified Ground Workings	1877
3481FH	398	S	Unspecified Ground Workings	1988
3482FH	398	S	Unspecified Ground Workings	1964
3483EU	399	NW	Unspecified Ground Workings	1921
3484EW	399	NW	Unspecified Heap	1948
3485EW	399	NW	Unspecified Heap	1903
3486FS	399	E	Pond	1948
3487FH	400	S	Unspecified Old Quarries	1901
3488EQ	400	S	Unspecified Pit	1921
3489FH	400	S	Unspecified Ground Workings	1921
3490FH	400	S	Old Coal Level	1948
3491EL	400	NW	Disused Old Ironstone Level	1877
3492FH	400	S	Unspecified Heap	1914
3493FH	400	S	Unspecified Heap	1914
3494FS	401	E	Pond	1921
3495EW	401	NW	Unspecified Heap	1965
3496FH	401	S	Old Coal Level	1921
3497FH	401	S	Old Coal Level	1921
3498EU	402	NW	Unspecified Pit	1903
3499FE	402	SW	Cuttings	1914
3500FE	402	SW	Cuttings	1914
3501EQ	403	S	Old Coal Level	1903
3502EU	403	NW	Unspecified Pit	1901
3503EU	404	NW	Unspecified Pit	1965
3504EU	404	NW	Unspecified Ground Workings	1914
3505EU	404	NW	Unspecified Ground	1914

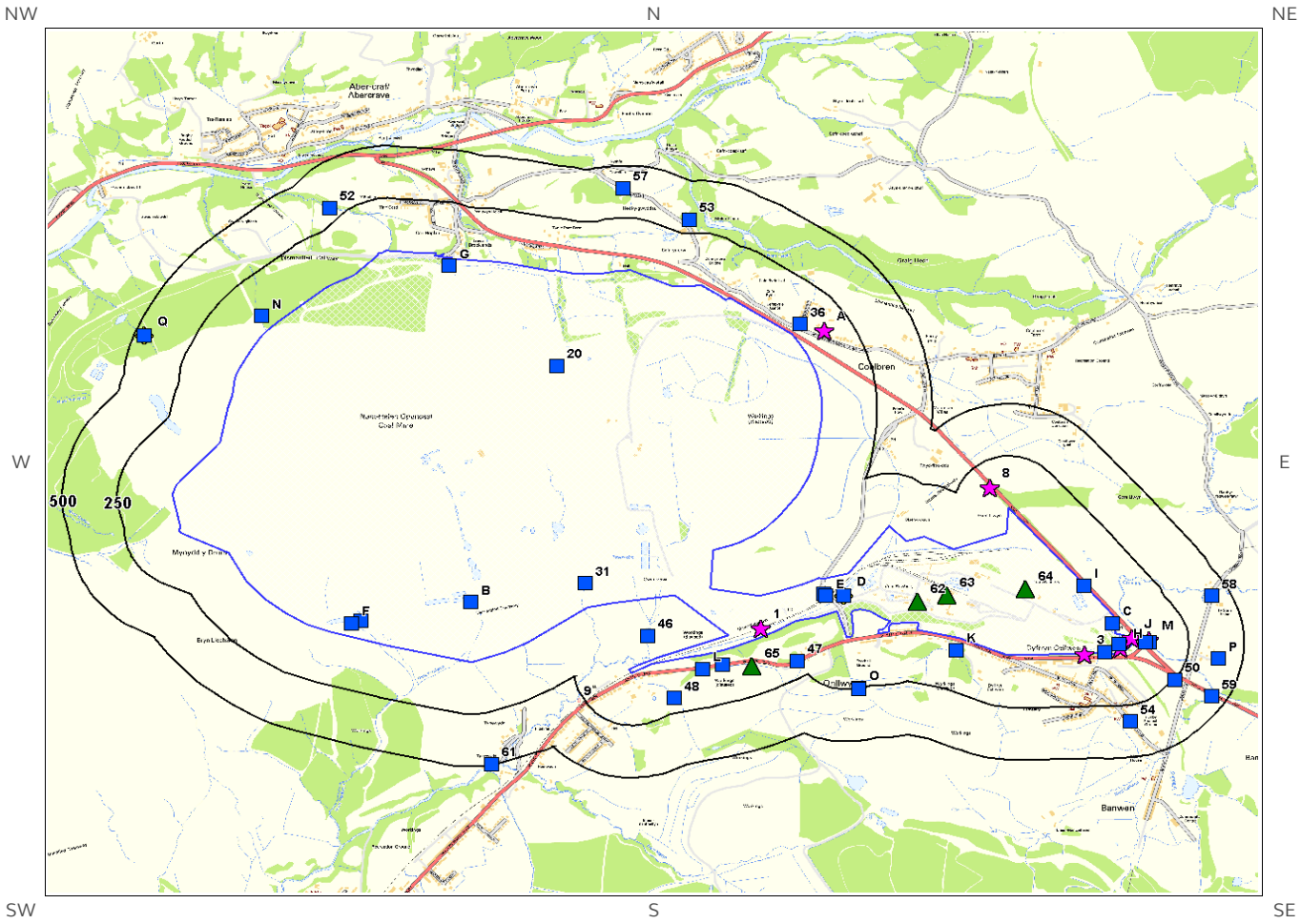
			Workings	
3506FS	404	E	Pond	1965
3507FS	404	E	Pond	1987
3508FE	404	SE	Cuttings	1948
3509EL	404	NW	Brick Works	1921
3510EL	404	NW	Unspecified Ground Workings	1921
3511EL	404	NW	Brick Works	1921
3512EL	404	NW	Unspecified Ground Workings	1921
3513EX	405	SE	Old Coal Level	1921
3514EL	405	NW	Unspecified Ground Workings	1948
3515EL	406	NW	Unspecified Ground Workings	1921
3516FE	408	SE	Cuttings	1921
3517FH	408	S	Unspecified Ground Workings	1921
3518FE	410	SE	Cuttings	1921
3519FE	412	SW	Cuttings	1921
3520FJ	413	SE	Old Coal Level	1921
3521FJ	414	SE	Old Coal Level	1948
3522EU	414	NW	Unspecified Heap	1921
3523FK	415	E	Unspecified Ground Workings	1948
3524FK	415	E	Unspecified Ground Workings	1921
3525FK	415	E	Unspecified Ground Workings	1921
3526FJ	417	SE	Old Coal Level	1921
3527FJ	417	SE	Old Coal Level	1921
3528EU	417	NW	Unspecified Heap	1877
3529FJ	417	SE	Old Coal Level	1921
3530EU	420	NW	Unspecified Heap	1948
3531EU	420	NW	Unspecified Heap	1921
3532EU	420	NW	Unspecified Heap	1921
3533FK	425	E	Old Ironstone Quarry	1877
3534FK	425	E	Unspecified Ground Workings	1903
3535FA	429	W	Unspecified Pit	1901
3536GK	430	W	Old Coal Pit	1877
3537FK	431	E	Unspecified Ground Workings	1921
3538GJ	431	W	Unspecified Ground Workings	1903
3539FL	432	NW	Unspecified Drift	1948
3540FK	434	E	Unspecified Ground Workings	1914
3541FK	434	E	Unspecified Ground Workings	1914

3542FA	434	W	Unspecified Heap	1914
3543FA	434	W	Unspecified Heap	1914
3544EW	439	NW	Unspecified Pit	1877
3545EN	440	S	Pond	1964
3546EN	440	S	Pond	1988
3547FN	441	NE	Unspecified Ground Workings	1977
3548FN	441	NE	Unspecified Ground Workings	1877
3549FP	444	NE	Cuttings	1877
3550EW	445	NW	Unspecified Ground Workings	1965
3551EW	445	NW	Unspecified Ground Workings	1903
3552EW	445	NW	Unspecified Ground Workings	1948
3553FN	447	NE	Unspecified Ground Workings	1962
3554FI	448	NE	Cuttings	1877
3555FN	448	NE	Unspecified Ground Workings	1921
3556FN	451	NE	Unspecified Ground Workings	1921
3557FN	451	NE	Unspecified Ground Workings	1921
3558FN	453	NE	Unspecified Ground Workings	1900
3559FN	454	NE	Unspecified Ground Workings	1903
3560EW	455	NW	Unspecified Heap	1877
3561FL	458	N	Colliery	1914
3562FL	458	N	Colliery	1914
3563EX	461	SE	Old Coal Level	1921
3564FL	462	N	Colliery	1921
3565FL	462	N	Colliery	1921
3566FL	463	N	Colliery	1921
3567FO	463	S	Old Coal Level	1921
3568FO	465	S	Old Coal Level	1921
3569FO	466	S	Old Coal Level	1948
3570FO	467	S	Old Coal Level	1921
3571FO	467	S	Old Coal Level	1921
3572FG	467	E	Unspecified Heap	1948
3573FH	469	S	Unspecified Ground Workings	1948
3574FG	470	E	Unspecified Ground Workings	1921
3575FG	470	E	Unspecified Ground Workings	1914
3576FG	470	E	Unspecified Ground Workings	1914
3577FG	470	E	Unspecified Heap	1921

3578FG	470	E	Unspecified Heap	1921
3579FS	471	E	Unspecified Heap	1877
3580EW	471	NW	Cuttings	1921
3581FL	471	N	Unspecified Drift	1921
3582FL	472	NW	Refuse Heap	1987
3583FH	474	S	Unspecified Ground Workings	1921
3584FH	474	S	Unspecified Ground Workings	1921
3585FN	476	NE	Unspecified Ground Workings	1877
3586GI	478	NW	Unspecified Old Quarry	1877
3587FH	479	S	Unspecified Ground Workings	1988
3588FH	479	S	Unspecified Ground Workings	1964
3589FP	480	NE	Cuttings	1921
3590FQ	481	S	Unspecified Ground Workings	1921
3591EL	481	W	Pond	1901
3592FQ	483	S	Unspecified Ground Workings	1921
3593FH	484	S	Unspecified Ground Workings	1903
3594FH	485	S	Unspecified Ground Workings	1876
3595FQ	485	S	Old Coal Level	1948
3596FQ	485	S	Unspecified Heap	1921
3597FQ	485	S	Unspecified Heap	1921
3598FK	486	E	Unspecified Ground Workings	1921
3599FQ	487	S	Unspecified Ground Workings	1876
3600FQ	487	S	Old Coal Level	1900
3601FP	488	NE	Cuttings	1948
3602FP	488	NE	Cuttings	1903
3603FL	488	N	Unspecified Heap	1965
3604FQ	489	S	Old Coal Level	1903
3605FR	491	N	Unspecified Ground Workings	1903
3606FR	491	N	Old Ironstone Quarry	1877
3607FS	491	E	Unspecified Heap	1948
3608FK	491	E	Unspecified Ground Workings	1914
3609FK	491	E	Unspecified Ground Workings	1914
3610FG	492	E	Unspecified Heap	1965
3611FG	492	E	Unspecified Heap	1987
3612FL	493	N	Refuse Heap	1914
3613FL	493	N	Refuse Heap	1914
3614FS	493	E	Unspecified Heap	1903

3615EX	493	SE	Unspecified Pit	1964
3616EX	493	SE	Unspecified Pit	1988
3617FG	494	E	Unspecified Ground Workings	1921
3618FG	494	E	Unspecified Ground Workings	1921
3619FS	496	E	Unspecified Ground Workings	1921
3620FS	496	E	Unspecified Ground Workings	1921
3621FS	496	E	Unspecified Heap	1877
3622FS	496	E	Unspecified Heap	1903
3623FL	497	N	Refuse Heap	1948
3624FO	497	S	Unspecified Ground Workings	1921
3625FO	497	S	Unspecified Ground Workings	1921
3626FO	498	S	Old Coal Level	1948
3627FL	499	N	Refuse Heap	1921
3628FL	499	N	Refuse Heap	1921
3629FO	499	S	Unspecified Ground Workings	1921
3630FO	499	S	Unspecified Ground Workings	1921

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- 250 / 500 Search Buffers (m)
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

2

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
10D	0	On Site	284200	Name: Onllwyn Washery	Authorised Substances: Iron

ID	Distance (m)	Direction	NGR	Details	
			210500	Status: Active Receiving Water: River Dulais	
11Q	456	NW	281028 211744	Name: Nant Helen Occs Treatment Area H Status: Active Receiving Water: None	Authorised Substances: pH

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

4

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
62	0	On Site	284534 210463	Address: Celtic Energy, Nant Helen Opencast Site, Coelbren, Neath, West Glamorgan, SA10 9NL Process: Other Mineral Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
63	0	On Site	284669 210494	Address: Celtic Energy Limited, Onllwyn Central Washery, Onllwyn, Neath Port Talbot, SA10 9HN Process: Coal & Coke Status: Current Permit Permit Type: Part B	Enforcement: No enforcements issued Date of Enforcement: No enforcements issued Comment: No enforcements issued
64	0	On Site	285022 210523	Address: CPL Distribution Limited, CPL Onllwyn Depot, Onllwyn Washery, Seven Sisters, Neath Port Talbot, SA10 9HN Process: Coal & Coke Status: Current Permit Permit Type: Part B	Enforcement: No enforcements issued Date of Enforcement: No enforcements issued Comment: No enforcements issued
65	123	S	283784 210155	Address: Celtic Energy Limited/CPL Distribution Limited, Onllwyn Central Washery, Onllwyn, Neath, Port Talbot, SA10 9HN Process: Coal & Coke Status: Historical Permit Permit Type: Part B	Enforcement: No enforcements issued Date of Enforcement: 08/04/2003 Comment: No enforcements issued

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
12B	0	On Site	282510 210470	Address: STORM OUTLET B2 NANT HELEN OCCS , STORM OUTLET B2 NANT HELEN OCCS, NANT HELEN OCCS , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032102 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: Effective Issue date: 12/03/1997 Effective Date: 13-Mar-1997 Revocation Date:
13B	0	On Site	282510 210470	Address: STORM OUTLET B2 NANT HELEN OCCS , STORM OUTLET B2 NANT HELEN OCCS, NANT HELEN OCCS , Effluent Type: MINEWATER Permit Number: BM0032107 Permit Version: -9999	Receiving Water: R DULAIS Status: Effective Issue date: 12/03/1997 Effective Date: 12-Mar-1997 Revocation Date:
14C	0	On Site	285420 210370	Address: HEOL GAER ONLLWYN SWO 1, ONLLWYN SWO 1 Effluent Type: UNSPECIFIED Permit Number: BW2903101 Permit Version: -9999	Receiving Water: CAMNANT (DYFFRYN CELLWEN) Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 17/06/1963 Effective Date: 17-Jun-1963 Revocation Date: 30/03/2008
15C	0	On Site	285420 210370	Address: HEOL GAER ONLLWYN SWO 1, ONLLWYN SWO 1 Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BW2903101 Permit Version: -9999	Receiving Water: CAMNANT (DYFFRYN CELLWEN) Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 07/03/2005 Effective Date: 01-Apr-2008 Revocation Date: 31/03/2009
16D	0	On Site	284200 210500	Address: ONLLWYN WASHERY NEATH , NEATH Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BA2010001 Permit Version: -9999	Receiving Water: AFON DULAIS (TRIB OF RIVER NEA Status: Effective Issue date: 30/03/1994 Effective Date: 30-Mar-1994 Revocation Date:
17E	0	On Site	284120 210500	Address: ONLLWYN WASHERY NEATH , NEATH Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BA2010001 Permit Version: -9999	Receiving Water: AFON DULAIS (TRIB OF RIVER NEA Status: REVOKED - UNSPECIFIED Issue date: 30/07/1985 Effective Date: 30-Jul-1985 Revocation Date: 29/03/1994
18F	0	On Site	281970 210370	Address: STORM OUTLET A2 NANT HELEN OCCS , STORM OUTLET A2 NANT HELEN OCCS, NANT HELEN OCCS Effluent Type: MINEWATER Permit Number: BM0032106 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 14/09/1992 Effective Date: 14-Sep-1992 Revocation Date: 12/03/1997
19E	0	On Site	284110 210510	Address: ONLLWYN OPENCAST SITE - POINTS Effluent Type: UNSPECIFIED Permit Number: BB3024801 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 28/06/1971 Effective Date: 28-Jun-1971 Revocation Date: 02/03/1992
20	0	On Site	282900 211600	Address: ONLLWYN OPENCAST SITE POINT B (ABAN, ONLLWYN OPENCAST SITE POINT B (A, POINT B (ABANDONED) Effluent Type: UNSPECIFIED Permit Number: BC0013002	Receiving Water: NANT HELEN Status: CONSENT EXPIRED - TIME LIMIT Issue date: 01/07/1971 Effective Date: 01-Jul-1971 Revocation Date: 02/03/1992

ID	Distance (m)	Direction	NGR	Details	
				Permit Version: -9999	
21F	0	On Site	281970 210370	Address: STORM OUTLET A2 NANT HELEN OCCS , STORM OUTLET A2 NANT HELEN OCCS, NANT HELEN OCCS Effluent Type: MINEWATER Permit Number: BM0032106 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 12/03/1997 Effective Date: 13-Mar-1997 Revocation Date: 10/07/2001
22F	0	On Site	281970 210370	Address: STORM OUTLET A2 NANT HELEN OCCS , STORM OUTLET A2 NANT HELEN OCCS, NANT HELEN OCCS Effluent Type: MINEWATER Permit Number: BM0032106 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 11/07/1990 Effective Date: 11-Jul-1990 Revocation Date: 13/09/1992
23I	0	On Site	285290 210550	Address: VEDMORE SIDINGS OUTLET B , Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: BB4027002 Permit Version: -9999	Receiving Water: NANT CAMNANT Status: Effective Issue date: 20/03/1989 Effective Date: 20-Mar-1989 Revocation Date:
24G	0	On Site	282410 212080	Address: NANT HELEN OCCS OUTLET D , OUTLET D , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032104 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED - UNSPECIFIED Issue date: 11/07/1990 Effective Date: 11-Jul-1990 Revocation Date: 13/09/1992
25G	0	On Site	282410 212080	Address: NANT HELEN OCCS OUTLET D , OUTLET D , Effluent Type: UNSPECIFIED Permit Number: BM0032104 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED - UNSPECIFIED Issue date: 30/01/1985 Effective Date: 30-Jan-1985 Revocation Date: 10/07/1990
26G	0	On Site	282410 212080	Address: NANT HELEN OCCS OUTLET D , OUTLET D , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032104 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 14/09/1992 Effective Date: 14-Sep-1992 Revocation Date: 18/11/1998
27F	0	On Site	282010 210380	Address: NANT HELEN OCCS OUTLET A1 , OUTLET A1 , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032101 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 11/07/1990 Effective Date: 11-Jul-1990 Revocation Date: 13/09/1992
28F	0	On Site	282010 210380	Address: NANT HELEN OCCS OUTLET A1 , OUTLET A1 , Effluent Type: UNSPECIFIED Permit Number: BM0032101 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 30/01/1985 Effective Date: 30-Jan-1985 Revocation Date: 10/07/1990
29F	0	On Site	282010 210380	Address: NANT HELEN OCCS OUTLET A1 , OUTLET A1 , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032101 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 14/09/1992 Effective Date: 14-Sep-1992 Revocation Date: 10/07/2001
30H	0	On Site	285450 210270	Address: ONLLWYN STORM WATER OVERFLOW, STORM WATER OVERFLOW Effluent Type: UNSPECIFIED Permit Number: BP0058701 Permit Version: -9999	Receiving Water: RIVER CAMNANT Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 02/09/1987 Effective Date: 02-Sep-1987 Revocation Date: 17/02/1988
31	0	On Site	283030 210560	Address: OUTLET C NANT HELEN OCCS , NANT HELEN OCCS ,	Receiving Water: RIVER DULAIS Status: Effective

ID	Distance (m)	Direction	NGR	Details	
				Effluent Type: MINEWATER Permit Number: BM0032103 Permit Version: -9999	Issue date: 08/01/1998 Effective Date: 09-Jan-1998 Revocation Date:
32I	0	On Site	285290 210550	Address: VEDMORE SIDINGS OUTLET B , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BB4027001 Permit Version: -9999	Receiving Water: NANT CAMNANT Status: Effective Issue date: 20/03/1989 Effective Date: 20-Mar-1989 Revocation Date:
33H	5	E	285382 210231	Address: DYFFRYN CELLWEN, NR 7 SISTERS Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: BP0135001 Permit Version: -9999	Receiving Water: AFON CAMNANT TO PYRDDIN - R. N Status: Effective Issue date: 20/02/2009 Effective Date: 20-Feb-2009 Revocation Date:
34J	54	E	285570 210280	Address: DYFFRYN CELLWEN, NR 7 SISTERS Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BP0135001 Permit Version: -9999	Receiving Water: AFON CAMNANT TO PYRDDIN - R. N Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 01/08/1990 Effective Date: 01-Aug-1990 Revocation Date: 19/02/2009
35J	54	E	285570 210280	Address: DYFFRYN CELLWEN, NR 7 SISTERS Effluent Type: UNSPECIFIED Permit Number: BP0135001 Permit Version: -9999	Receiving Water: AFON CAMNANT TO PYRDDIN - R. N Status: REVOKED - UNSPECIFIED Issue date: 10/07/1990 Effective Date: 10-Jul-1990 Revocation Date: 31/07/1990
36	60	NE	284000 211800	Address: ONLLWYN OPENCAST SITE POINT A (ABAN, ONLLWYN OPENCAST SITE POINT A (A, POINT A (ABANDONED) Effluent Type: UNSPECIFIED Permit Number: BC0013001 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF NANT LLECH Status: CONSENT EXPIRED - TIME LIMIT Issue date: 01/07/1971 Effective Date: 01-Jul-1971 Revocation Date: 02/03/1992
37K	62	S	284710 210240	Address: ONLLWYN A.R'WAY TIP, AERIAL ROPEWAY TIP, PT.B Effluent Type: UNSPECIFIED Permit Number: BP0155502 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 01/01/1901 Effective Date: 01-Jan-1901 Revocation Date: 13/03/1990
38K	62	S	284710 210240	Address: ONLLWYN A.R'WAY TIP, AERIAL ROPEWAY TIP, PT.B Effluent Type: UNSPECIFIED Permit Number: BP0155502 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 14/03/1990 Effective Date: 14-Mar-1990 Revocation Date: 18/05/1993
39L	67	S	283560 210150	Address: DRYM OPENCAST SITE - POINT E (Effluent Type: MINEWATER Permit Number: BB4004401 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 09/08/1973 Effective Date: 09-Aug-1973 Revocation Date: 24/12/1991
40L	68	S	283650 210170	Address: DRYM OPENCAST SITE - POINT C (Effluent Type: MINEWATER Permit Number: BB3025802 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 09/08/1971 Effective Date: 09-Aug-1971 Revocation Date: 11/06/1986
41M	70	E	285586 210280	Address: DYFFRYN CELLWEN, NR 7 SISTERS Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: BP0135001 Permit Version: -9999	Receiving Water: AFON CAMNANT TO PYRDDIN - R. N Status: Effective Issue date: 20/02/2009 Effective Date: 20-Feb-2009 Revocation Date:

ID	Distance (m)	Direction	NGR	Details	
42N	71	NW	281560 211840	Address: OUTLET E NANT HELEN OCCS , NANT HELEN OCCS , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032105 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED - UNSPECIFIED Issue date: 11/07/1990 Effective Date: 11-Jul-1990 Revocation Date: 13/09/1992
43N	71	NW	281560 211840	Address: OUTLET E NANT HELEN OCCS , NANT HELEN OCCS , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032105 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED - UNSPECIFIED Issue date: 14/09/1992 Effective Date: 14-Sep-1992 Revocation Date: 12/03/1997
44N	71	NW	281560 211840	Address: OUTLET E NANT HELEN OCCS , NANT HELEN OCCS , Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: BM0032105 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 12/03/1997 Effective Date: 13-Mar-1997 Revocation Date: 01/11/2002
45N	71	NW	281560 211840	Address: OUTLET E NANT HELEN OCCS , NANT HELEN OCCS , Effluent Type: UNSPECIFIED Permit Number: BM0032105 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER TAWE Status: REVOKED - UNSPECIFIED Issue date: 30/01/1985 Effective Date: 30-Jan-1985 Revocation Date: 10/07/1990
46	116	N	283310 210310	Address: ONLLWYN RD SWO1A GOLWG Y BRY, ONLLWYN RD SWO1A GOLWG Y, SWO1A GOLWG Y BRYN Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BW2903001 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: Surrendered Issue date: 17/06/1963 Effective Date: 17-Jun-1963 Revocation Date:
47	172	SE	283990 210190	Address: DRYM OPENCAST SITE - POINT D (Effluent Type: MINEWATER Permit Number: BB3025803 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 09/08/1971 Effective Date: 09-Aug-1971 Revocation Date: 22/01/1992
48	180	S	283430 210010	Address: DRYM OPENCAST SITE - POINT B (Effluent Type: UNSPECIFIED Permit Number: BB3025801 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 09/08/1971 Effective Date: 09-Aug-1971 Revocation Date: 22/01/1992
49O	250	S	284270 210060	Address: ONLLWYN AERIAL ROPEWAY, (POINT A) Effluent Type: UNSPECIFIED Permit Number: BP0155501 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: CONSENT EXPIRED - TIME LIMIT Issue date: 14/03/1990 Effective Date: 14-Mar-1990 Revocation Date: 18/05/1993
50	253	SE	285700 210100	Address: TAVERN Y BANWEN BANWEN, BANWEN Effluent Type: UNSPECIFIED Permit Number: BM0046101 Permit Version: -9999	Receiving Water: UNDERGROUND STRATA Status: CONSENT EXPIRED - TIME LIMIT Issue date: 26/04/1985 Effective Date: 26-Apr-1985 Revocation Date: 11/07/1994
51O	255	S	284270 210055	Address: ONLLWYN AERIAL ROPEWAY, (POINT A) Effluent Type: UNSPECIFIED Permit Number: BP0155501 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: REVOKED - UNSPECIFIED Issue date: 01/01/1901 Effective Date: 01-Jan-1901 Revocation Date: 13/03/1990
52	307	NW	281871 212355	Address: INTERNATIONAL TIPS RECLAMATION AREA, INTERNATIONAL TIPS RECLAMATION, NANT HELEN	Receiving Water: A TRIB OF THE RIVER TAWE Status: NEW CONSENT (WRA 91, S88 &

ID	Distance (m)	Direction	NGR	Details	
				EXTENSION OCCS, COELBREN, NR ABERCRAF Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: BP0300901 Permit Version: -9999	SCHED 10 AS AMENDED BY Issue date: 28/02/2003 Effective Date: 28-Feb-2003 Revocation Date:
53	316	N	283500 212300	Address: CEFN YR ERW FARM, ABERCRAF, SWANSEA VALLEY, Swansea, SA9 1UD Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: BP0100601 Permit Version: -9999	Receiving Water: UNDERGROUND STRATA Status: Effective Issue date: 26/11/2012 Effective Date: 26-Nov-2012 Revocation Date:
54	329	S	285500 209900	Address: PLAYGROUND MAIN ROAD DYFFRYN C Effluent Type: UNSPECIFIED Permit Number: BB4024401 Permit Version: -9999	Receiving Water: RIVER PYRDDIN VIA NANT CAMNANT Status: CONSENT EXPIRED - TIME LIMIT Issue date: 07/11/1977 Effective Date: 07-Nov-1977 Revocation Date: 19/10/1992
55P	391	E	285900 210200	Address: 11 CWMCELYN BUNGALOWS CAMNANT RD. B, 11 CWMCELYN BUNGALOWS CAMNANT RD, CAMNANT RD. BANWEN NEATH., BANWEN NEATH., NEATH. Effluent Type: UNSPECIFIED Permit Number: BP0133301 Permit Version: -9999	Receiving Water: TO LAND Status: CONSENT EXPIRED - TIME LIMIT Issue date: 23/08/1989 Effective Date: 23-Aug-1989 Revocation Date: 11/07/1994
56P	391	E	285900 210200	Address: 11 CWMCELYN BUNGALOWS CAMNANT RD. B, 11 CWMCELYN BUNGALOWS CAMNANT RD, CAMNANT RD. BANWEN NEATH., BANWEN NEATH., NEATH. Effluent Type: UNSPECIFIED Permit Number: BP0133302 Permit Version: -9999	Receiving Water: TO LAND Status: CONSENT EXPIRED - TIME LIMIT Issue date: 27/11/1989 Effective Date: 27-Nov-1989 Revocation Date: 11/07/1994
57	393	N	283200 212450	Address: BRONWYDD CAEHOPKIN ABERCRAVE SWANSE, BRONWYDD CAEHOPKIN ABERCRAVE SWA, CAEHOPKIN ABERCRAVE SWANSEA, ABERCRAVE SWANSEA, SWANSEA Effluent Type: UNSPECIFIED Permit Number: BM0033201 Permit Version: -9999	Receiving Water: UNDERGROUND STRATA Status: CONSENT EXPIRED - TIME LIMIT Issue date: 21/10/1983 Effective Date: 21-Oct-1983 Revocation Date: 24/02/1995
58	420	NE	285870 210500	Address: TY SARN HELEN CAMNANT BANWEN NEATH, TY SARN HELEN CAMNANT BANWEN NEA, CAMNANT BANWEN NEATH, BANWEN NEATH, NEATH Effluent Type: UNSPECIFIED Permit Number: BM0006301 Permit Version: -9999	Receiving Water: UNDERGROUND STRATA Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 16/06/1980 Effective Date: 16-Jun-1980 Revocation Date:
59	436	SE	285870 210020	Address: POINT C - BANWEN DISPOSAL PT BANW, POINT C - BANWEN DISPOSAL PT B, BANWEN, NEATH Effluent Type: MINEWATER Permit Number: BA2014403 Permit Version: -9999	Receiving Water: RIVER CAMNANT Status: CONSENT EXPIRED - TIME LIMIT Issue date: 21/06/1993 Effective Date: 21-Jun-1993 Revocation Date: 05/06/1996
60Q	456	NW	281028 211744	Address: NANT HELEN OCCS TREATM'T AREA H, COELBREN, ABERCRAVE, SWANSEA Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: BP0345401 Permit Version: -9999	Receiving Water: UNNAMED TRIB OF TAWE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 27/06/2005 Effective Date: 27-Jun-2005 Revocation Date: 19/03/2008

ID	Distance (m)	Direction	NGR	Details	
61	497	S	282604 209695	Address: TYNEWYDD FARM SEVEN SISTERS NEATH, TYNEWYDD FARM, SEVEN SISTERS, NEATH, NEATH PORT TALBOT, SA10 9BP Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: BP0318401 Permit Version: -9999	Receiving Water: RIVER DULAIS Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 06/08/2004 Effective Date: 06-Aug-2004 Revocation Date:

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

8

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	0	On Site	283823.0 210346.0	Incident Date: 16-Oct-2013 Incident Identification: 1168129.0 Pollutant: Inert Materials and Wastes Pollutant Description: Coal	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2H	0	On Site	285452.0 210250.0	Incident Date: 21-Jun-2001 Incident Identification: 10516.0 Pollutant: Sewage Materials	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
				Pollutant Description: Crude Sewage	
3	1	S	285288.0 210222.0	Incident Date: 16-Jun-2014 Incident Identification: 1245993.0 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
4J	4	NE	285503.0 210298.0	Incident Date: 25-May-2001 Incident Identification: 6652.0 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5M	67	E	285582.0 210288.0	Incident Date: 10-Apr-2014 Incident Identification: 1226179.0 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6A	123	NE	284109.0 211768.0	Incident Date: 06-Feb-2016 Incident Identification: 1408918.0 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
7A	123	NE	284109.0 211768.0	Incident Date: 02-Feb-2016 Incident Identification: 1407834.0 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8	134	NW	284860.0 211020.0	Incident Date: 09-May-2012 Incident Identification: 989062.0 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

1

The following NIRS List 1 records are represented as points on the Environmental Permits, Incidents and Registers Map:

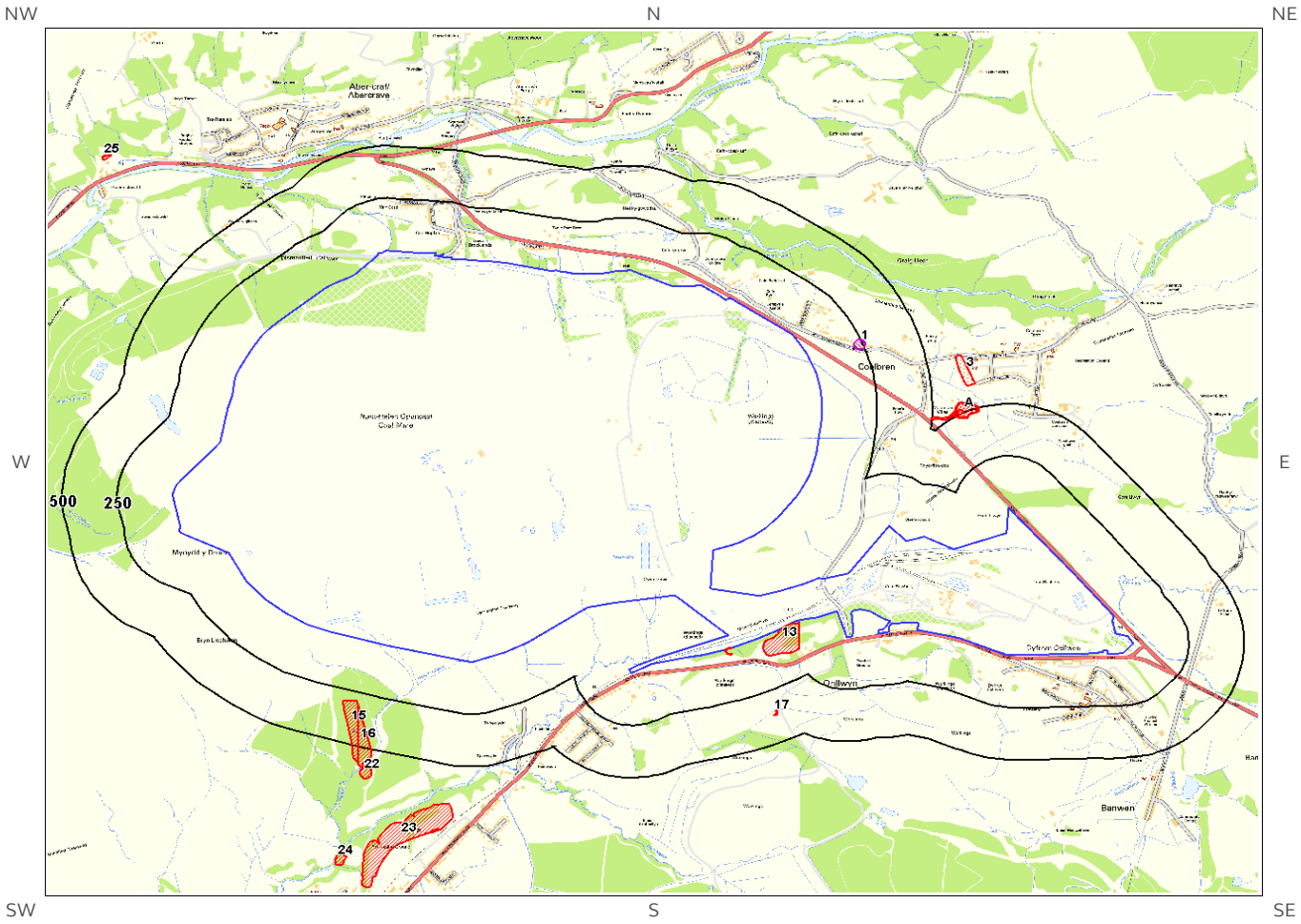
ID	Distance(m)	Direction	NGR	Details	
9	272	SW		Incident Date: 04-Dec-1999 Incident Identification: 6335.0 Catchments Name: DULAIS Water Description: RIVER STRETCH (FRESHWATER) Water Course: DULAIS Incident Substantiated: Yes	Priority Description: Immediate (2 Hours) Waste Description: Not Available Water Impact: Significant Impact Land Impact: No Impact Air Impact: No Impact Action Taken: Not Available

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site	0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

4

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
2A	473	NW		Site Address: Moorside Villas Waste Licence: - Site Reference: CS11/38 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1974
3	612	N		Site Address: Coelbren Waste Licence: - Site Reference: CS11/43 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1391	W		Site Address: Land at 295-297 Brecon Road Waste Licence: - Site Reference: CS11/35 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1950
Not shown	1496	NE		Site Address: Ynyswen Tip Waste Licence: - Site Reference: CS11/39 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Ystradgynlais Rural District Council Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1974

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

16

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
13	0	On Site	283918 210294	Refuse Tip	1961 mapping	Polygon
14	0	On Site	283668 210235	Refuse Tip	1961 mapping	Polygon
15	290	S	281966 209849	Refuse Tip	1961 mapping	Polygon
16	310	S	282031 209830	Refuse Tip	1962 mapping	Polygon
17	350	S	283898 209942	Refuse Tip	1962 mapping	Polygon
18A	469	NW	284747 211387	Refuse Tip	1987 mapping	Polygon
19A	471	NW	284746 211388	Refuse Tip	1986 mapping	Polygon
20A	497	NW	284716 211376	Refuse Tip	1979 mapping	Polygon
21A	499	NW	284721 211380	Refuse Tip	1962 mapping	Polygon
22	587	S	282035 209654	Refuse Tip	1962 mapping	Polygon
23	687	S	282106 209306	Refuse Tip	1962 mapping	Polygon
24	1015	S	281921 209243	Refuse Tip	1961 mapping	Polygon
25	1097	NW	280861 212598	Refuse Tip	1962 mapping	Polygon
Not shown	1467	S	284486 208749	Refuse Tip	1961 mapping	Polygon
Not shown	1494	S	284544 208749	Refuse Tip	1961 mapping	Polygon
Not shown	1496	NE	284316 213306	Refuse Tip	1962 mapping	Polygon

---

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
1	211	NE	284273 211703	Type of Site: Waste Transfer Station (Conversion/Extension) Site Address: Maesgwyn Open Cast Site, Banwen, Coelbren, NEATH, West Glamorgan, SA10 9NY	Planning Application Reference: P2008/0869 Date: -	Further Details: Scheme comprises change of use to transfer station and construction of ancillary offices with car parking spaces and landscaping. Construction - black top surfacing, planting site works. An application (ref: P2008/0869) for detailed planning permissiowas granted by Neath & Port Talbot B.C. Planning decision obtained Data Source: Historic Planning Application Data Type: Point

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

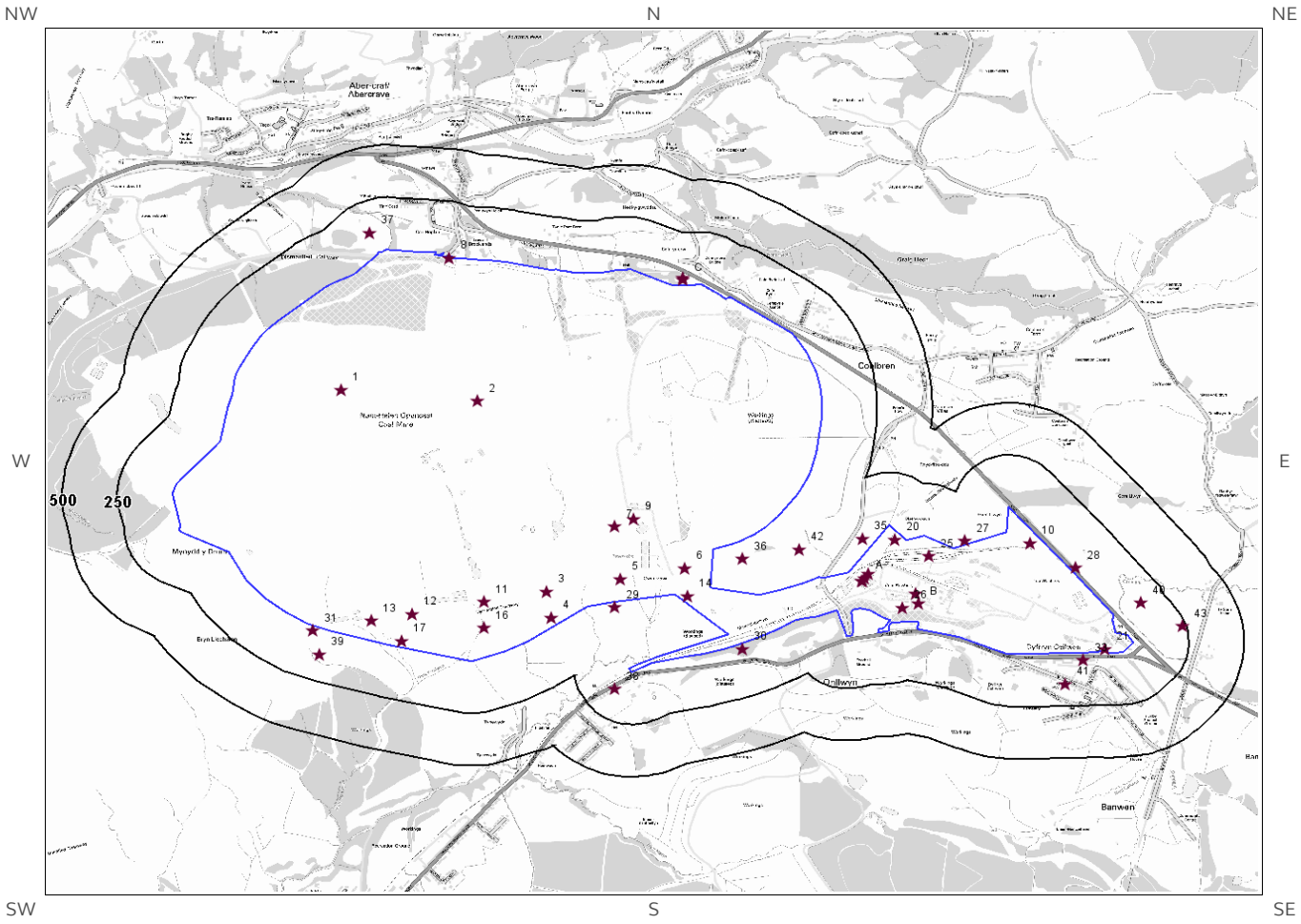
7

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1230	W	280308 212027	Site Address: Dan Y Parc Council Depot, Caerbont, Abercrave, Powys, SA9 1SP Type: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: POW070 EPR reference: UP3290VF/A001 Operator: Powys County Council Waste Management licence No: 102481 Annual Tonnage: 0.0	Issue Date: 28/06/2012 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued Site Name: Dan Y Parc Council Depot Correspondence Address: -
Not shown	1230	W	280307 212026	Site Address: Dan Y Parc Council Depot, Caerbont, Abercrave, Powys, SA9 1SP Type: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: UP3290VF EPR reference: - Operator: Powys County Council Waste Management licence No: 0 Annual Tonnage: 6860.0	Issue Date: 28/06/2012 Effective Date: 28/06/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective Site Name: - Correspondence Address: -
Not	1230	W	280307	Site Address: Dan Y Parc Council Depot,	Issue Date: 28/06/2012

ID	Distance (m)	Direction	NGR	Details	
shown			212026	Caerbont, Abercrave, Powys, SA9 1SP Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: POW070 EPR reference: EA/EPR/UP3290VF/A001 Operator: Powys County Council Waste Management licence No: 102481 Annual Tonnage: 6860.0	Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Dan Y Parc Council Depot Correspondence Address: -
Not shown	1230	W	280307 212026	Site Address: Dan Y Parc Council Depot, Caerbont, Abercrave, Powys, SA9 1SP Type: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: UP3290VF EPR reference: - Operator: - Waste Management licence No: 102481 Annual Tonnage: 6860.0	Issue Date: 28/06/2012 Effective Date: 28/06/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective Site Name: - Correspondence Address: -
Not shown	1230	W	280307 212026	Site Address: Dan Y Parc Council Depot, Caerbont, , , Abercrave, Powys, SA9 1SP Type: Household, Commercial & Industrial Waste T Stn Size: - Environmental Permitting Regulations (Waste) Licence Number: UP3290VF EPR reference: - Operator: Powys County Council Waste Management licence No: 102481 Annual Tonnage: 6860.0	Issue Date: 28/06/2012 Effective Date: 28/06/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective Site Name: - Correspondence Address: -
Not shown	1230	W	280307 212026	Site Address: Dan Y Parc Council Depot, Caerbont, , , Abercrave, Powys, SA9 1SP Type: Household, Commercial & Industrial Waste T Stn Size: - Environmental Permitting Regulations (Waste) Licence Number: UP3290VF EPR reference: - Operator: Powys County Council Waste Management licence No: 102481 Annual Tonnage: 6860.0	Issue Date: 28/06/2012 Effective Date: 28/06/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective Site Name: - Correspondence Address: -
Not shown	1230	W	280307 212026	Site Address: Dan Y Parc Council Depot, Caerbont, Powys, Abercrave, Powys, SA9 1SP Type: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: UP3290VF EPR reference: - Operator: Powys County Council Waste Management licence No: 102481 Annual Tonnage: 6860.0	Issue Date: 28/06/2012 Effective Date: 28/06/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective Site Name: - Correspondence Address: -

4. Current Land Use Map



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Site Outline

250
500
Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 43

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Opencast Mine Workings	281919 211486	Powys, SA9	Unspecified Quarries Or Mines	Extractive Industries
2	0	On Site	Nant-Helen Opencast Coal Mine	282540 211432	Powys, SA9	Unspecified Quarries Or Mines	Extractive Industries
3	0	On Site	Pylon	282853 210520	Powys, SA10	Electrical Features	Infrastructure and Facilities
4	0	On Site	Pylon	282874 210396	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
5	0	On Site	Pylon	283188 210579	Powys, SA10	Electrical Features	Infrastructure and Facilities
6	0	On Site	Pylon	283477 210630	Powys, SA10	Electrical Features	Infrastructure and Facilities
7	0	On Site	Opencast Workings	283159 210831	Powys, SA10	Unspecified Quarries Or Mines	Extractive Industries
8	0	On Site	Tank	282408 212116	Powys, SA9	Tanks (Generic)	Industrial Features
9	0	On Site	Tank	283248 210867	Powys, SA10	Tanks (Generic)	Industrial Features
10	0	On Site	Pylon	285045 210751	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
11	0	On Site	Pylon	282570 210470	Powys, SA10	Electrical Features	Infrastructure and Facilities
12	0	On Site	Pylon	282244 210412	Powys, SA10	Electrical Features	Infrastructure and Facilities
13	0	On Site	Pylon	282058 210379	Powys, SA10	Electrical Features	Infrastructure and Facilities
14	0	On Site	Pylon	283490 210499	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
15B	0	On Site	Celtic Energy	284538 210462	Coelbren, Neath, West Glamorgan, SA10 9NL	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
16	0	On Site	Pylon	282567 210346	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
17	0	On Site	Pylon	282196 210283	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
18A	0	On Site	Tank	284292 210584	West Glamorgan, SA10	Tanks (Generic)	Industrial Features
19A	0	On Site	Tank	284309 210604	West Glamorgan, SA10	Tanks (Generic)	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
20	0	On Site	Pylon	284431 210769	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
21	0	On Site	Pumping Station	285384 210245	West Glamorgan, SA10	Water Pumping Stations	Industrial Features
22B	0	On Site	Works	284525 210509	West Glamorgan, SA10	Unspecified Works Or Factories	Industrial Features
23A	0	On Site	Tank	284285 210568	West Glamorgan, SA10	Tanks (Generic)	Industrial Features
24A	0	On Site	Tank	284282 210571	West Glamorgan, SA10	Tanks (Generic)	Industrial Features
25	0	On Site	Gantry	284586 210690	West Glamorgan, SA10	Travelling Cranes and Gantries	Industrial Features
26	0	On Site	CPL Distribution Ltd	284464 210442	Weighbridge, Onllwyn, Neath, West Glamorgan, SA10 9HN	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
27	20	N	Pylon	284748 210761	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
28	22	NE	Pylon	285250 210634	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
29	23	S	Pylon	283160 210444	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
30	23	S	Pylon	283740 210245	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
31	23	S	Pylon	281793 210332	Powys, SA10	Electrical Features	Infrastructure and Facilities
32C	28	N	Electricity Sub Station	283469 212011	Powys, SA9	Electrical Features	Infrastructure and Facilities
33	31	S	Electricity Sub Station	285286 210192	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
34C	36	N	Electricity Sub Station	283468 212019	Powys, SA9	Electrical Features	Infrastructure and Facilities
35	56	NW	Pylon	284284 210772	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
36	81	S	Pylon	283741 210676	Powys, SA10	Electrical Features	Infrastructure and Facilities
37	104	NW	Slag Heap (Disused)	282048 212236	Powys, SA9	Refuse Disposal Facilities	Infrastructure and Facilities
38	110	SW	R C Davies Skip Hire	283163 210054	48, Golwg y Bryn, Seven Sisters, Neath, West Glamorgan, SA10 9BY	Construction and Tool Hire	Hire Services
39	121	S	Pylon	281824 210219	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
40	136	NE	Pylon	285545 210465	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities
41	144	S	R C Davies Skip Hire	285203 210077	49, Main Road, Dyffryn Cellwen, West Glamorgan, SA10 9HR	Construction and Tool Hire	Hire Services
42	160	N	Pylon	283997 210721	Powys, SA10	Electrical Features	Infrastructure and Facilities
43	233	E	Pylon	285735 210354	West Glamorgan, SA10	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
PEAT-P	PEAT	PEAT
PEAT-P	PEAT	PEAT
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

5.3 Bedrock and Solid Geology

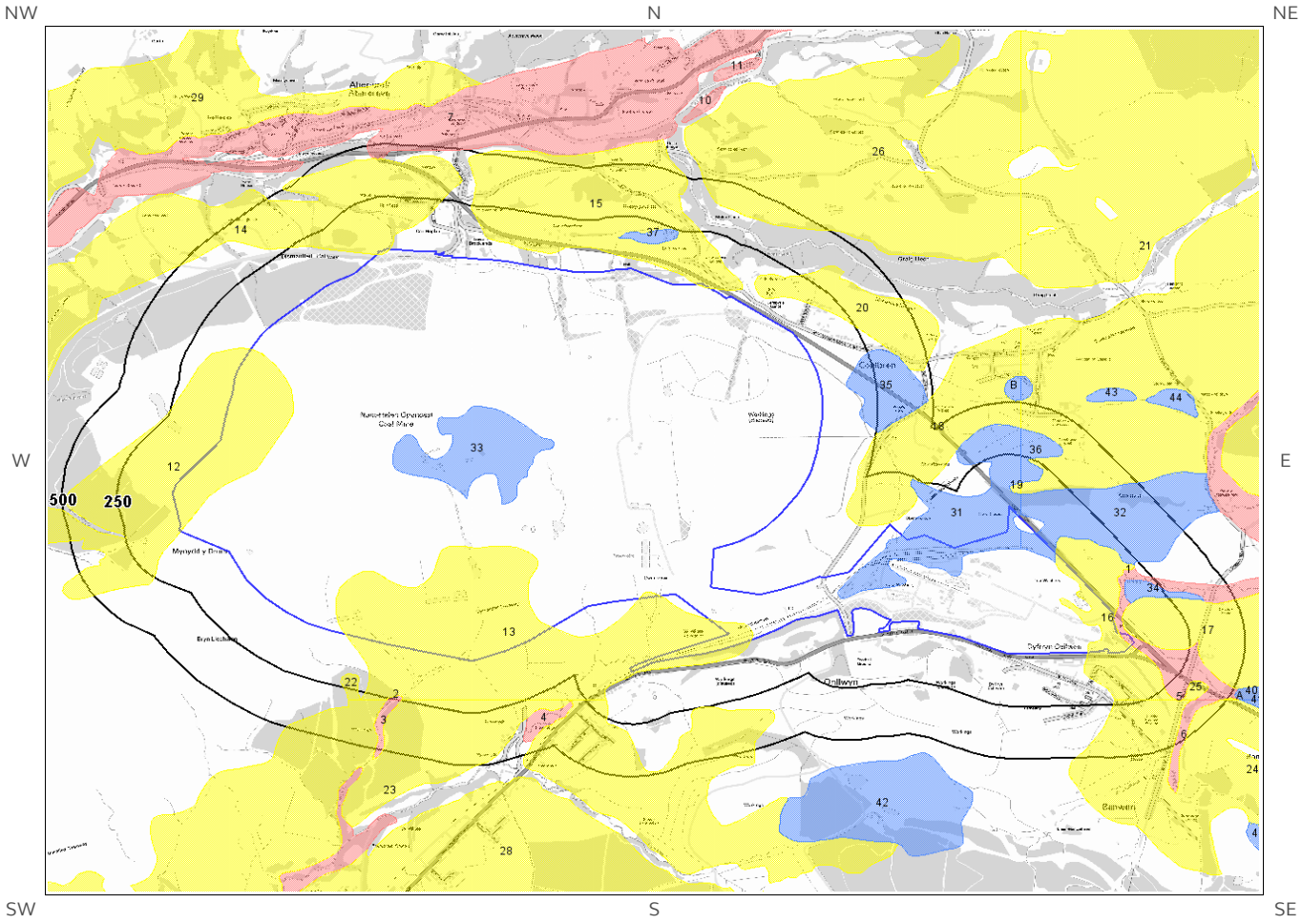
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SWMCM-SDST	SOUTH WALES MIDDLE COAL MEASURES FORMATION	SANDSTONE
SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

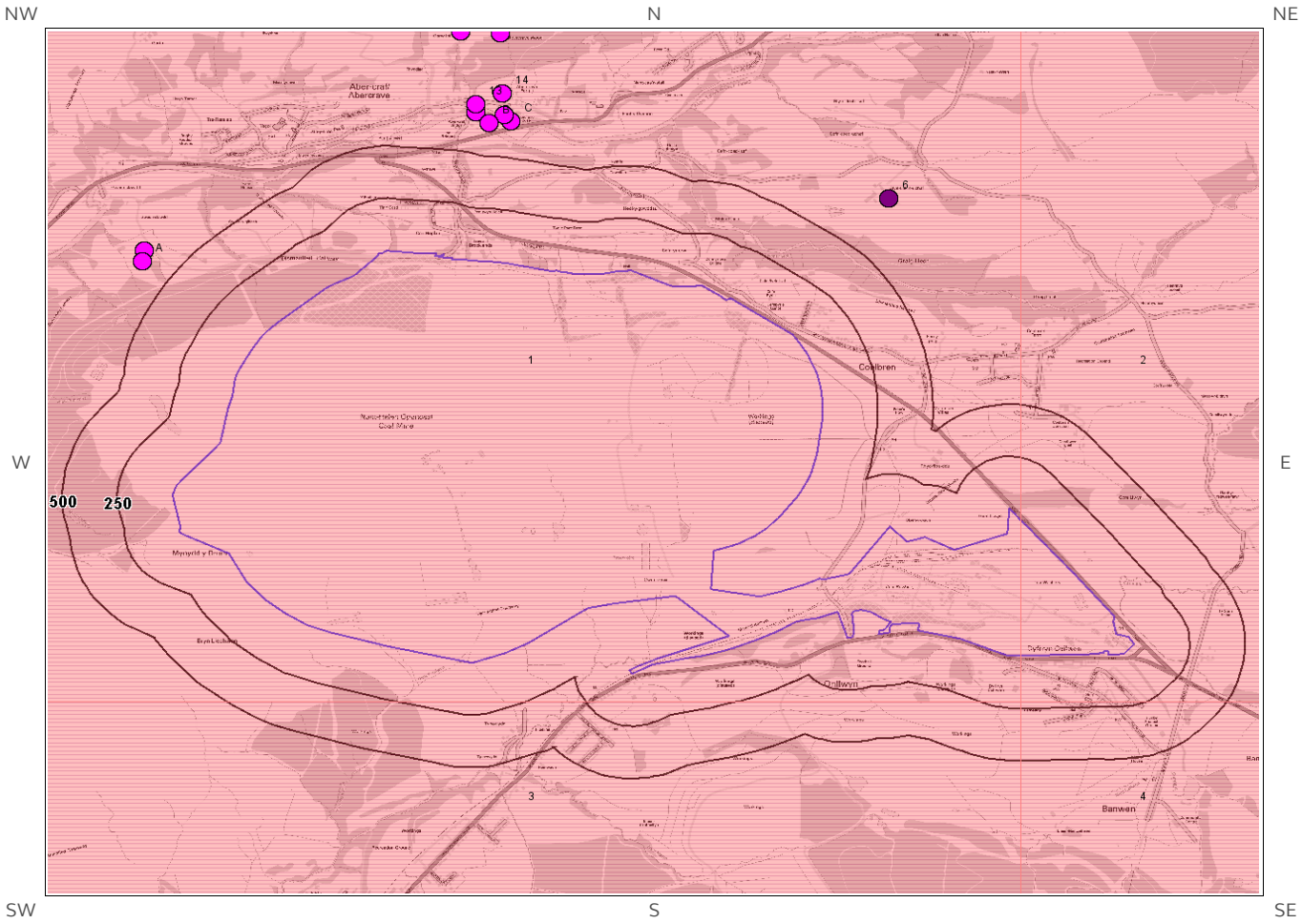
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

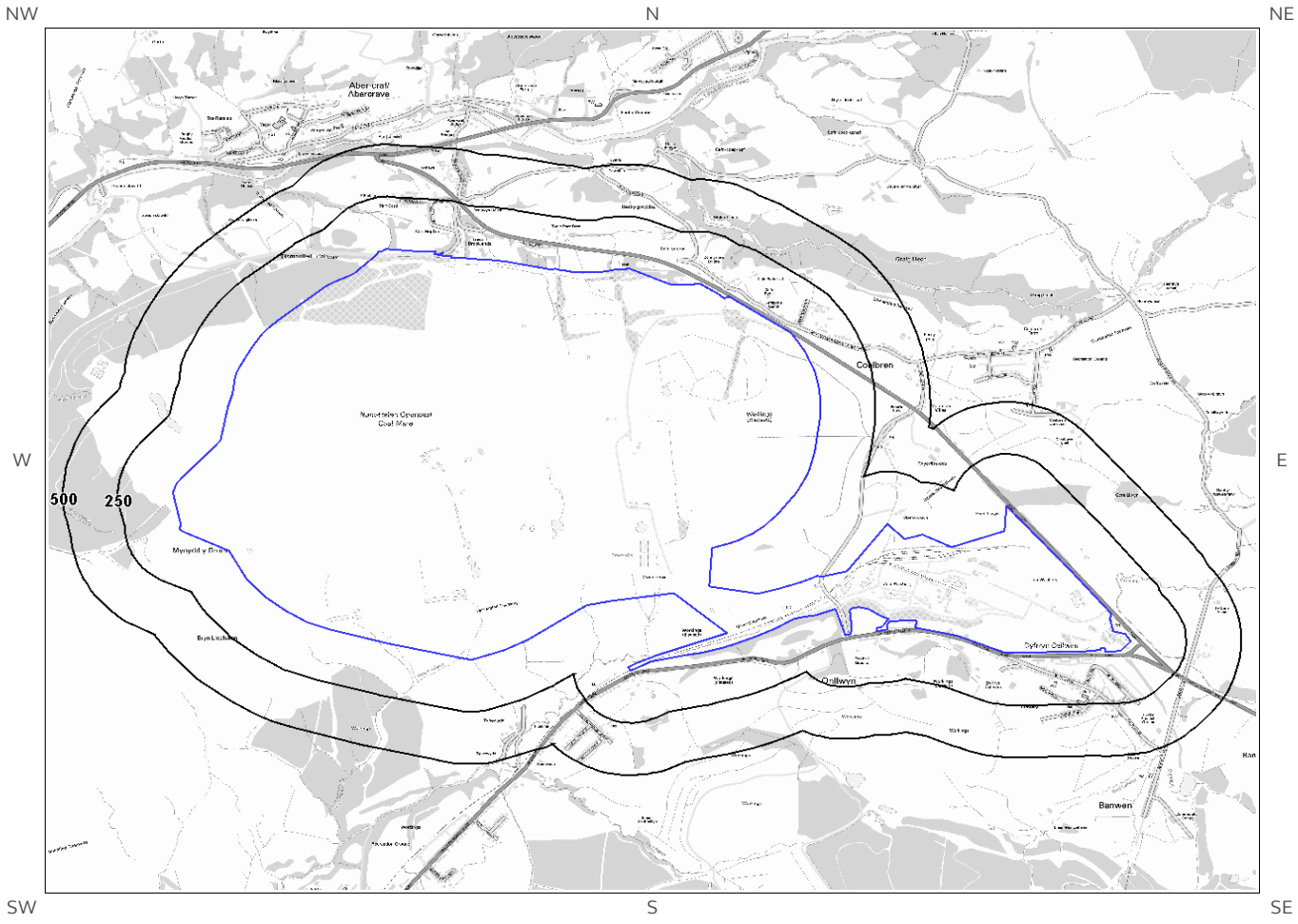
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

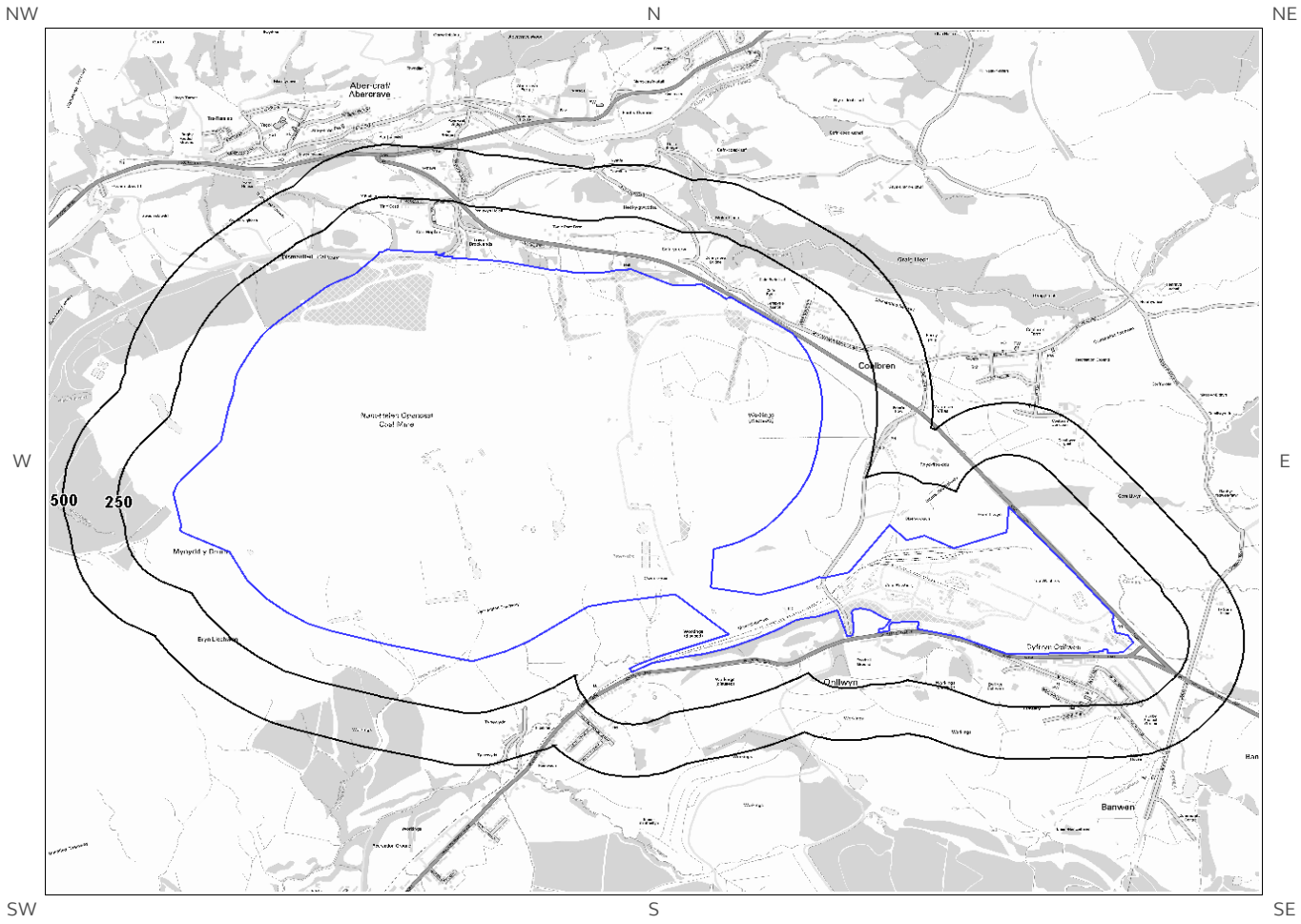
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Site Outline

250
500
Search Buffers (m)

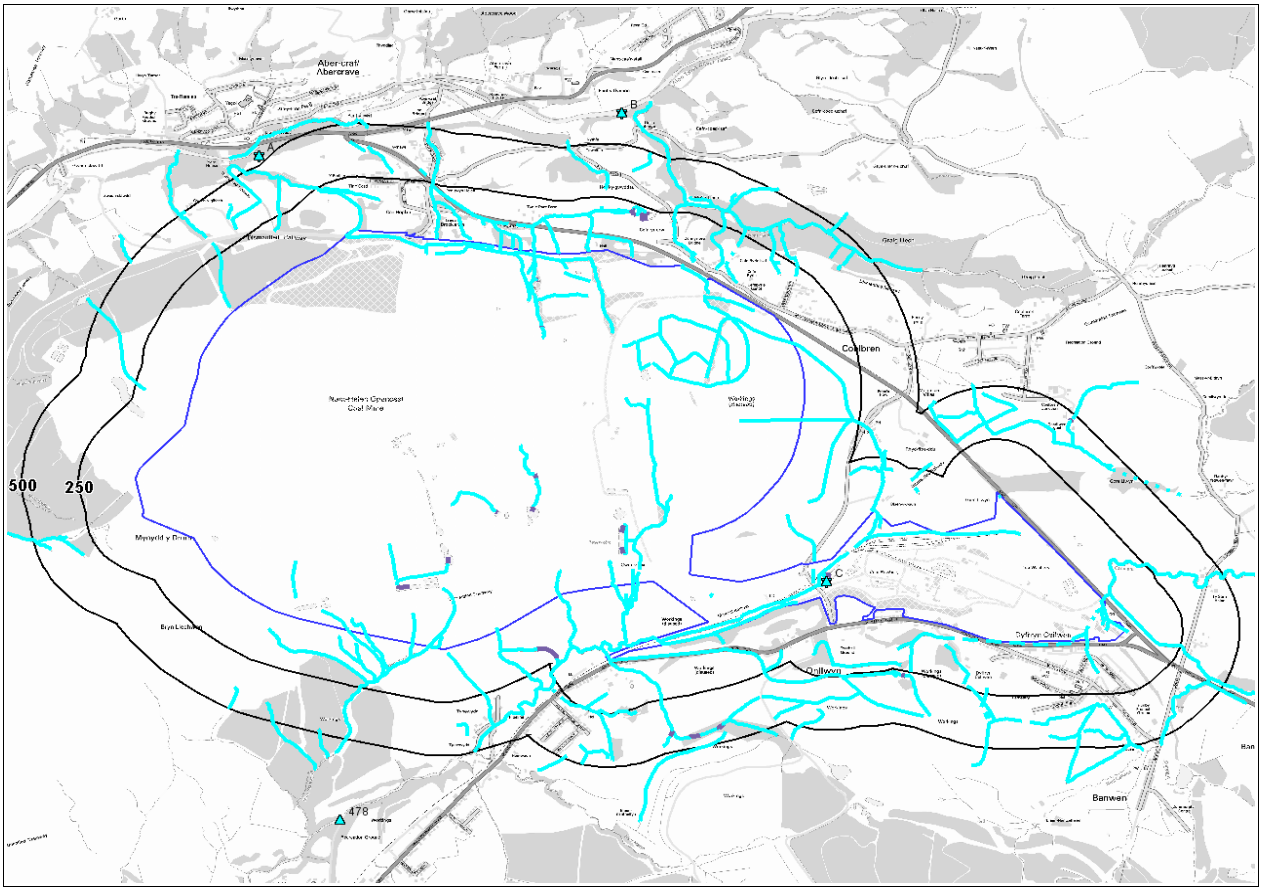
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality



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Site Outline

250 500 Search Buffers (m)

Watercourse type

- Tidal River
- Inland River
- Canal
- Lock or Flight of Locks
- Lake, Reservoir, or Marsh
- Foreshore
- Drain or Transfer

Watercourse level

- On ground surface
- Underground or Elevated
- Level unknown

- General Quality Assessment: Biology
- General Quality Assessment: Chemistry

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
12	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
13	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
14	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
15	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
16	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
31	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
32	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
33	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
17	4	NE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
18	10	N	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
19	70	N	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
20	71	NE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
21	81	NE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
34	94	NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible

ID	Distance (m)	Direction	Designation	Description
				significance for water supply or river base flow
35	118	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
36	129	NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
37	136	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
22	175	S	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
23	179	SW	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
24	223	S	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	228	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	245	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	306	SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
25	316	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	327	SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	373	SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
26	377	NE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
7	431	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
27A	481	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	131	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	217	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
5A	647	NW	281020 212100	Status: Active Licence No: 22/59/1/0119 Details: Unknown (Impounding) - Direct Source: - Point: - Data Type: Point Name: -	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: - Version End Date:
6	781	NE	284400 212400	Status: Historical Licence No: 22/59/1/0032 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: SPRING AT GLYNLLECH Data Type: Point Name: Millward	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 28/12/1966 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
7A	647	NW	281020 212100	Status: Historical Licence No: 22/59/1/0105 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: RESERVOIR AT GWAUNCLAWDD FARM, CAERLAN Data Type: Point Name: Morgan	Annual Volume (m^3): 1,310 Max Daily Volume (m^3): 164 Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date:
8B	655	N	282590 212760	Status: Historical Licence No: 22/59/1/0126 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: RIVER TAWE Data Type: Point Name: Tawe and Tributaries Angling Association Limited	Annual Volume (m^3): 1,401,600 Max Daily Volume (m^3): 3,840 Application No: - Original Start Date: 17/05/2005 Expiry Date: 31/03/2014 Issue No: 3 Version Start Date: 17/11/2009 Version End Date:
9A	670	NW	281030 212150	Status: Historical Licence No: 22/59/1/0105 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: RESERVOIR AT GWAUNCLAWDD FARM, CAERLAN Data Type: Point Name: Morgan	Annual Volume (m^3): 1,310 Max Daily Volume (m^3): 164 Application No: - Original Start Date: 30/07/1991 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date:
10C	672	N	282690 212770	Status: Historical Licence No: 22/59/1/0103 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: UNAMED TRIBUTARY OF RIVER TAWE Data Type: Point Name: Tawe and Tributaries Angling Association	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 07/06/1991 Version End Date:
11B	688	N	282530 212810	Status: Historical Licence No: 22/59/1/0126 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: CRAF TRIBUTARY Data Type: Point Name: Tawe and Tributaries Angling Association Limited	Annual Volume (m^3): 1,401,600 Max Daily Volume (m^3): 3,840 Application No: - Original Start Date: 17/05/2005 Expiry Date: 31/03/2014 Issue No: 3 Version Start Date: 17/11/2009 Version End Date:
12C	699	N	282660 212800	Status: Historical Licence No: 22/59/1/0126 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: UN NAMED TRIB OF RIVER TAWE Data Type: Point Name: Tawe and Tributaries Angling Association Limited	Annual Volume (m^3): 1,401,600 Max Daily Volume (m^3): 3,840 Application No: - Original Start Date: 17/05/2005 Expiry Date: 31/03/2014 Issue No: 3 Version Start Date: 17/11/2009 Version End Date:
13	728	N	282530 212850	Status: Historical Licence No: 22/59/1/0126 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: CRAF TRIBUTARY Data Type: Point Name: Tawe and Tributaries Angling Association	Annual Volume (m^3): 1,401,600 Max Daily Volume (m^3): 3,840 Application No: - Original Start Date: 17/05/2005 Expiry Date: 31/03/2014 Issue No: 1 Version Start Date: 17/05/2005 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
14	798	N	282650 212900	Status: Historical Licence No: 22/59/1/0126 Details: Fish Farm/Cress Pond Throughflow Direct Source: EAW Surface Water Point: UN NAMED TRIB OF RIVER TAWE Data Type: Point Name: Tawe and Tributaries Angling Association	Annual Volume (m³): 1,401,600 Max Daily Volume (m³): 3,840 Application No: - Original Start Date: 17/05/2005 Expiry Date: 31/03/2014 Issue No: 1 Version Start Date: 17/05/2005 Version End Date:
15D	1066	N	282460 213200	Status: Active Licence No: 22/59/1/0132 Details: Hydro-electric Power Generation - Very Low Direct Source: pond at Garwleisau Point: - Data Type: Point Name: -	Annual Volume (m³): 65,000 Max Daily Volume (m³): - Application No: - Original Start Date: 04/04/2017 Expiry Date: Mar 31 2029 12:00AM Issue No: - Version Start Date: - Version End Date:
16D	1066	N	282460 213200	Status: Historical Licence No: 22/59/1/0132 Details: Hydroelectric Power Generation Direct Source: EAW Surface Water Point: UNNAMED POND AT GARW LEISIAU, ABERCRAF Data Type: Point Name: Bull	Annual Volume (m³): 65,000 Max Daily Volume (m³): 432 Application No: - Original Start Date: 15/11/2007 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 15/11/2007 Version End Date:
17E	1083	N	282640 213190	Status: Historical Licence No: 22/59/1/0131 Details: Hydroelectric Power Generation Direct Source: EAW Surface Water Point: ABERCRAF FARM Data Type: Point Name: Williams	Annual Volume (m³): 630,720 Max Daily Volume (m³): 1,728 Application No: - Original Start Date: 28/11/2007 Expiry Date: 31/3/2017 Issue No: 1 Version Start Date: 28/11/2007 Version End Date:
18E	1083	N	282640 213190	Status: Active Licence No: WA/059/0001/011 Details: Hydro-electric Power Generation - Very Low Direct Source: - Point: - Data Type: Point Name: -	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 07/03/2013 Expiry Date: - Issue No: - Version Start Date: - Version End Date:
Not shown	1110	N	282622 213221	Status: Active Licence No: WA/059/0001/008 Details: Hydro-electric Power Generation - Very Low Direct Source: unnamed trib' of Afon Tawe Point: - Data Type: Point Name: -	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 03/11/2016 Expiry Date: - Issue No: - Version Start Date: - Version End Date:
Not shown	1110	N	282622 213221	Status: Active Licence No: WA/059/0001/010 Details: Hydro-electric Power Generation - Very Low Direct Source: unnamed trib' of Afon Tawe Point: - Data Type: Point Name: -	Annual Volume (m³): 589,248 Max Daily Volume (m³): - Application No: - Original Start Date: 03/11/2016 Expiry Date: Mar 30 2029 12:00AM Issue No: - Version Start Date: - Version End Date:
Not shown	1110	N	282622 213221	Status: Historical Licence No: WA/059/0001/010 Details: Hydroelectric Power Generation Direct Source: EAW Surface Water Point: UN-NAMED TRIBUTARY OF THE AFON TAWE Data Type: Point Name: Williams	Annual Volume (m³): 589,248 Max Daily Volume (m³): 2,678 Application No: - Original Start Date: 07/03/2013 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 07/03/2013 Version End Date:
Not	1274	N	281820	Status: Historical	Annual Volume (m³): -

ID	Distance (m)	Direction	NGR	Details	
shown			213390	Licence No: 22/59/1/0122 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: EAW Surface Water Point: SPRING, UNNAMED TRIB OF AFON TAWE AT MAES-Y-FRON Data Type: Point Name: Call of the Wild (Adventure Activities) Ltd.	Max Daily Volume (m^3): - Application No: - Original Start Date: - Expiry Date: 31/03/2014 Issue No: 2 Version Start Date: 01/04/2005 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — Identified

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1274	N	281820 213390	Status: Historical Licence No: 22/59/1/0122 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: EAW Surface Water Point: SPRING, UNNAMED TRIB OF AFON TAWE AT MAES-Y-FRON Data Type: Point Name: Call of the Wild (Adventure Activities) Ltd.	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: 31/03/2014 Issue No: 2 Version Start Date: Version End Date:

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
0	On Site	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
31	S	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
131	S	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
324	N	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
466C	0	On Site	284200 210500	River Name: Neath Dulais Reach: Conf.nant Hir (7 Sisters)-onllwyn Rd.br. End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B
467A	531	NW	281700 212500	River Name: Tawe Reach: Conf.r.giedd - Abercraf R.b. End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
468A	531	NW	281700 212500	River Name: Tawe Reach: Abercraf R.b. - Conf. Nant Llech End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
469B	645	N	283300 212700	River Name: Tawe Reach: Abercraf R.b. - Conf. Nant Llech End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
470B	645	N	283300 212700	River Name: Tawe Reach: Conf. Nant Llech - Conf.nant Tawe Fechan End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	849	NE	286300 210600	River Name: Nedd Fechan Reach: Conf.r.nedd Fechan - Conf.r.camnant End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
472C	0	On Site	284200 210500	River Name: Dulais Reach: Conf.nant Hir (7 Sisters)-onllwyn Rd.br. End/Start of Stretch: Start of Stretch NGR	A	B	B	C	-
473A	531	NW	281700 212500	River Name: Tawe Reach: Abercraf R.b. - Conf. Nant Llech End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
474A	531	NW	281700 212500	River Name: Tawe Reach: Conf.r.giedd - Abercraf R.b. End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
475B	645	N	283300 212700	River Name: Tawe Reach: Conf. Nant Llech - Conf.nant Tawe Fechan End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
476B	645	N	283300 212700	River Name: Tawe Reach: Abercraf R.b. - Conf. Nant Llech End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
Not shown	849	NE	286300 210600	River Name: Pyrddin Reach: Conf.r.nedd Fechan - Conf.r.camnant End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
478	879	S	282060 209380	River Name: Dulais Reach: Conf.nant Hir (7 Sisters)-onllwyn Rd.br. End/Start of Stretch: Sample Point NGR	A	B	B	C	-

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 2.3
13	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
15	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
19	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
21	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
25	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
26	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
30	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
31	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
32	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
33	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
34	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
35	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
36	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
37	0	Nant Helen	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
38	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
39	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
40	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
41	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
42	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
43	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
44	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
45	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
46	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
47	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
48	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
49	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
50	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
51	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
52	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
53	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
54	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
55	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
56	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
57	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
58	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
59	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
60	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
61	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
62	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
63	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
64	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
65	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
66	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
67	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
68	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
69	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
70	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
71	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
72	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
73	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
74	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
75	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
76	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
77	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
78	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
79	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
80	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
81	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
82	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
83	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
84	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
85	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
86	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
87	0 On Site	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
88	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
89	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
90	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
91	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
92	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
93	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
94	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
95	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
96	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
97	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
98	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
99	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
100	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
101	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
102	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
103	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 32.8
104	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
105	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 8.4
106	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
107	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
108	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
109	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
110	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
111	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
112	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
113	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
114	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
115	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
116	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
117	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
118	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
119	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
120	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
121	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
122	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
123	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 22.4
124	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 23.3
125	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
126	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
127	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
128	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
129	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
130	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
131	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
132	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
133	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
134	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
135	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
136	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
137	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
138	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
139	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
140	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
141	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
142	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
143	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
144	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
145	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
146	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
147	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
148	0	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
149	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
150	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
151	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
152	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
153	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
154	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.3
155	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
156	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
157	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
158	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
159	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
160	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
161	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
162	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
163	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
164	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
165	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
166	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
167	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
168	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
169	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
170	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
171	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
172	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
173	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
174	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
175	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
176	0 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
177	0 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
178	0 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
179	0 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
34	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
35	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
36	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
37	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
38	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
39	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
40	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
41	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
42	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
43	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
44	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
45	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
46	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
47	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
48	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
49	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
50	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
51	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
52	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
53	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
54	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
55	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
56	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
57	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
58	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
59	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
60	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
61	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
62	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
63	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
64	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
65	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
66	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
67	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
68	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
69	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
70	0 On Site	Nant Helen	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
71	0 On Site	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
72	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
73	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
74	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
75	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
76	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
77	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
78	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
79	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
80	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
81	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
82	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
83	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
84	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
85	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
86	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
87	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
88	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 2.5
89	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
90	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
91	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
92	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
93	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
94	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
95	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
96	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
97	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
98	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
99	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
100	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
101	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
102	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
103	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
104	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
105	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
106	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
107	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
108	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
109	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
110	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
111	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
112	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
113	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
114	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
115	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
116	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
117	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
118	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
119	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
120	0 On Site	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
121	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
122	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
123	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
124	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
125	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
126	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
127	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
128	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
129	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
130	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
131	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
132	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
133	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
134	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
135	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
136	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 32.8
137	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
138	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 8.4
139	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
140	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
141	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
142	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
143	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
144	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
145	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
146	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
147	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
148	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
149	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
150	0	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
151	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
152	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
153	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
154	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
155	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
156	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 22.4
157	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 23.3
158	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
159	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
160	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
161	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
162	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
163	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
164	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
165	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
166	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
167	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
168	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
169	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
170	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
171	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
172	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
173	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
174	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
175	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
176	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
177	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
178	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
179	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
180	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
181	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
182	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
183	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
184	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
185	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
186	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
187	0	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.3
188	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
189	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
190	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
191	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
192	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
193	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
194	0 On Site	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.4
195	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
196	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
197	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
198	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
199	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
200	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
201	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
202	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
203	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
204	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
205	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
206	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
207	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
208	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
209	0 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
210	0 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
211	0 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
212	0 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
180	1 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
181	1 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
182	1 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
213	1 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
214	1 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
215	1 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.8
183	2 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
184	2 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
185	2 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
216	2 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
217	2 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
218	2	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
186	5 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
219	5 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
187	11 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
220	11 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
188	12 N	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
221	12 N	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
189	17 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
222	17 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
190	22 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
223	22 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
191	23 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
224	23 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
192	24 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
225	24 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
193	25 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
226	25 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
194	30 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
227	30 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
195	35 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
228	35 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
196	38 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
229	38 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
197	40 NE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
230	40 NE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
198	41 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
231	41 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
199	43 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
200	43 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
232	43 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
233	43 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
201	45 NE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
234	45 NE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.2
202	47 NW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
235	47 NW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.3
203	51 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
204	51 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
236	51	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
237	51 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
205	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
206	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
207	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
238	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
239	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
240	53 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
208	54 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
241	54 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
209	55 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
242	55 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
210	57 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
243	57 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
211	62 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
212	62 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
244	62 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
245	62 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
213	63 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
246	63 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
214	69 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
247	69 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
215	71 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
216	71 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
248	71 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
249	71 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
217	74 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
250	74 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
218	76 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
219	76 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
251	76 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
252	76 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
220	79 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
221	79 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
253	79 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
254	79 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
222	83 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
255	83	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
223	86 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
224	86 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
256	86 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
257	86 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
225	87 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
226	87 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
258	87 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
259	87 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
227	89 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
260	89 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
228	90 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
261	90 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
229	96 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
262	96 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
230	98 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
263	98 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
231	100 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
264	100 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
232	103 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
265	103 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
233	106 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
234	106 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
235	106 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
236	106 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
266	106 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
267	106 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
268	106 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
269	106 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
237	112 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
270	112 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
238	113 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
271	113 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
239	115 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
272	115 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
240	120 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
273	120 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
241	125	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
274	125 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
242	128 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
275	128 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
243	129 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
276	129 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
244	133 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
277	133 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
245	139 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
278	139 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
246	140 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
279	140 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
247	143 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
280	143 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
248	145 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
281	145 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
249	147 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
282	147 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
250	149 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
251	149 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
283	149 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
284	149 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
252	153 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
285	153 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
253	154 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
254	154 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
286	154 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
287	154 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
255	155 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
288	155 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
256	156 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
257	156 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
258	156 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
259	156 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
289	156 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
290	156 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
291	156 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
292	156	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
260	158 W	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
293	158 W	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
261	160 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
294	160 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
262	163 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
295	163 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
263	164 SE	-	Marsh. An area that is predominantly waterlogged by freshwater.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
296	164 SE	-	Marsh. An area that is predominantly waterlogged by freshwater.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
264	165 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
297	165 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
265	166 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
298	166 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
266	169 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
267	169 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
299	169 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
300	169 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
268	171 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
301	171 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
269	172 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
302	172 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
270	179 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
303	179 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
271	180 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
304	180 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
272	181 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
305	181 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
273	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
274	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
306	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
307	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
275	185 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
276	185 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
308	185 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
309	185 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
277	186 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
310	186 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
278	189	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
311	189 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
279	193 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
280	193 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
312	193 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
313	193 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
281	194 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
314	194 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
282	195 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
283	195 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
315	195 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
316	195 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
284	198 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 1.9
285	198 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
317	198 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
318	198 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
286	199 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
287	199 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
319	199 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
320	199 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
288	200 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
321	200 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
289	202 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
290	202 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
322	202 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
323	202 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
291	205 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
292	205 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
324	205 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
325	205 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
293	206 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
326	206 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
294	207 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
295	207 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
296	207 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
327	207 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
328	207 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
329	207	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	NW			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
297	209 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
330	209 N	-	Lake, loch or reservoir.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.3
298	210 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
331	210 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
299	211 W	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
300	211 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
332	211 W	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.7
333	211 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
301	216 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
334	216 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
302	217 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
335	217 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
303	218 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
304	218 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
336	218 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
337	218 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
305	219 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
338	219 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
306	221 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
339	221 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
307	222 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
340	222 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
308	224 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
341	224 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
309	226 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
342	226 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
310	228 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
343	228 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
311	229 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
344	229 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
312	232 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
345	232 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
313	238 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
346	238 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
314	239 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
315	239 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
347	239	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
348	239 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
316	243 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
349	243 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
317	244 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
350	244 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
318	245 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
351	245 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
319	246 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
352	246 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
320	248 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
353	248 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
321	250 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
354	250 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
322	254 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
323	254 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
355	254 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
356	254 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
324	264 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
325	264 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
357	264 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
358	264 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
326	265 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
327	265 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
359	265 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
360	265 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
328	266 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
361	266 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
329	267 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
330	267 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
362	267 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
363	267 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
331	269 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
364	269 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
332	270 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
365	270 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
333	271 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
334	271	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.9
366	271 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
367	271 S	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.9
335	275 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
368	275 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
336	277 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
369	277 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
337	279 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
370	279 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
338	283 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.4
371	283 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.4
339	284 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.1
372	284 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 11.1
340	285 SW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
373	285 SW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
341	287 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
342	287 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
374	287 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
375	287 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
343	288 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
376	288 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
344	290 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.2
377	290 N	Nant Helen	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.2
345	291 N	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.1
378	291 N	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.1

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
346	292 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
379	292 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
347	293 N	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.8
380	293 N	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.8
348	295 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
381	295 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
349	296 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
382	296 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
350	299 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
383	299 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
351	304 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
352	304 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
384	304	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
385	304 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
353	311 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 10.2
354	311 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.2
386	311 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 10.2
387	311 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.2
355	313 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
388	313 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
356	320 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.7
357	320 SW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
389	320 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.7
390	320 SW	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.8
358	321 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
391	321 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
359	327 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
392	327 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
360	330 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
361	330 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
362	330 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
363	330 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
393	330 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
394	330 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
395	330 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
396	330 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
364	331 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
397	331 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
365	339 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
366	339 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
398	339 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
399	339 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
367	342 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.0
400	342 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.0
368	345 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
369	345 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
401	345 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
402	345 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
370	347 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
403	347	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	NW			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
371	350 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
404	350 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
372	352 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
373	352 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
405	352 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
406	352 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
374	353 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
407	353 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
375	359 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
376	359 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
377	359 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
378	359 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
408	359 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
409	359 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
410	359 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
411	359 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
379	361 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
380	361 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
412	361 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
413	361 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
381	363 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
382	363 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
414	363 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
415	363 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
383	364 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
384	364 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
416	364 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
417	364 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
385	367 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
418	367 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
386	370 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
419	370 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
387	374 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
420	374 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
388	375 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
421	375 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
389	376	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
422	376 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
390	378 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.6
423	378 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.6
391	380 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
424	380 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
392	381 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
425	381 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
393	384 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
394	384 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
395	384 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
426	384 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
427	384 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
428	384 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
396	386 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
429	386 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
397	387 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
430	387 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
398	391 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
431	391 S	Nant Ystalwyn	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
399	392 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
400	392 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
432	392 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	392 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
401	395 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
402	395 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
434	395 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
435	395 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
403	398 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
436	398 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
404	400 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
437	400 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
405	401 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
438	401 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
406	402 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
439	402 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
407	403 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
408	403	-	Marsh. An area that is predominantly	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S		waterlogged by freshwater.	Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
409	403 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
440	403 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
441	403 S	-	Marsh. An area that is predominantly waterlogged by freshwater.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
442	403 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
410	404 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
411	404 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
443	404 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
444	404 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
412	411 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.5
445	411 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 5.5
413	417 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
446	417 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
414	418 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
447	418 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
415	420 S	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.1
416	420 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
448	420 S	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.1
449	420 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
417	424 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
450	424 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
418	426 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
451	426 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
419	429 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
420	429 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
Not shown	429 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
Not shown	429 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.0
421	430 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
454	430 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
422	433 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
423	433 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
424	433 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
455	433 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
456	433 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
457	433 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
425	434 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
426	434 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	434	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	434 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
427	436 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
428	436 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	436 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	436 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
429	437 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
430	437 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
462	437 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
463	437 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
431	441 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
432	441 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
464	441 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
465	441 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
433	442 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
466	442 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
434	443 S	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.7
467	443 S	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 9.7
435	448 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
436	448 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
468	448 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
469	448 SE	Camnant	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
437	449 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
438	449 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
470	449 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
471	449 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
439	450 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.8
472	450 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.8
440	451 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.0
473	451 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.0
441	453 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
474	453 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
442	455 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
443	455 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
475	455 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
476	455 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
444	456 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
477	456	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	S			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
445	465 NE	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.4
478	465 NE	-	Lake, loch or reservoir.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.4
446	473 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.1
479	473 NE	Nant Llech	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 11.1
447	477 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
480	477 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
448	478 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
481	478 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
449	481 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
450	481 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.9
482	481 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	481 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 0.9
451	482 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.5
Not shown	482 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.5
452	483 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
453	483 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	483 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
486	483 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
454	484 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
487	484 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
455	485 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
488	485 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
456	487 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
489	487 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
457	488 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.4
490	488 S	Dulais	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.4
458	490 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
459	490 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
491	490 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	490 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Neath Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
460	492 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
493	492 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
461	493 N	Afon Tawe Alternative Name: River Tawe	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.0
494	493 N	Afon Tawe Alternative Name: River Tawe	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.0
462	496 N	Afon Tawe Alternative Name: River Tawe	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.1
495	496 N	Afon Tawe Alternative Name: River Tawe	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 26.1
463	498	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
496	498 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
464	499 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
465	499 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
497	499 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
498	499 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tawe Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

Surface water features within 250m of the study site	Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
0	N
0	N
0	N
0	On Site
0	On Site
0	On Site

Distance (m)	Direction
0	On Site
0	On Site
0	On Site

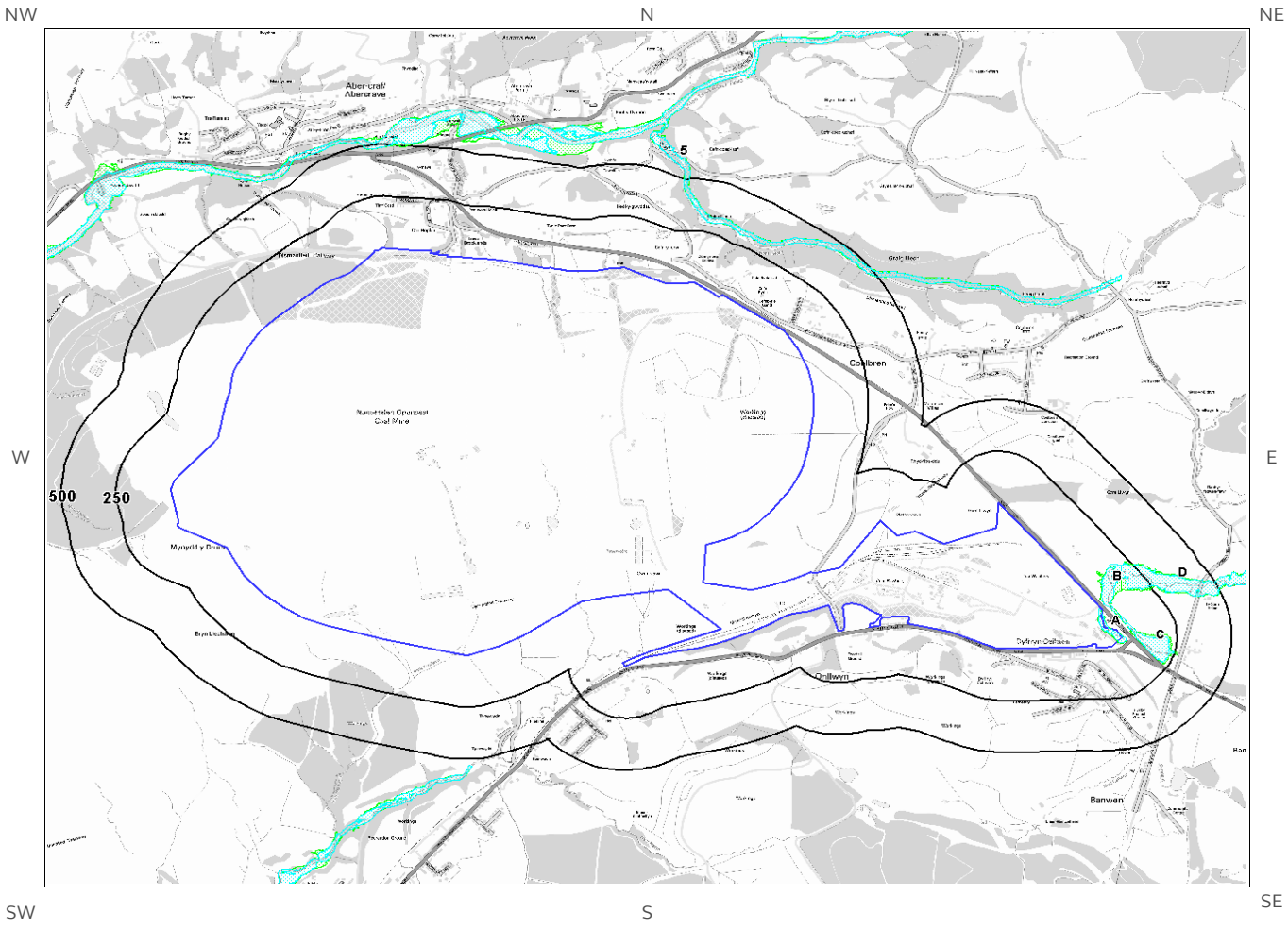
Distance (m)	Direction
0	On Site
0	On Site
0	On Site

Distance (m)	Direction
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
1	N
1	S
2	S
5	N
7	S
11	N
14	S
15	S
16	S
17	S
23	N
25	NW
38	NE
40	N
41	NE
43	NE
43	S
47	W
51	NE
53	NE

Distance (m)	Direction
53	NE
54	SE
62	N
64	S
69	N
69	S
71	N
71	N
72	S
76	N
77	NE
77	S
79	NE
83	N
86	S
87	SE
87	SE
89	S
96	N
103	S
105	S
106	S
106	S
120	S
128	N
139	N
139	S
143	N
146	N
147	S
149	N
149	N
153	N
154	N
154	S
155	E
155	N
156	S
159	W
159	W
162	NW
171	N
173	SW
173	W
174	NE

Distance (m)	Direction
174	SE
180	SE
181	N
184	N
185	N
185	N
186	N
186	W
190	N
190	NE
193	NE
193	S
195	N
195	NW
200	N
202	N
205	N
207	NE
207	NE
208	N
212	W
216	S
217	S
222	N
228	NW
228	SW
230	N
232	W
233	W
238	S
239	S
246	S
246	S
246	SW
250	S

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

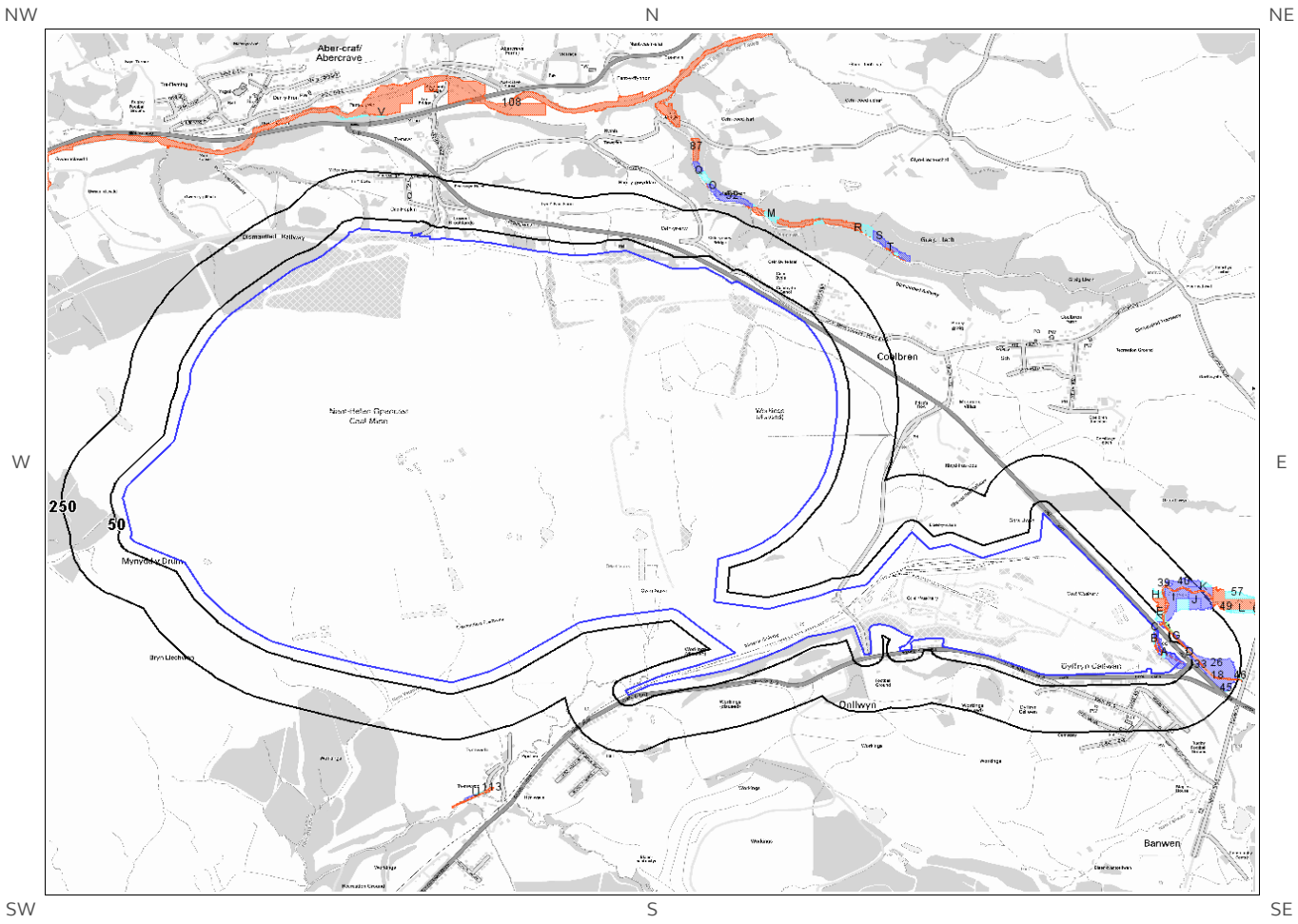
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

Report Reference: GS-6396069
Client Reference: GCORE

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1A	0	On Site	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
2B	25	NE	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
3C	44	NE	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
4D	128	NE	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1A	0	On Site	09-Sep-2019	Zone 3 - (Fluvial Models)
2B	25	NE	09-Sep-2019	Zone 3 - (Fluvial Models)
3C	49	NE	09-Sep-2019	Zone 3 - (Fluvial Models)
4D	155	NE	09-Sep-2019	Zone 3 - (Fluvial Models)
	167	NE	09-Sep-2019	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — High

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a High (1 in 30 or greater) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1A	0.0	On Site	Low
2A	0.0	On Site	Medium
3B	0.0	On Site	Low
4B	0.0	On Site	Low
5B	0.0	On Site	Medium
6B	0.0	On Site	Low
7C	0.0	On Site	Medium
8	0.0	On Site	Medium
9A	0.0	On Site	High
10A	0.0	On Site	Medium
11A	0.0	On Site	High
12	25.0	NE	High
13C	26.0	NE	Medium
14C	27.0	NE	Medium
15E	27.0	NE	Low
16C	32.0	NE	Low
17F	40.0	NE	Very Low
18	44.0	NE	Medium
19C	44.0	NE	Medium
20D	45.0	NE	Low
21D	48.0	NE	Low
22D	49.0	NE	Low
23D	49.0	NE	Low
24E	49.0	NE	Low
25I	50.0	NE	Medium

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site	None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site	None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site	Identified
Clearwater Flooding or Superficial Deposits Flooding	Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

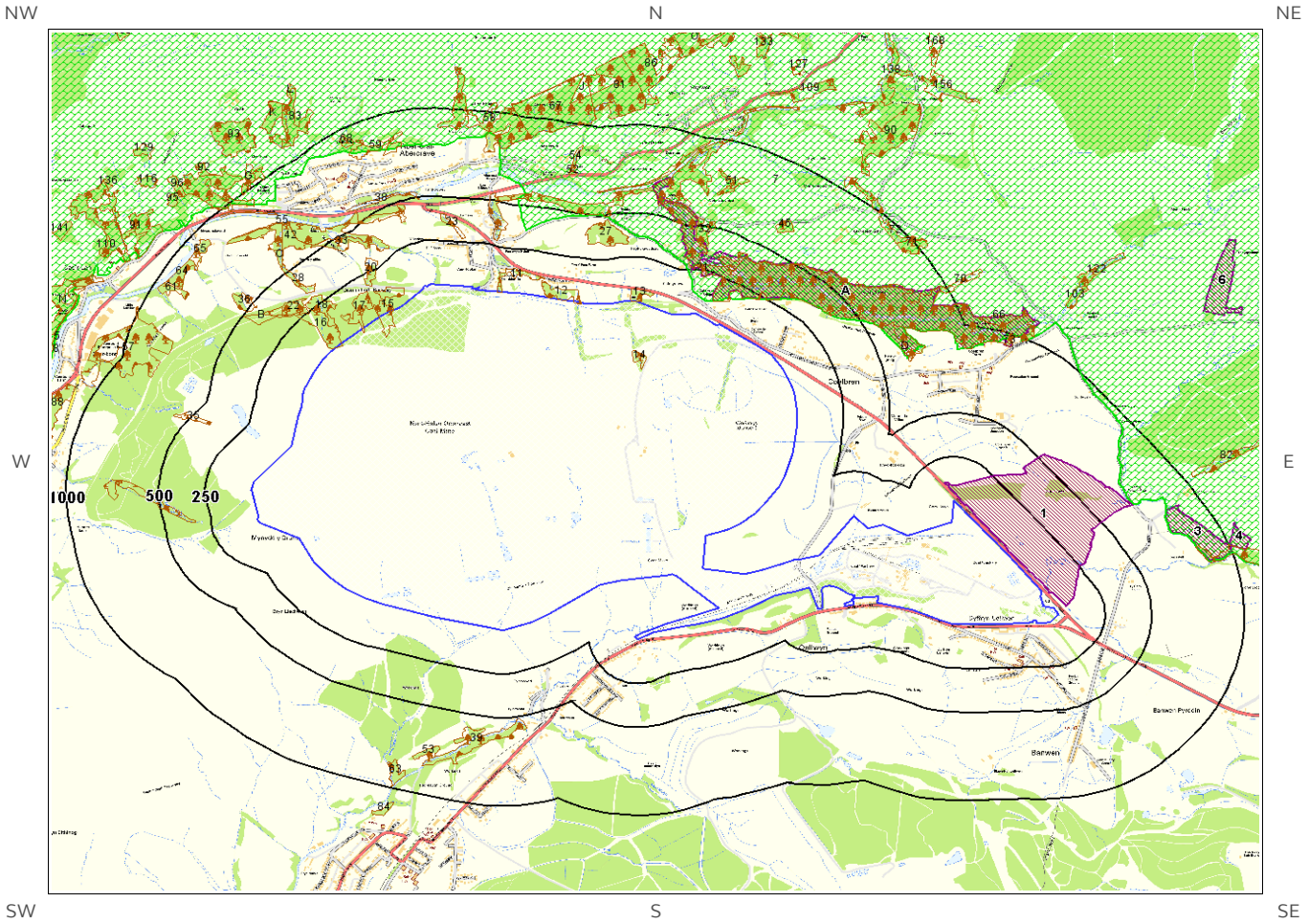
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result	High

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site — Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

6

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	19	NE	Gorsllwyn, Onllwyn	Natural Resources Wales
2A	111	NE	Nant Llech	Natural Resources Wales
3	768	NE	Caeau Ton-Y-Fildre	Natural Resources Wales
4	1009	NE	Caeau Ton-Y-Fildre	Natural Resources Wales
Not shown	1130	E	Caeau Ton-Y-Fildre	Natural Resources Wales
6	1724	NE	Waun Ton-Y-Spyddaden	Natural Resources Wales

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

170

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
11	0	On Site	Unknown	Ancient Semi Natural Woodland
12	0	On Site	Unknown	Ancient Semi Natural Woodland
13	0	On Site	Unknown	Ancient Semi Natural Woodland
14	0	On Site	Unknown	Ancient Semi Natural Woodland
15	0	On Site	Unknown	Plantation on Ancient Woodland Site
16	0	On Site	Unknown	Plantation on Ancient Woodland Site
17	0	On Site	Unknown	Plantation on Ancient Woodland Site
18	105	NW	Unknown	Plantation on Ancient Woodland Site
19A	107	NE	Unknown	Ancient Semi Natural Woodland
20	174	NW	Unknown	Ancient Semi Natural Woodland
21	214	N	Unknown	Ancient Semi Natural Woodland
22	242	NW	Unknown	Plantation on Ancient Woodland Site
23	272	N	Unknown	Ancient Semi Natural Woodland
24	283	N	Unknown	Ancient Semi Natural Woodland
25	292	NW	Unknown	Ancient Semi Natural Woodland
26	319	NE	Unknown	Ancient Semi Natural Woodland
27	320	N	Unknown	Ancient Semi Natural Woodland
28	324	NW	Unknown	Ancient Semi Natural Woodland
29B	329	NW	Unknown	Plantation on Ancient Woodland Site
30	337	W	Unknown	Plantation on Ancient Woodland Site
31B	338	NW	Unknown	Plantation on Ancient Woodland Site
32	371	N	Unknown	Ancient Semi Natural Woodland
33	372	NW	Unknown	Ancient Semi Natural Woodland
34	392	NE	Unknown	Ancient Semi Natural Woodland
35	398	NW	Unknown	Ancient Woodland Site of Unknown Category
36	468	NW	Unknown	Restored Ancient Woodland Site
37	486	NE	Unknown	Ancient Semi Natural Woodland
38	486	N	Unknown	Ancient Semi Natural Woodland
39	508	S	Unknown	Ancient Semi Natural Woodland
40C	530	NW	Unknown	Ancient Semi Natural Woodland
41	535	N	Unknown	Ancient Semi Natural Woodland
42	552	NW	Unknown	Ancient Semi Natural Woodland
43	573	NE	Unknown	Ancient Semi Natural Woodland
44C	582	NW	Unknown	Ancient Semi Natural Woodland
45	607	NE	Unknown	Ancient Semi Natural Woodland
46E	619	NW	Unknown	Ancient Semi Natural Woodland
47D	624	E	Unknown	Ancient Semi Natural Woodland
48	627	N	Unknown	Ancient Semi Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
49D	632	NE	Unknown	Ancient Semi Natural Woodland
50D	638	E	Unknown	Ancient Semi Natural Woodland
51	684	N	Unknown	Ancient Semi Natural Woodland
52	710	N	Unknown	Plantation on Ancient Woodland Site
53	712	S	Unknown	Ancient Semi Natural Woodland
54	731	N	Unknown	Ancient Semi Natural Woodland
55	742	NW	Unknown	Ancient Semi Natural Woodland
56E	742	NW	Unknown	Ancient Semi Natural Woodland
57	756	W	Unknown	Ancient Semi Natural Woodland
58	767	N	Unknown	Ancient Semi Natural Woodland
59	775	N	Unknown	Ancient Semi Natural Woodland
60F	793	NW	Unknown	Ancient Semi Natural Woodland
61	811	NW	Unknown	Restored Ancient Woodland Site
62	831	NE	Unknown	Ancient Semi Natural Woodland
63	838	S	Unknown	Ancient Semi Natural Woodland
64	854	NW	Unknown	Restored Ancient Woodland Site
65	860	NW	Unknown	Ancient Semi Natural Woodland
66	880	NE	Unknown	Ancient Semi Natural Woodland
67	884	N	Unknown	Restored Ancient Woodland Site
68	894	NW	Unknown	Ancient Semi Natural Woodland
69F	908	NW	Unknown	Ancient Semi Natural Woodland
70	911	NE	Unknown	Ancient Semi Natural Woodland
71	920	NE	Unknown	Ancient Semi Natural Woodland
72	923	NE	Unknown	Ancient Semi Natural Woodland
73	929	N	Unknown	Ancient Semi Natural Woodland
74H	986	NW	Unknown	Ancient Semi Natural Woodland
75	994	NE	Unknown	Ancient Semi Natural Woodland
76G	997	NW	Unknown	Ancient Semi Natural Woodland
77G	999	NW	Unknown	Ancient Semi Natural Woodland
78H	1023	NW	Unknown	Ancient Semi Natural Woodland
79	1032	N	Unknown	Ancient Semi Natural Woodland
80	1040	N	Unknown	Ancient Semi Natural Woodland
81	1044	N	Unknown	Ancient Semi Natural Woodland
82	1044	NE	Unknown	Ancient Semi Natural Woodland
83	1070	NW	Unknown	Ancient Semi Natural Woodland
84	1078	S	Unknown	Ancient Semi Natural Woodland
85I	1079	NW	Unknown	Ancient Semi Natural Woodland
86	1094	N	Unknown	Ancient Semi Natural Woodland
87I	1094	NW	Unknown	Ancient Semi Natural Woodland
88	1095	NW	Unknown	Ancient Semi Natural Woodland
89J	1110	N	Unknown	Restored Ancient Woodland Site

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
90	1133	NE	Unknown	Ancient Semi Natural Woodland
91	1135	NW	Unknown	Ancient Semi Natural Woodland
92	1145	NW	Unknown	Ancient Semi Natural Woodland
93	1167	NW	Unknown	Ancient Semi Natural Woodland
94J	1179	N	Unknown	Ancient Semi Natural Woodland
95	1181	NW	Unknown	Ancient Semi Natural Woodland
96	1187	NW	Unknown	Ancient Semi Natural Woodland
97K	1200	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1211	NE	Unknown	Ancient Semi Natural Woodland
99K	1217	NW	Unknown	Ancient Semi Natural Woodland
100P	1230	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1234	W	Unknown	Ancient Semi Natural Woodland
102M	1246	NW	Unknown	Ancient Semi Natural Woodland
103	1258	NE	Unknown	Ancient Semi Natural Woodland
104L	1267	NW	Unknown	Ancient Semi Natural Woodland
105L	1292	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1292	NW	Unknown	Ancient Semi Natural Woodland
107N	1293	NW	Unknown	Ancient Semi Natural Woodland
108	1303	NW	Unknown	Ancient Semi Natural Woodland
109	1306	N	Unknown	Ancient Semi Natural Woodland
110	1308	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1310	E	Unknown	Ancient Semi Natural Woodland
112M	1311	NW	Unknown	Ancient Semi Natural Woodland
113N	1316	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1323	E	Unknown	Ancient Semi Natural Woodland
115	1336	NW	Unknown	Ancient Semi Natural Woodland
116	1337	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1343	E	Unknown	Ancient Semi Natural Woodland
Not shown	1348	E	Unknown	Ancient Semi Natural Woodland
119	1361	N	Unknown	Ancient Semi Natural Woodland
Not shown	1362	W	Unknown	Ancient Semi Natural Woodland
121	1377	NE	Unknown	Ancient Semi Natural Woodland
122	1393	NE	Unknown	Ancient Semi Natural Woodland
Not shown	1400	E	Unknown	Ancient Semi Natural Woodland
Not shown	1403	E	Unknown	Ancient Semi Natural Woodland
125O	1415	N	Unknown	Ancient Semi Natural Woodland
Not shown	1436	W	Unknown	Ancient Semi Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
127	1459	N	Unknown	Ancient Semi Natural Woodland
Not shown	1465	E	Unknown	Ancient Semi Natural Woodland
129	1469	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1471	W	Unknown	Ancient Semi Natural Woodland
Not shown	1481	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1495	W	Unknown	Ancient Semi Natural Woodland
133	1495	N	Unknown	Ancient Semi Natural Woodland
134O	1497	N	Unknown	Ancient Semi Natural Woodland
Not shown	1500	E	Unknown	Ancient Semi Natural Woodland
136	1507	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1518	NE	Unknown	Ancient Semi Natural Woodland
138	1524	NE	Unknown	Ancient Semi Natural Woodland
Not shown	1535	E	Unknown	Ancient Semi Natural Woodland
140P	1551	NW	Unknown	Ancient Semi Natural Woodland
141	1552	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1555	E	Unknown	Ancient Semi Natural Woodland
Not shown	1583	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1586	W	Unknown	Ancient Semi Natural Woodland
Not shown	1590	NE	Unknown	Plantation on Ancient Woodland Site
Not shown	1605	S	Unknown	Plantation on Ancient Woodland Site
Not shown	1613	E	Unknown	Ancient Semi Natural Woodland
Not shown	1613	W	Unknown	Ancient Semi Natural Woodland
Not shown	1637	S	Unknown	Ancient Semi Natural Woodland
150	1647	N	Unknown	Ancient Semi Natural Woodland
Not shown	1648	W	Unknown	Ancient Semi Natural Woodland
Not shown	1668	S	Unknown	Plantation on Ancient Woodland Site
Not shown	1682	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1683	W	Unknown	Ancient Semi Natural Woodland
Not shown	1693	NW	Unknown	Ancient Semi Natural Woodland
156	1705	NE	Unknown	Ancient Semi Natural Woodland
Not shown	1707	NW	Unknown	Ancient Semi Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1737	N	Unknown	Ancient Semi Natural Woodland
Not shown	1748	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1751	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1761	E	Unknown	Ancient Semi Natural Woodland
Not shown	1776	S	Unknown	Ancient Semi Natural Woodland
Not shown	1794	N	Unknown	Ancient Semi Natural Woodland
Not shown	1795	E	Unknown	Ancient Semi Natural Woodland
Not shown	1801	E	Unknown	Ancient Semi Natural Woodland
Not shown	1833	S	Unknown	Ancient Semi Natural Woodland
Not shown	1844	E	Unknown	Ancient Semi Natural Woodland
168	1852	NE	Unknown	Ancient Semi Natural Woodland
169	1855	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1860	E	Unknown	Ancient Semi Natural Woodland
Not shown	1882	E	Unknown	Ancient Semi Natural Woodland
Not shown	1917	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1919	NW	Unknown	Ancient Semi Natural Woodland
Not shown	1952	W	Unknown	Ancient Semi Natural Woodland
Not shown	1960	NW	Unknown	Ancient Woodland Site of Unknown Category
Not shown	1969	N	Unknown	Ancient Semi Natural Woodland
Not shown	1972	NW	Unknown	Plantation on Ancient Woodland Site
Not shown	1976	E	Unknown	Ancient Semi Natural Woodland
Not shown	1983	W	Unknown	Ancient Semi Natural Woodland
Not shown	1991	NW	Unknown	Ancient Semi Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

4

The following National Park records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NP Name	Data Source
7	85	NE	Brecon Beacons	Natural Resources Wales
Not shown	1283	NW	Brecon Beacons	Natural Resources Wales
Not shown	1629	E	Brecon Beacons	Natural Resources Wales
Not shown	1915	E	Brecon Beacons	Natural Resources Wales

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

---

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — High

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — Identified

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The site lies in or in proximity to the coal mining reporting area as defined by the Coal Authority

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
0.0	On Site	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Natural Resources Wales
Ty Cambria
29 Newport Road
Cardiff
CF24 0TP
Tel: 0300 065 3000
Email: enquiries@naturalresourceswales.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Powys County Council
Phone: 01597 826000
Web: http://www.powys.gov.uk
Address: County Hall, Spa Road East, Llandrindod Wells, Powys, LD1

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.
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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

https://www.groundsure.com/terms-and-conditions-feb11-2019

Groundsure
LOCATION INTELLIGENCE

Ove Arup & Partners International Ltd

4 OVE ARUP & PARTNERS, PIERHEAD STREET,
CARDIFF, CF10 4QP

Groundsure Reference:	GS-6396070
Your Reference:	GCORE
Report Date	14 Oct 2019
Report Delivery Method:	Email - pdf

Geo Insight

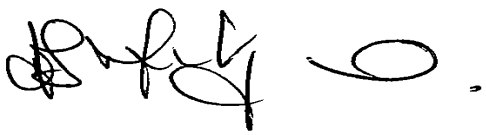
Address: 282917.86237392283, 211100.677756288,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**282917.86237392283, 211100.677756288,**
Date:	**14 Oct 2019**
Reference:	**GS-6396070**
Client:	**Ove Arup & Partners International Ltd**

NW N NE

W E



SW S SE

Aerial Photograph Capture date:	26-May-2017
Grid Reference:	283073,211130
Site Size:	483.2560ha

Groundsure
LOCATION INTELLIGENCE

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	Yes
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	Yes
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	Yes

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	800	160	346	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	76	17	38	33	101
4.3 Current Ground Workings	50	8	32	22	37

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	77	17	39	38	107
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	2	0	1	0	1
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

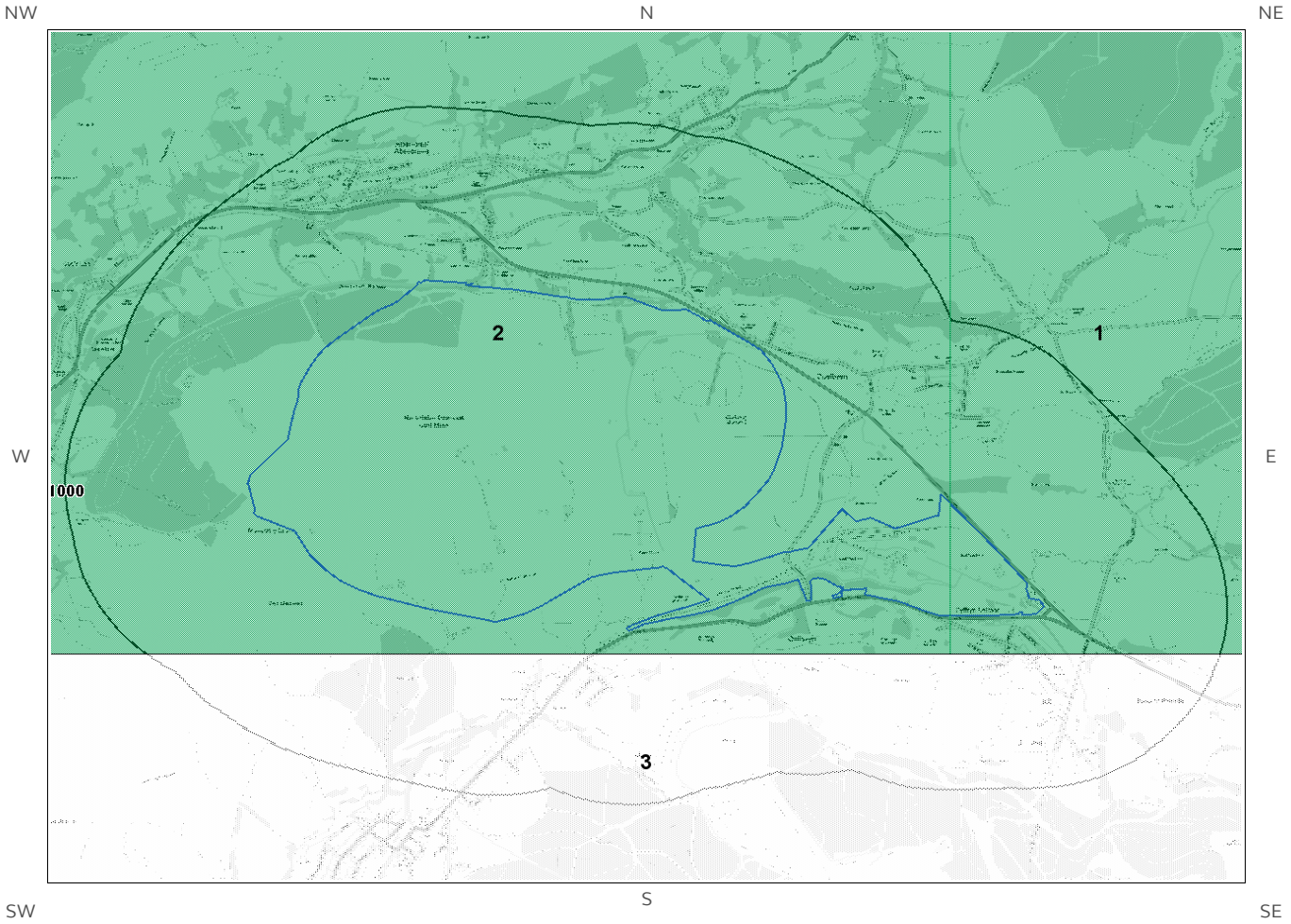
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Very Low
6.2 Landslides	Moderate
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	High
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Low

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	18	6	13

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	128	14	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	77	6	11	Not Searched
9.3 Historical Railways	12	0	4	Not Searched
9.4 Active Railways	18	0	2	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend

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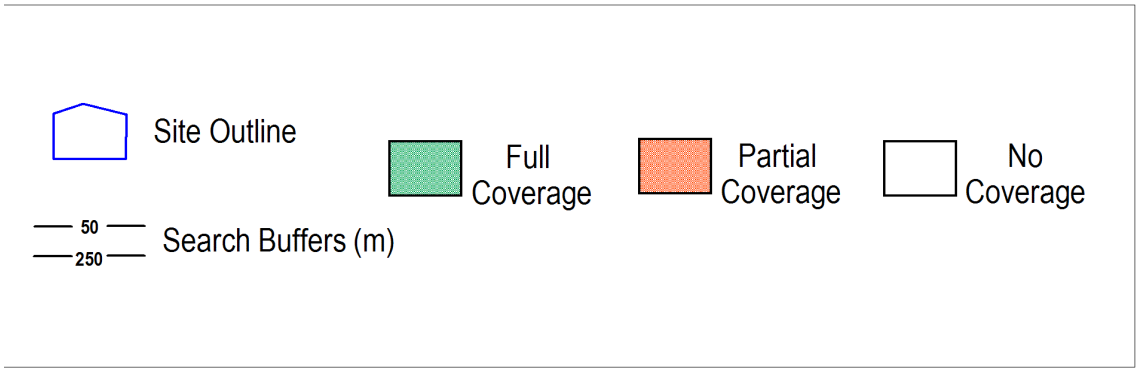


Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
2	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
3	131.0	No deposits are mapped	No coverage	No coverage	No coverage
N4	1158.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N5	1441.0	Some deposits are mapped	Full	Full	Some deposits are mapped

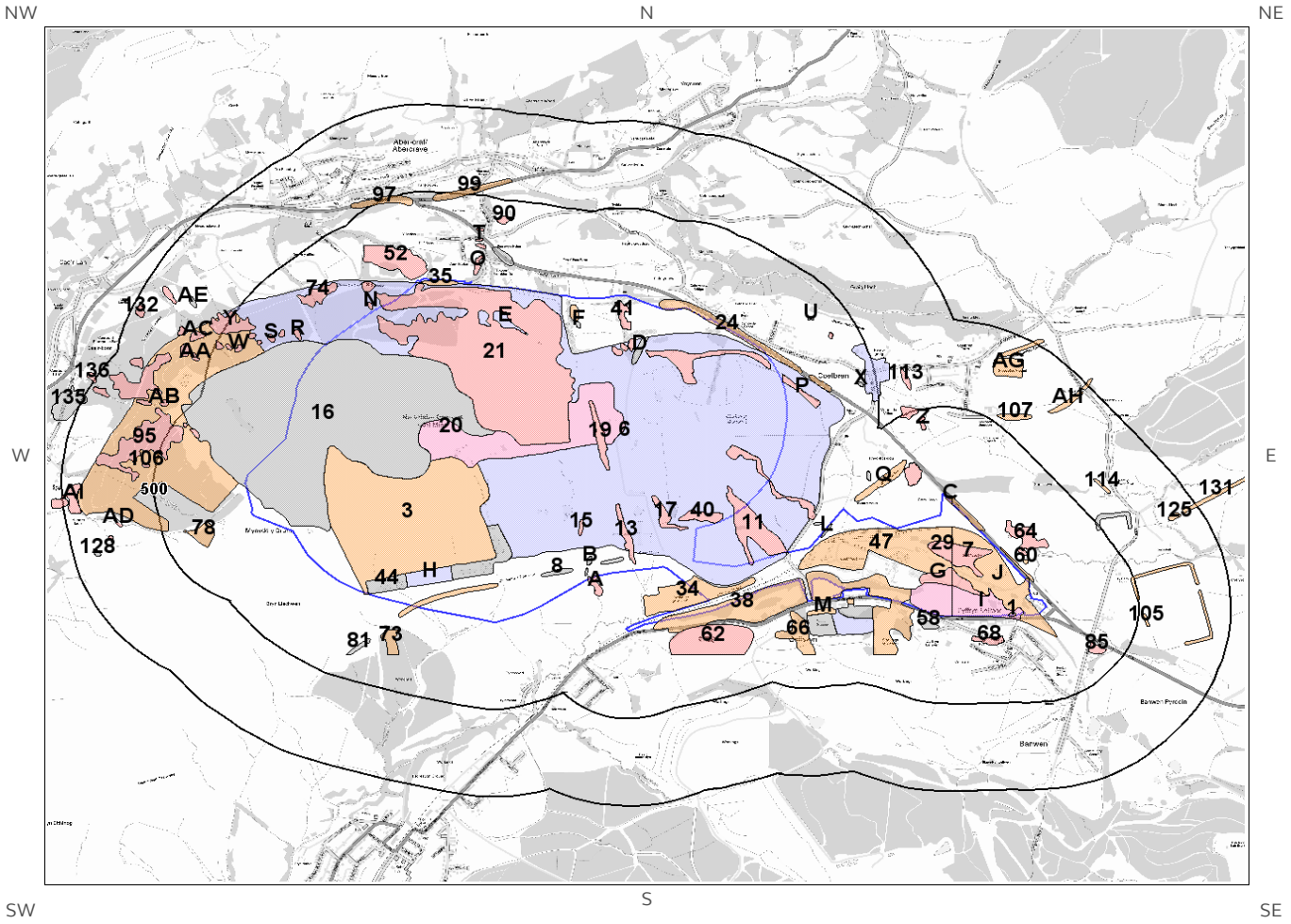
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1. Geology 1:10,000 scale

1.1 Artificial Ground

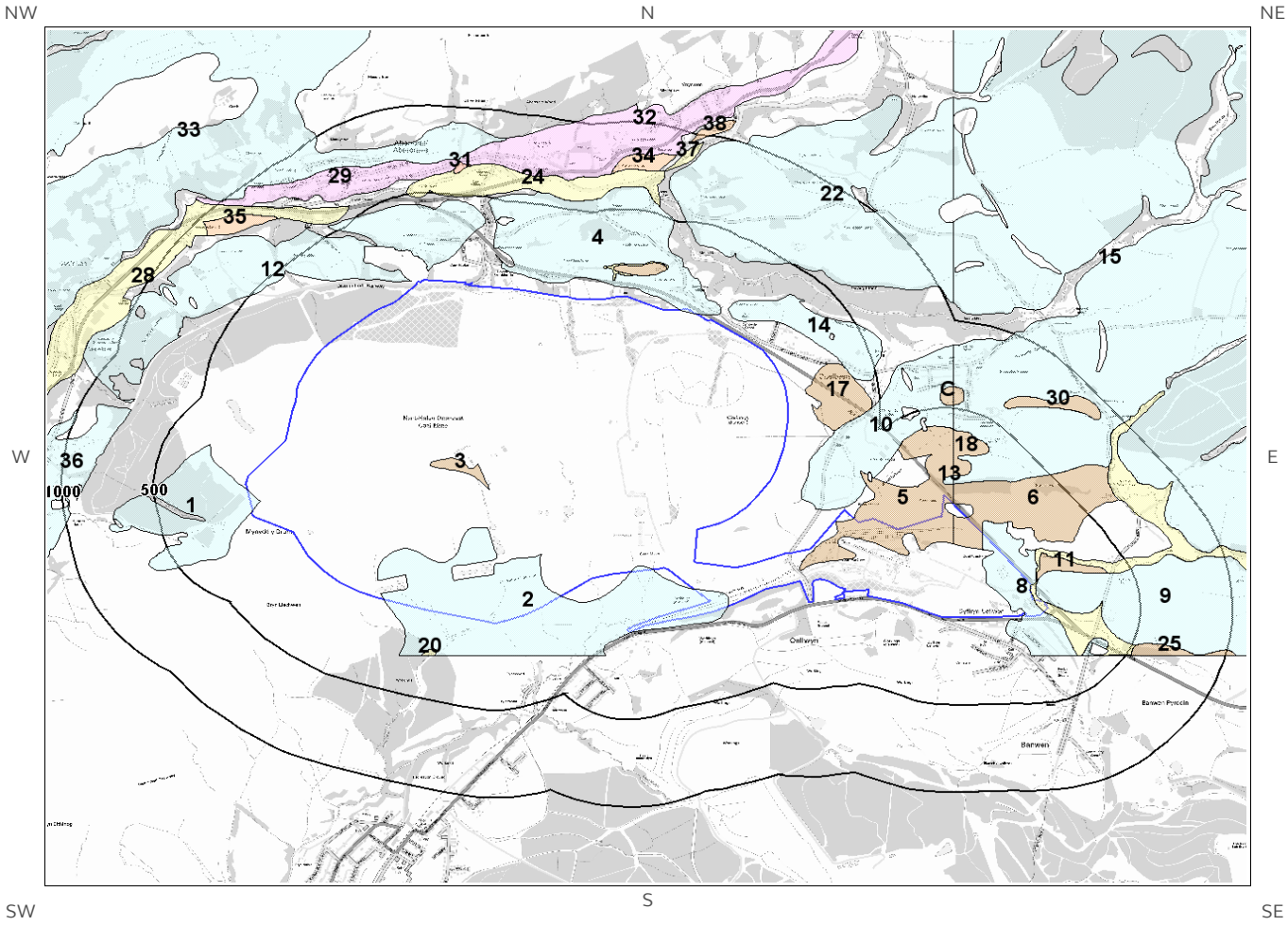
The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2A	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4H	0.0	On Site	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
5G	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	0.0	On Site	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
7	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
8	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
9A	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
10B	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
11	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
12B	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
13	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
14L	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
15	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
16	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
17	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
18C	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
19	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
20	0.0	On Site	DDGR-UKNOWN	Disturbed Ground (Undivided)	Unknown/unclassified Entry
21	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
22C	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
23	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
24	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
25D	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
26D	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
27D	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
28D	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
29	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
30E	0.0	On Site	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
31F	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
32E	0.0	On Site	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
33F	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
34	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
35	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
36G	0.0	On Site	DDGR-UKNOWN	Disturbed Ground (Undivided)	Unknown/unclassified Entry
37H	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
38	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
39I	0.0	On Site	DDGR-UKNOWN	Disturbed Ground (Undivided)	Unknown/unclassified Entry
40	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
41	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
42	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
43J	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
44	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void

45K	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
46	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
47	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
48I	0.0	On Site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
49P	2.0	E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
50N	10.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
51J	16.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
52	19.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
53K	24.0	SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
54V	36.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
55L	38.0	NW	WGR-VOID	Worked Ground (Undivided)	Void
56O	45.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
57K	48.0	SE	WGR-VOID	Worked Ground (Undivided)	Void
58	48.0	S	WGR-VOID	Worked Ground (Undivided)	Void
59M	54.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
60	55.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
61K	60.0	S	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
62	65.0	S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
63Q	74.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
64	75.0	NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
65M	81.0	S	WGR-VOID	Worked Ground (Undivided)	Void
66	91.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
67N	105.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
68	112.0	S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
69R	121.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
70O	125.0	N	WGR-VOID	Worked Ground (Undivided)	Void
71P	149.0	E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
72Q	151.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
73	154.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
74	199.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
75O	202.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
76R	206.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
77Q	212.0	N	WGR-VOID	Worked Ground (Undivided)	Void
78	229.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
79S	231.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
80T	239.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
81	240.0	S	WGR-VOID	Worked Ground (Undivided)	Void
82S	286.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
83T	296.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
84U	299.0	NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
85	313.0	SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
86S	332.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
87U	338.0	NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
88V	345.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
89W	359.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
90	361.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
91Y	362.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
92Z	382.0	N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
93X	398.0	E	WGR-VOID	Worked Ground (Undivided)	Void
94W	410.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
95	414.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
96X	419.0	E	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
97	429.0	N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
98V	437.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
99	451.0	N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
100Y	454.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
101W	455.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
102Z	467.0	NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
103	481.0	NE	WGR-VOID	Worked Ground (Undivided)	Void
104	482.0	E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	0.0	On Site	PEAT-P	Peat - Peat	Peat
4	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
5	0.0	On Site	PEAT-P	Peat - Peat	Peat
6	0.0	On Site	PEAT-P	Peat - Peat	Peat
7	0.0	On Site	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
9	2.0	NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
10	14.0	N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
11	34.0	NE	PEAT-P	Peat - Peat	Peat
12	37.0	W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
13	64.0	N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
14	66.0	NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
15	82.0	NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
16A	96.0	N	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
17	105.0	E	PEAT-P	Peat - Peat	Peat
18	122.0	NE	PEAT-P	Peat - Peat	Peat
19A	129.0	N	PEAT-P	Peat - Peat	Peat
20	211.0	S	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
21B	298.0	SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
22	368.0	NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
23B	424.0	SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
24	475.0	N	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

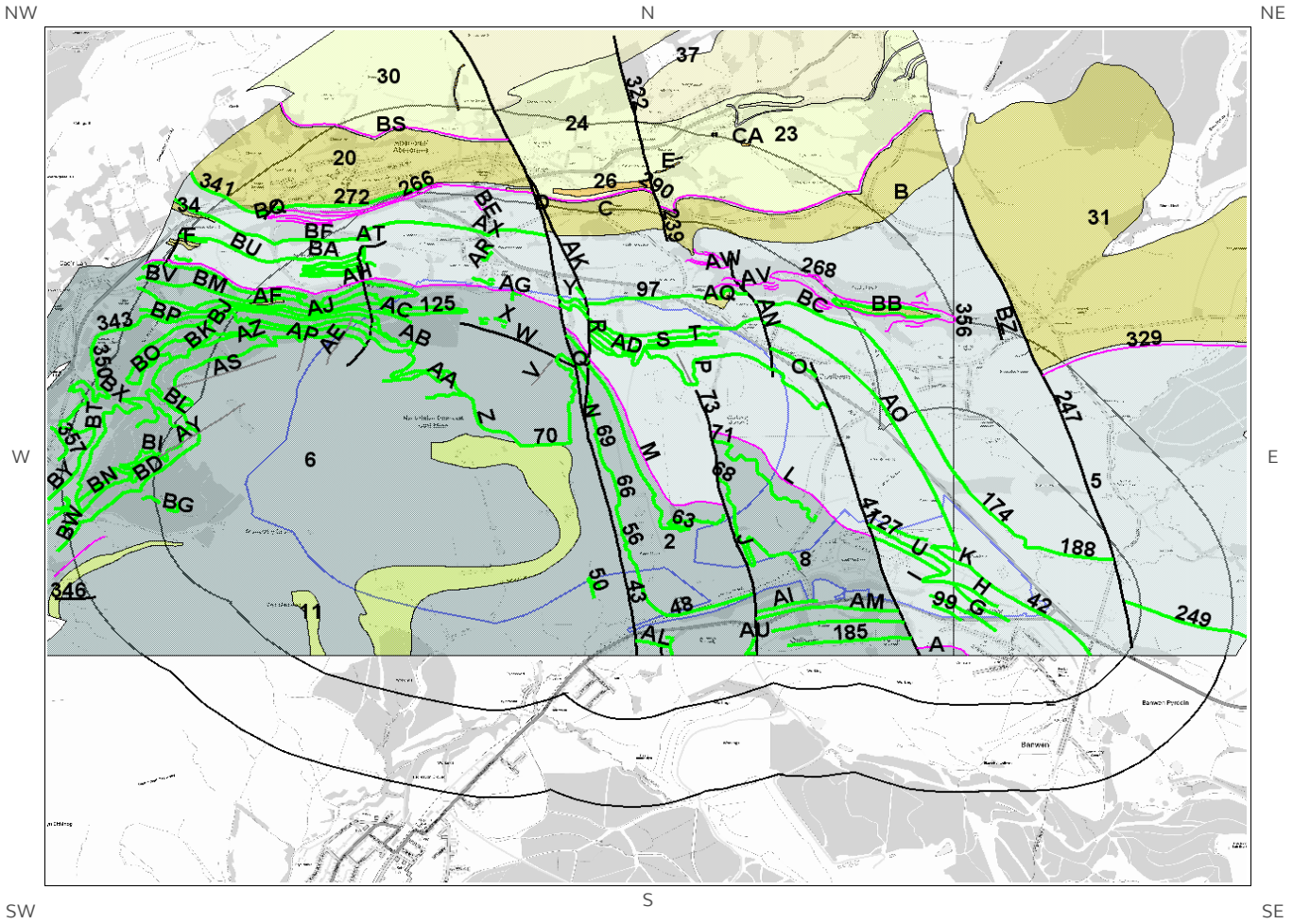
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1Y	0.0	On Site	SWLCM-MDSS	South Wales Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
2	0.0	On Site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
3AT	0.0	On Site	SWLCM-MDSS	South Wales Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
4O	0.0	On Site	SWLCM-MDSS	South Wales Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
5	0.0	On Site	SWLCM-MDSS	South Wales Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
6	0.0	On Site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
7	0.0	On Site	SWMCM-SDST	South Wales Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
8	0.0	On Site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
9Q	0.0	On Site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
10AQ	81.0	NE	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
11	142.0	SW	SWMCM-SDST	South Wales Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
12A	166.0	S	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
13A	169.0	S	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
14B	310.0	N	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
15C	341.0	N	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
16AF	341.0	NW	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
17D	355.0	N	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
18BR	411.0	SW	SWMCM-SDST	South Wales Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
19BB	474.0	NE	SWLCM-SDST	South Wales Lower Coal Measures Formation - Sandstone	Langsettian Sub-age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
40J	0.0	On Site	FAULT	Normal fault, observed
41	0.0	On Site	FAULT	Normal fault, inferred
42	0.0	On Site	ROCK	Coal seam, inferred ()
43	0.0	On Site	FAULT	Normal fault, observed
44G	0.0	On Site	ROCK	Coal seam, inferred ()
45G	0.0	On Site	ROCK	Coal seam, inferred ()
46G	0.0	On Site	ROCK	Coal seam, inferred ()
47G	0.0	On Site	ROCK	Coal seam, inferred ()
48	0.0	On Site	ROCK	Coal seam, inferred ()
49H	0.0	On Site	ROCK	Coal seam, inferred ()
50	0.0	On Site	ROCK	Coal seam, inferred ()
51H	0.0	On Site	ROCK	Coal seam, inferred ()
52I	0.0	On Site	ROCK	Coal seam, inferred ()
53I	0.0	On Site	ROCK	Coal seam, inferred ()
54J	0.0	On Site	ROCK	Coal seam, observed ()
55K	0.0	On Site	ROCK	Coal seam, inferred ()
56	0.0	On Site	ROCK	Coal seam, observed ()
57K	0.0	On Site	ROCK	Coal seam, inferred ()
58K	0.0	On Site	ROCK	Coal seam, inferred ()
59K	0.0	On Site	ROCK	Coal seam, inferred ()
60L	0.0	On Site	FOSSIL_HORIZON	Fossil horizon, marine band ()
61AO	0.0	On Site	ROCK	Coal seam, inferred ()
62N	0.0	On Site	FAULT	Normal fault, observed
63	0.0	On Site	ROCK	Coal seam, observed ()
64L	0.0	On Site	ROCK	Coal seam, observed ()
65M	0.0	On Site	FOSSIL_HORIZON	Fossil horizon, marine band ()
66	0.0	On Site	ROCK	Coal seam, inferred ()
67M	0.0	On Site	ROCK	Coal seam, inferred ()
68	0.0	On Site	ROCK	Coal seam, inferred ()
69	0.0	On Site	ROCK	Coal seam, observed ()
70	0.0	On Site	ROCK	Coal seam, observed ()
71	0.0	On Site	ROCK	Coal seam, inferred ()
72Z	0.0	On Site	ROCK	Coal seam, observed ()
73	0.0	On Site	FAULT	Normal fault, inferred
74N	0.0	On Site	FAULT	Normal fault, inferred
75O	0.0	On Site	ROCK	Coal seam, observed ()
76N	0.0	On Site	ROCK	Coal seam, inferred ()
77V	0.0	On Site	FOLD_AXIS	Axial plane trace of major syncline
78P	0.0	On Site	ROCK	Coal seam, observed ()
79P	0.0	On Site	FOLD_AXIS	Axial plane trace of major anticline
80Q	0.0	On Site	ROCK	Coal seam, inferred ()
81AN	0.0	On Site	FAULT	Normal fault, observed
82R	0.0	On Site	FAULT	Normal fault, observed
83W	0.0	On Site	FAULT	Normal fault, inferred
84R	0.0	On Site	FOSSIL_HORIZON	Fossil horizon, marine band ()
85R	0.0	On Site	ROCK	Coal seam, inferred ()
86R	0.0	On Site	ROCK	Coal seam, inferred ()
87S	0.0	On Site	ROCK	Coal seam, observed ()

ID	Distance (m)	Direction	Category Description	Feature Description
88S	0.0	On Site	ROCK	Coal seam, observed ()
89P	0.0	On Site	ROCK	Coal seam, inferred ()
90T	0.0	On Site	ROCK	Coal seam, inferred ()
91S	0.0	On Site	ROCK	Coal seam, observed ()
92R	0.0	On Site	ROCK	Coal seam, inferred ()
93S	0.0	On Site	ROCK	Coal seam, observed ()
94R	0.0	On Site	ROCK	Coal seam, inferred ()
95T	0.0	On Site	ROCK	Coal seam, inferred ()
96R	0.0	On Site	ROCK	Coal seam, inferred ()
97	0.0	On Site	ROCK	Coal seam, observed ()
98AI	0.0	On Site	ROCK	Coal seam, inferred ()
99	0.0	On Site	ROCK	Coal seam, inferred ()
100U	0.0	On Site	ROCK	Coal seam, inferred ()
101I	0.0	On Site	ROCK	Coal seam, inferred ()
102U	0.0	On Site	ROCK	Coal seam, inferred ()
103Q	0.0	On Site	ROCK	Coal seam, observed ()
104X	0.0	On Site	ROCK	Coal seam, observed ()
105V	0.0	On Site	ROCK	Coal seam, observed ()
106W	0.0	On Site	ROCK	Coal seam, inferred ()
107X	0.0	On Site	ROCK	Coal seam, inferred ()
108X	0.0	On Site	ROCK	Coal seam, observed ()
109Y	0.0	On Site	ROCK	Coal seam, inferred ()
110Y	0.0	On Site	ROCK	Coal seam, inferred ()
111R	0.0	On Site	ROCK	Coal seam, inferred ()
112R	0.0	On Site	ROCK	Coal seam, observed ()
113Z	0.0	On Site	ROCK	Coal seam, observed ()
114AA	0.0	On Site	ROCK	Coal seam, observed ()
115AA	0.0	On Site	ROCK	Coal seam, observed ()
116AB	0.0	On Site	ROCK	Coal seam, observed ()
117AA	0.0	On Site	ROCK	Coal seam, inferred ()
118AC	0.0	On Site	ROCK	Coal seam, observed ()
119AB	0.0	On Site	ROCK	Coal seam, observed ()
120AB	0.0	On Site	ROCK	Coal seam, observed ()
121AC	0.0	On Site	ROCK	Coal seam, observed ()
122AC	0.0	On Site	ROCK	Coal seam, observed ()
123AB	0.0	On Site	ROCK	Coal seam, observed ()
124AC	0.0	On Site	ROCK	Coal seam, observed ()
125	0.0	On Site	ROCK	Coal seam, observed ()
126U	0.0	On Site	ROCK	Coal seam, inferred ()
127	0.0	On Site	ROCK	Coal seam, inferred ()
128AB	0.0	On Site	ROCK	Coal seam, observed ()
129Q	0.0	On Site	ROCK	Coal seam, observed ()
130AD	0.0	On Site	ROCK	Coal seam, inferred ()
131AD	0.0	On Site	ROCK	Coal seam, observed ()
132R	0.0	On Site	ROCK	Coal seam, observed ()
133AD	0.0	On Site	ROCK	Coal seam, observed ()
134AD	0.0	On Site	ROCK	Coal seam, observed ()
135S	0.0	On Site	ROCK	Coal seam, observed ()
136R	0.0	On Site	ROCK	Coal seam, observed ()
137S	0.0	On Site	ROCK	Coal seam, observed ()
138AD	0.0	On Site	ROCK	Coal seam, observed ()
139S	0.0	On Site	ROCK	Coal seam, observed ()
140AD	0.0	On Site	ROCK	Coal seam, observed ()

ID	Distance (m)	Direction	Category Description	Feature Description
141S	0.0	On Site	ROCK	Coal seam, observed ()
142AA	0.0	On Site	ROCK	Coal seam, observed ()
143AE	0.0	On Site	FOLD_AXIS	Axial plane trace of major syncline
144AE	0.0	On Site	ROCK	Coal seam, observed ()
145AE	0.0	On Site	ROCK	Coal seam, observed ()
146AE	0.0	On Site	FAULT	Normal fault, observed
147AE	0.0	On Site	ROCK	Coal seam, observed ()
148AF	0.0	On Site	ROCK	Coal seam, observed ()
149AH	0.0	On Site	FOSSIL_HORIZON	Fossil horizon, marine band ()
150AG	0.0	On Site	ROCK	Coal seam, observed ()
151AJ	5.0	NW	ROCK	Coal seam, observed ()
152Y	11.0	N	ROCK	Coal seam, inferred ()
153AG	14.0	N	ROCK	Coal seam, inferred ()
154AH	18.0	NW	ROCK	Coal seam, observed ()
155AH	19.0	NW	ROCK	Coal seam, observed ()
156AI	33.0	S	ROCK	Coal seam, observed ()
157O	36.0	NE	ROCK	Coal seam, inferred ()
158AG	39.0	N	ROCK	Coal seam, observed ()
159AE	39.0	NW	FOLD_AXIS	Axial plane trace of major anticline
160AM	44.0	S	ROCK	Coal seam, inferred ()
161AJ	45.0	NW	ROCK	Coal seam, observed ()
162AH	47.0	NW	ROCK	Coal seam, observed ()
163AH	47.0	NW	ROCK	Coal seam, inferred ()
164AJ	53.0	NW	ROCK	Coal seam, observed ()
165AL	58.0	SE	ROCK	Coal seam, observed ()
166AK	68.0	N	FAULT	Normal fault, inferred
167AH	72.0	NW	FAULT	Normal fault, inferred
168AK	73.0	N	FAULT	Normal fault, inferred
169AH	77.0	NW	ROCK	Coal seam, observed ()
170AL	91.0	S	ROCK	Coal seam, inferred ()
171AM	100.0	S	ROCK	Coal seam, inferred ()
172AL	105.0	S	ROCK	Coal seam, observed ()
173AL	106.0	S	FAULT	Normal fault, inferred
174	107.0	NE	ROCK	Coal seam, inferred ()
175AP	121.0	NW	ROCK	Coal seam, observed ()
176AN	128.0	N	ROCK	Coal seam, inferred ()
177AH	136.0	NW	ROCK	Coal seam, observed ()
178AR	144.0	NE	ROCK	Coal seam, observed ()
179AO	144.0	N	ROCK	Coal seam, inferred ()
180AP	159.0	NW	ROCK	Coal seam, observed ()
181AQ	165.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
182A	166.0	S	FOSSIL_HORIZON	Fossil horizon, marine band ()
183AH	166.0	NW	ROCK	Coal seam, observed ()
184A	169.0	S	FOSSIL_HORIZON	Fossil horizon, marine band ()
185	170.0	S	ROCK	Coal seam, inferred ()
186AQ	182.0	NE	ROCK	Coal seam, observed ()
187AS	183.0	NW	FOLD_AXIS	Axial plane trace of major syncline
188	186.0	NE	ROCK	Coal seam, inferred ()
189AJ	199.0	NW	ROCK	Coal seam, observed ()
190AR	200.0	N	ROCK	Coal seam, observed ()
191AS	206.0	NW	ROCK	Coal seam, observed ()
192BC	207.0	NE	ROCK	Coal seam, observed ()
193AP	209.0	NW	ROCK	Coal seam, observed ()

ID	Distance (m)	Direction	Category Description	Feature Description
194AT	221.0	NW	ROCK	Coal seam, observed ()
195AP	223.0	NW	ROCK	Coal seam, observed ()
196AT	228.0	NW	FAULT	Normal fault, observed
197AQ	228.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
198AU	229.0	SE	ROCK	Coal seam, inferred ()
199AU	230.0	SE	ROCK	Coal seam, observed ()
200AP	231.0	NW	ROCK	Coal seam, observed ()
201AQ	236.0	NE	FAULT	Normal fault, inferred
202AH	242.0	NW	ROCK	Coal seam, inferred ()
203AH	257.0	NW	ROCK	Coal seam, inferred ()
204AV	257.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
205AY	257.0	W	FOLD_AXIS	Axial plane trace of major anticline
206AV	260.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
207AW	265.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
208AH	269.0	NW	ROCK	Coal seam, observed ()
209AW	277.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
210AP	280.0	NW	ROCK	Coal seam, observed ()
211AF	280.0	NW	ROCK	Coal seam, observed ()
212AH	282.0	NW	ROCK	Coal seam, inferred ()
213AX	285.0	N	ROCK	Coal seam, observed ()
214AU	287.0	S	ROCK	Coal seam, inferred ()
215AF	288.0	NW	ROCK	Coal seam, observed ()
216AT	291.0	NW	FAULT	Normal fault, inferred
217AH	294.0	NW	ROCK	Coal seam, observed ()
218AV	303.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
219BF	303.0	N	ROCK	Coal seam, inferred ()
220AT	307.0	NW	ROCK	Coal seam, inferred ()
221AF	310.0	NW	ROCK	Coal seam, inferred ()
222AV	313.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
223AT	314.0	NW	ROCK	Coal seam, observed ()
224AH	314.0	NW	ROCK	Coal seam, observed ()
225AX	322.0	N	ROCK	Coal seam, inferred ()
226AF	323.0	NW	ROCK	Coal seam, inferred ()
227AT	323.0	NW	ROCK	Coal seam, observed ()
228AT	328.0	NW	ROCK	Coal seam, inferred ()
229BD	329.0	NW	ROCK	Coal seam, inferred ()
230AY	329.0	NW	ROCK	Coal seam, observed ()
231AT	331.0	NW	ROCK	Coal seam, observed ()
232AZ	332.0	NW	ROCK	Coal seam, observed ()
233AY	345.0	NW	ROCK	Coal seam, observed ()
234AT	346.0	NW	ROCK	Coal seam, observed ()
235BA	350.0	NW	ROCK	Coal seam, observed ()
236AZ	362.0	NW	ROCK	Coal seam, observed ()
237BA	364.0	NW	ROCK	Coal seam, observed ()
238AZ	368.0	NW	ROCK	Coal seam, observed ()
239	371.0	N	FAULT	Normal fault, inferred
240BB	374.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
241BG	379.0	W	ROCK	Coal seam, observed ()
242BC	381.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
243AF	382.0	NW	ROCK	Coal seam, inferred ()
244BC	389.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
245AY	401.0	NW	ROCK	Coal seam, observed ()
246BC	406.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()

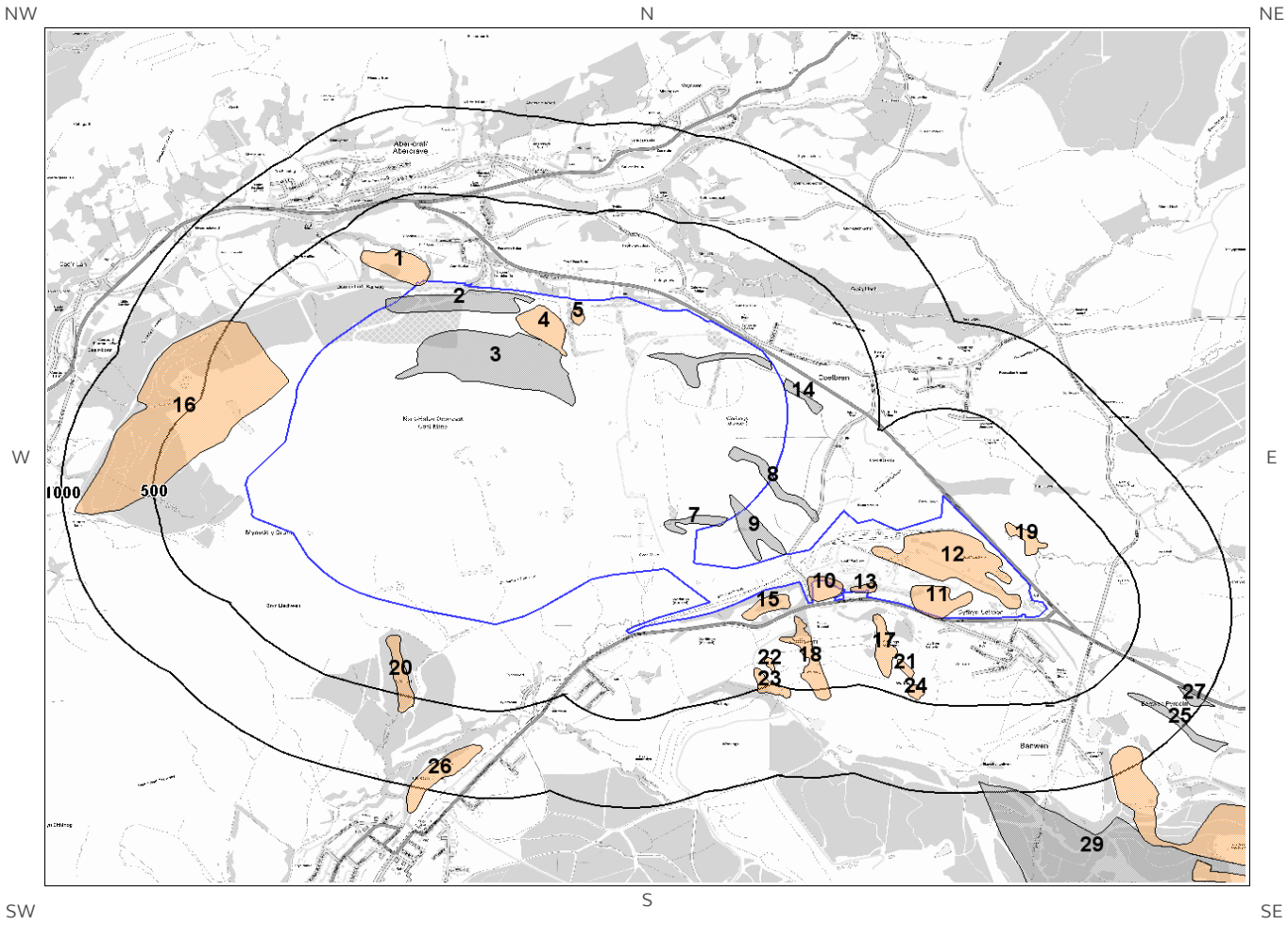
ID	Distance (m)	Direction	Category Description	Feature Description
247	408.0	E	FAULT	Normal fault, inferred
248AY	410.0	NW	ROCK	Coal seam, observed ()
249	411.0	E	ROCK	Coal seam, inferred ()
250AF	411.0	NW	ROCK	Coal seam, inferred ()
251AY	414.0	NW	ROCK	Coal seam, observed ()
252BE	421.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
253BC	422.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
254AY	426.0	NW	ROCK	Coal seam, observed ()
255D	426.0	N	FAULT	Normal fault, observed
256BD	448.0	W	ROCK	Coal seam, observed ()
257BE	453.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
258AZ	455.0	NW	ROCK	Coal seam, observed ()
259BD	468.0	W	ROCK	Coal seam, observed ()
260BD	468.0	W	ROCK	Coal seam, observed ()
261BF	471.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
262BJ	472.0	NW	ROCK	Coal seam, observed ()
263BB	474.0	NE	ROCK	Coal seam, observed ()
264BG	477.0	W	ROCK	Coal seam, observed ()
265BU	483.0	NW	ROCK	Coal seam, inferred ()
266	485.0	N	FOSSIL_HORIZON	Fossil horizon, marine band ()
267BH	491.0	N	FAULT	Normal fault, observed
268	496.0	NE	FOSSIL_HORIZON	Fossil horizon, marine band ()
269BB	498.0	NE	ROCK	Coal seam, inferred ()

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 231

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
3	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
4	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
5	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
6	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
7	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
8	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
9	0.0	On Site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
10	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
11	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
12	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
13	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
14	2.0	E	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
15	36.0	SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
16	58.0	W	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
17	84.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
18	95.0	SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
19	97.0	NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
20	175.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
21	296.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
22	349.0	SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
23	382.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
24	408.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

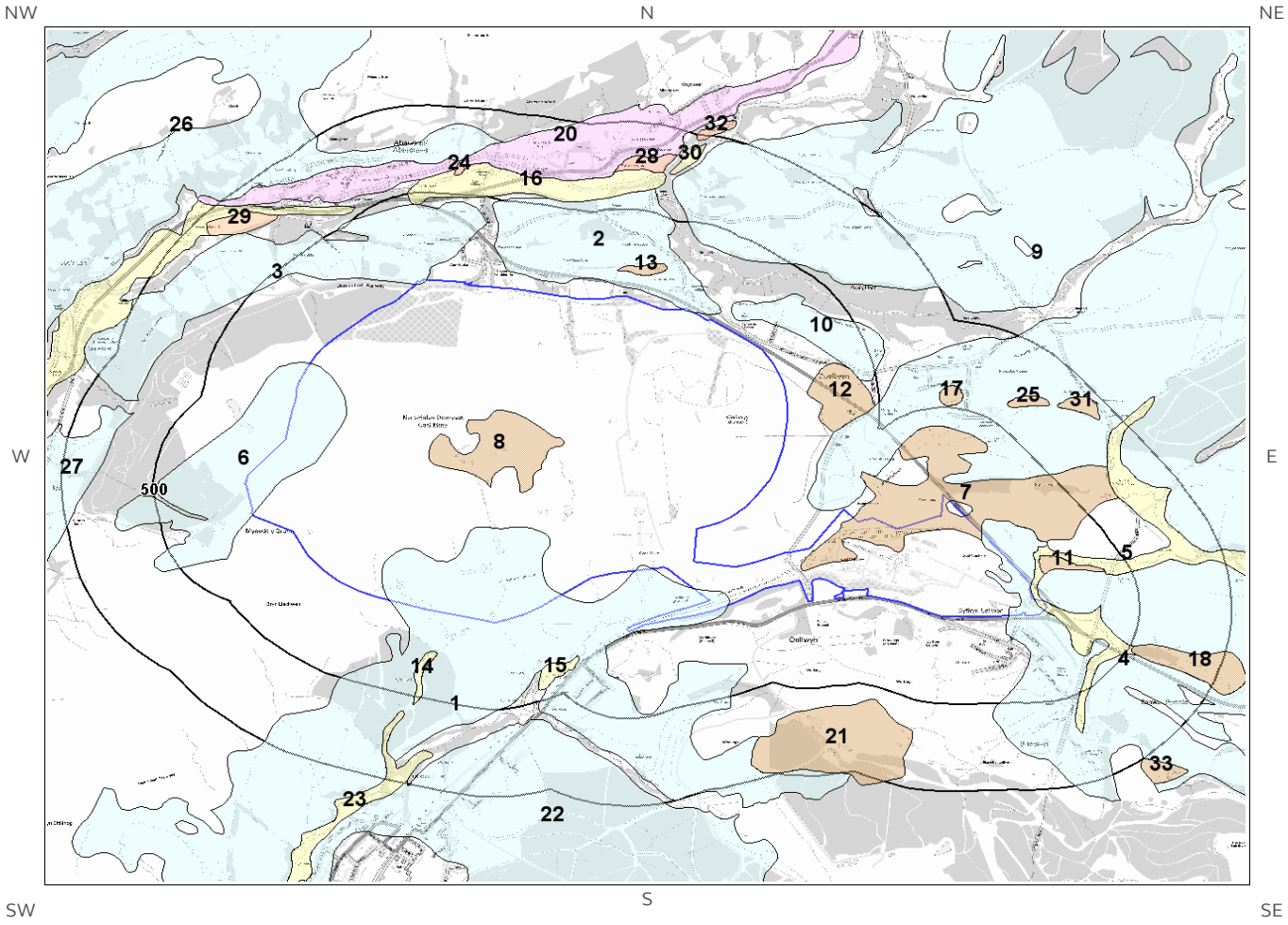
2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low
36.0	SE	Mixed	Very High	Low

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	0.0	On Site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
6	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
7	0.0	On Site	PEAT-P	PEAT	PEAT
8	0.0	On Site	PEAT-P	PEAT	PEAT
9	10.0	N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
10	71.0	NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
11	94.0	NE	PEAT-P	PEAT	PEAT
12	118.0	E	PEAT-P	PEAT	PEAT
13	136.0	N	PEAT-P	PEAT	PEAT
14	228.0	S	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
15	306.0	SW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
16	431.0	N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Low
0.0	On Site	Mixed	High	Low
0.0	On Site	Mixed	High	Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Mixed	High	Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Intergranular	High	Very Low
0.0	On Site	Mixed	High	Low
4.0	NE	Mixed	High	Low
10.0	N	Mixed	High	Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

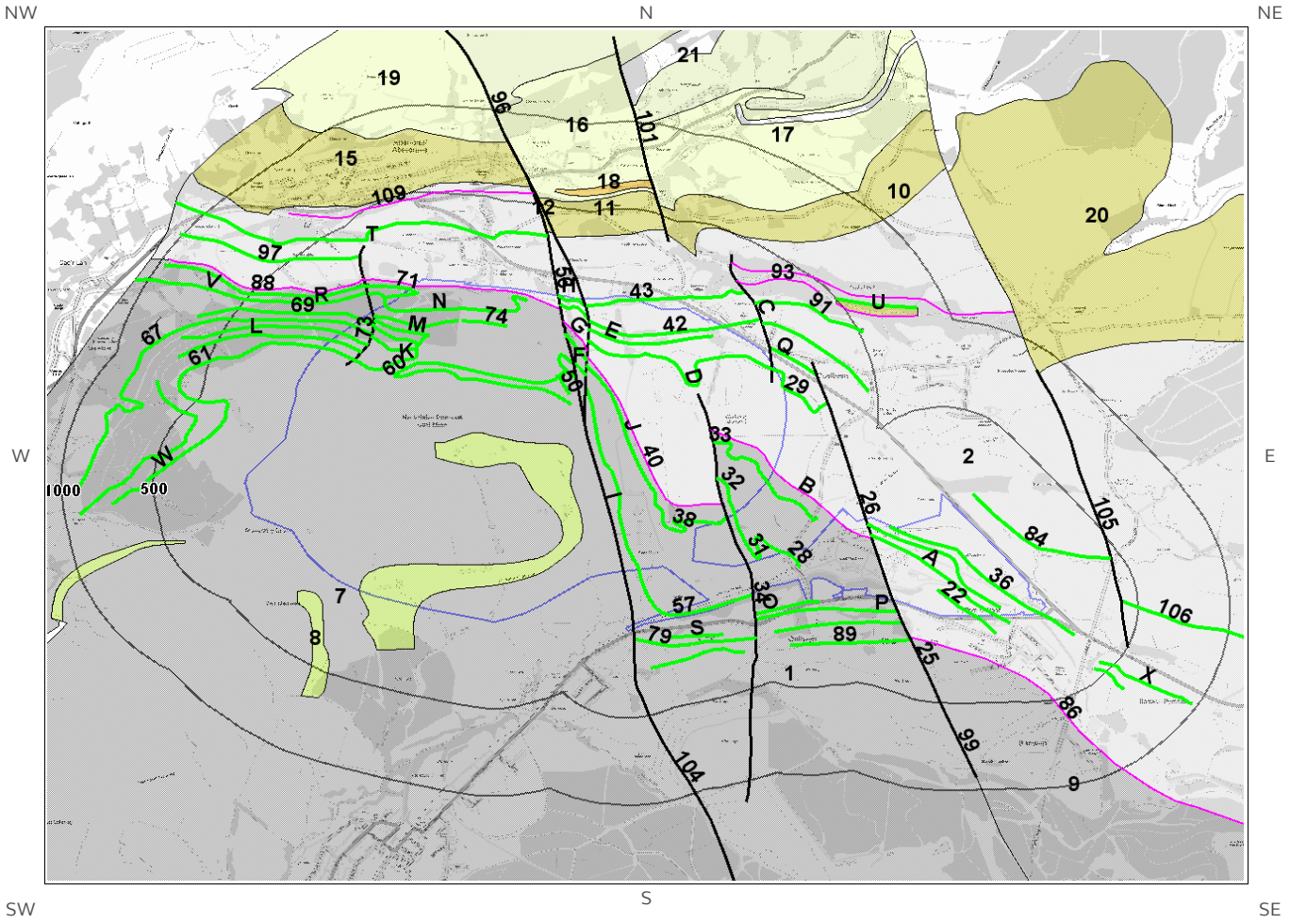
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 231

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	0.0	On Site	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3T	0.0	On Site	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4H	0.0	On Site	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
5F	0.0	On Site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
6	0.0	On Site	SWMCM-SDST	SOUTH WALES MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
7	0.0	On Site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	137.0	SW	SWMCM-SDST	SOUTH WALES MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
9	160.0	S	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	303.0	N	SWLCM-SDST	SOUTH WALES LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
11	331.0	N	SWLCM-SDST	SOUTH WALES LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
12	350.0	N	SWLCM-SDST	SOUTH WALES LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
13	399.0	SW	SWMCM-SDST	SOUTH WALES MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
14U	484.0	NE	SWLCM-SDST	SOUTH WALES LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Fracture	High	Moderate
0.0	On Site	Fracture	Moderate	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
22	0.0	On Site	ROCK	Coal seam, inferred
23A	0.0	On Site	ROCK	Coal seam, inferred
24A	0.0	On Site	ROCK	Coal seam, inferred
25	0.0	On Site	FAULT	Fault, observed, displacement unknown
26	0.0	On Site	FAULT	Fault, inferred, displacement unknown
27B	0.0	On Site	FOSSIL_HORIZON	Marine band
28	0.0	On Site	ROCK	Coal seam, observed
29	0.0	On Site	ROCK	Coal seam, observed
30B	0.0	On Site	ROCK	Coal seam, observed
31	0.0	On Site	ROCK	Coal seam, observed
32	0.0	On Site	ROCK	Coal seam, observed
33	0.0	On Site	ROCK	Coal seam, observed
34	0.0	On Site	FAULT	Fault, inferred, displacement unknown
35C	0.0	On Site	FAULT	Fault, observed, displacement unknown
36	0.0	On Site	ROCK	Coal seam, inferred
37C	0.0	On Site	ROCK	Coal seam, inferred
38	0.0	On Site	ROCK	Coal seam, observed
39D	0.0	On Site	ROCK	Coal seam, observed
40	0.0	On Site	FOSSIL_HORIZON	Marine band
41D	0.0	On Site	ROCK	Coal seam, observed
42	0.0	On Site	ROCK	Coal seam, observed
43	0.0	On Site	ROCK	Coal seam, observed
44J	0.0	On Site	ROCK	Coal seam, inferred
45I	0.0	On Site	FAULT	Fault, observed, displacement unknown
46E	0.0	On Site	ROCK	Coal seam, inferred
47E	0.0	On Site	ROCK	Coal seam, inferred
48F	0.0	On Site	ROCK	Coal seam, observed

ID	Distance	Direction	Category Description	Feature Description
49F	0.0	On Site	ROCK	Coal seam, inferred
50	0.0	On Site	ROCK	Coal seam, observed
51G	0.0	On Site	FOSSIL_HORIZON	Marine band
52F	0.0	On Site	ROCK	Coal seam, observed
53G	0.0	On Site	FAULT	Fault, inferred, displacement unknown
54H	0.0	On Site	ROCK	Coal seam, inferred
55H	0.0	On Site	ROCK	Coal seam, inferred
56	0.0	On Site	FAULT	Fault, inferred, displacement unknown
57	0.0	On Site	ROCK	Coal seam, inferred
58I	0.0	On Site	ROCK	Coal seam, observed
59J	0.0	On Site	ROCK	Coal seam, inferred
60	0.0	On Site	ROCK	Coal seam, observed
61	0.0	On Site	ROCK	Coal seam, observed
62K	0.0	On Site	ROCK	Coal seam, observed
63L	0.0	On Site	ROCK	Coal seam, observed
64K	0.0	On Site	ROCK	Coal seam, observed
65L	0.0	On Site	ROCK	Coal seam, observed
66M	0.0	On Site	ROCK	Coal seam, observed
67	0.0	On Site	ROCK	Coal seam, observed
68M	0.0	On Site	ROCK	Coal seam, observed
69	0.0	On Site	ROCK	Coal seam, observed
70N	0.0	On Site	ROCK	Coal seam, observed
71	0.0	On Site	ROCK	Coal seam, observed
72N	0.0	On Site	FOSSIL_HORIZON	Marine band
73	0.0	On Site	FAULT	Fault, observed, displacement unknown
74	0.0	On Site	ROCK	Coal seam, inferred
75O	4.0	S	ROCK	Coal seam, inferred
76Q	41.0	NE	ROCK	Coal seam, inferred
77O	52.0	S	ROCK	Coal seam, observed
78P	56.0	S	ROCK	Coal seam, inferred
79	57.0	SE	ROCK	Coal seam, observed
80R	106.0	NW	ROCK	Coal seam, observed
81S	106.0	S	ROCK	Coal seam, inferred
82P	109.0	S	ROCK	Coal seam, inferred
83Q	125.0	NE	ROCK	Coal seam, inferred
84	125.0	NE	ROCK	Coal seam, inferred
85R	149.0	NW	ROCK	Coal seam, observed
86	160.0	S	FOSSIL_HORIZON	Marine band
87S	164.0	S	ROCK	Coal seam, inferred
88	179.0	NW	FOSSIL_HORIZON	Marine band
89	183.0	S	ROCK	Coal seam, inferred
90T	201.0	NW	FAULT	Fault, inferred, displacement unknown
91	202.0	NE	ROCK	Coal seam, observed
92S	221.0	S	ROCK	Coal seam, inferred
93	261.0	NE	FOSSIL_HORIZON	Marine band
94T	278.0	N	ROCK	Coal seam, inferred
95W	301.0	NW	ROCK	Coal seam, inferred
96	306.0	N	FAULT	Fault, observed, displacement unknown
97	312.0	NW	ROCK	Coal seam, inferred
98U	334.0	NE	FOSSIL_HORIZON	Marine band
99	343.0	S	FAULT	Fault, inferred, displacement unknown
100V	357.0	NW	ROCK	Coal seam, inferred
101	370.0	N	FAULT	Fault, inferred, displacement unknown

ID	Distance	Direction	Category Description	Feature Description
102V	391.0	NW	ROCK	Coal seam, inferred
103W	393.0	NW	ROCK	Coal seam, observed
104	395.0	S	FAULT	Fault, inferred, displacement unknown
105	405.0	E	FAULT	Fault, inferred, displacement unknown
106	409.0	E	ROCK	Coal seam, inferred
107X	432.0	SE	ROCK	Coal seam, inferred
108X	444.0	SE	ROCK	Coal seam, inferred
109	465.0	N	FOSSIL_HORIZON	Marine band
110U	484.0	NE	FOSSIL_HORIZON	Marine band
111U	499.0	NE	ROCK	Coal seam, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

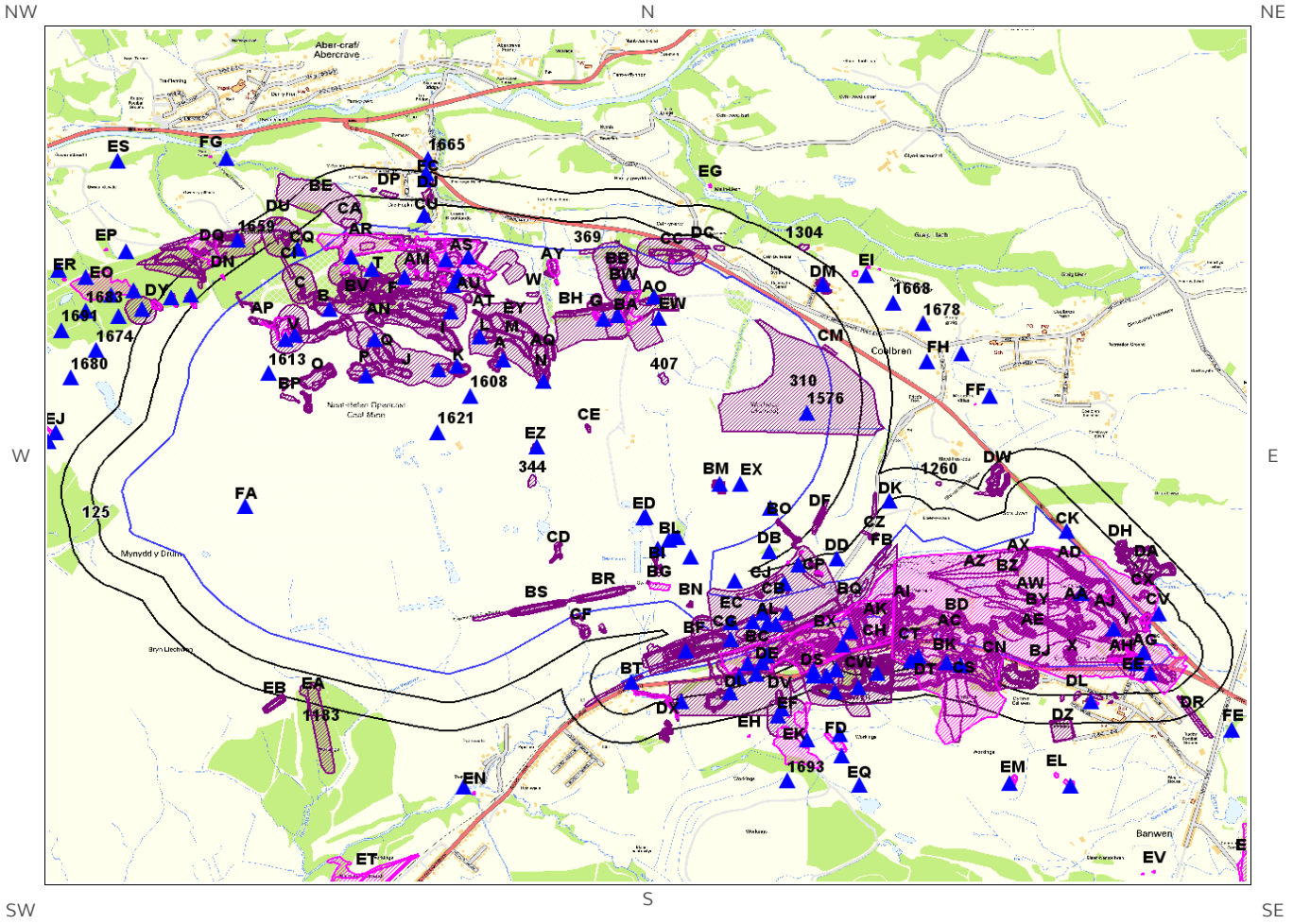
The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

---

4 Ground Workings map



Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1C	0.0	On Site	281896 211838	Unspecified Pit	1948
2B	0.0	On Site	281987 211776	Unspecified Pit	1948
3T	0.0	On Site	282212 211920	Unspecified Ground Workings	1948
4D	0.0	On Site	282166 211895	Unspecified Ground Workings	1948
5S	0.0	On Site	282105 211908	Unspecified Ground Workings	1948
6F	0.0	On Site	282277 211813	Unspecified Pit	1948
7U	0.0	On Site	282491 211904	Unspecified Ground Workings	1948
8E	0.0	On Site	282396 211774	Unspecified Ground Workings	1948
9Q	0.0	On Site	282248 211590	Unspecified Ground Workings	1948
10L	0.0	On Site	282661 211652	Unspecified Pit	1948
11M	0.0	On Site	282815 211624	Unspecified Ground Workings	1948
12N	0.0	On Site	282892 211494	Unspecified Pit	1948
13G	0.0	On Site	283122 211755	Unspecified Pit	1948
14I	0.0	On Site	282478 211636	Unspecified Pit	1948
15K	0.0	On Site	282554 211514	Unspecified Ground Workings	1948
16O	0.0	On Site	281966 211484	Unspecified Ground Workings	1948
17P	0.0	On Site	282164 211508	Unspecified Ground Workings	1948
18H	0.0	On Site	281986 211695	Unspecified Ground Workings	1948
19A	0.0	On Site	282724 211575	Unspecified Ground Workings	1948
20A	0.0	On Site	282713 211522	Unspecified Pit	1948
21J	0.0	On Site	282338 211498	Unspecified Pit	1948

ID	Distance (m)	Direction	NGR	Use	Date
22B	0.0	On Site	281987 211776	Unspecified Pit	1903
23C	0.0	On Site	281896 211838	Unspecified Pit	1903
24R	0.0	On Site	281654 211801	Unspecified Ground Workings	1903
25D	0.0	On Site	282124 211862	Unspecified Pit	1903
26AM	0.0	On Site	282380 211935	Unspecified Pit	1903
27E	0.0	On Site	282396 211774	Unspecified Ground Workings	1903
28F	0.0	On Site	282273 211813	Unspecified Pit	1903
29F	0.0	On Site	282313 211798	Unspecified Pit	1903
30W	0.0	On Site	282861 211847	Unspecified Ground Workings	1903
31G	0.0	On Site	283130 211811	Unspecified Ground Workings	1903
32H	0.0	On Site	281986 211695	Unspecified Ground Workings	1903
33I	0.0	On Site	282478 211636	Unspecified Pit	1903
34AN	0.0	On Site	282211 211720	Unspecified Ground Workings	1903
35J	0.0	On Site	282338 211498	Unspecified Pit	1903
36K	0.0	On Site	282470 211507	Unspecified Pit	1903
37L	0.0	On Site	282661 211652	Unspecified Pit	1903
38M	0.0	On Site	282815 211624	Unspecified Ground Workings	1903
39N	0.0	On Site	282892 211494	Unspecified Pit	1903
40A	0.0	On Site	282724 211575	Unspecified Ground Workings	1903
41A	0.0	On Site	282713 211522	Unspecified Pit	1903
42K	0.0	On Site	282554 211514	Unspecified Ground Workings	1903
43O	0.0	On Site	281966 211484	Unspecified Ground Workings	1903
44P	0.0	On Site	282164 211508	Unspecified Ground Workings	1903
45AT	0.0	On Site	282651 211756	Unspecified Ground Workings	1903
46Q	0.0	On Site	282263 211585	Unspecified Ground Workings	1903
47R	0.0	On Site	281704 211793	Unspecified Ground Workings	1877
48S	0.0	On Site	282047 211976	Old Coal Level	1877
49T	0.0	On Site	282168 211954	Old Coal Level	1877
50AV	0.0	On Site	282350 212069	Unspecified Ground Workings	1877

ID	Distance (m)	Direction	NGR	Use	Date
51D	0.0	On Site	282163 211836	Unspecified Pit	1877
52U	0.0	On Site	282506 211890	Old Coal Level	1877
53V	0.0	On Site	281868 211655	Old Coal Level	1877
54H	0.0	On Site	281893 211637	Old Coal Level	1877
55V	0.0	On Site	281879 211669	Unspecified Pit	1877
56V	0.0	On Site	281846 211646	Unspecified Pit	1877
57AP	0.0	On Site	281704 211724	Unspecified Ground Workings	1877
58O	0.0	On Site	281966 211484	Unspecified Ground Workings	1877
59W	0.0	On Site	282782 211804	Unspecified Pit	1877
60AD	0.0	On Site	285082 210657	Unspecified Ground Workings	1948
61AB	0.0	On Site	285265 210535	Unspecified Ground Workings	1948
62AJ	0.0	On Site	285231 210443	Unspecified Pit	1948
63X	0.0	On Site	285098 210246	Unspecified Pit	1948
64AH	0.0	On Site	285296 210247	Unspecified Pit	1948
65AF	0.0	On Site	285096 210401	Unspecified Ground Workings	1948
66X	0.0	On Site	285090 210281	Unspecified Ground Workings	1948
67Y	0.0	On Site	285314 210362	Unspecified Ground Workings	1948
68Y	0.0	On Site	285404 210409	Old Coal Level	1948
69AA	0.0	On Site	285121 210463	Unspecified Pit	1948
70Z	0.0	On Site	284746 210333	Unspecified Ground Workings	1948
71Z	0.0	On Site	284676 210315	Unspecified Pit	1948
72AC	0.0	On Site	284589 210354	Unspecified Ground Workings	1948
73AE	0.0	On Site	284933 210359	Unspecified Pit	1948
74AA	0.0	On Site	285143 210530	Unspecified Pit	1903
75Z	0.0	On Site	284676 210315	Unspecified Pit	1903
76AA	0.0	On Site	285108 210475	Unspecified Pit	1903
77X	0.0	On Site	285088 210244	Unspecified Pit	1903
78AB	0.0	On Site	285244 210511	Old Coal Level	1903
79AI	0.0	On Site	284377 210483	Unspecified Ground Workings	1903

ID	Distance (m)	Direction	NGR	Use	Date
80AC	0.0	On Site	284558 210351	Unspecified Ground Workings	1903
81AG	0.0	On Site	285402 210270	Old Coal Level	1903
82AD	0.0	On Site	285184 210590	Unspecified Pit	1903
83AD	0.0	On Site	285080 210657	Unspecified Pit	1903
84AE	0.0	On Site	284883 210391	Unspecified Ground Workings	1903
85AF	0.0	On Site	285029 210382	Unspecified Ground Workings	1903
86AG	0.0	On Site	285328 210258	Old Coal Pit	1903
87X	0.0	On Site	285088 210244	Unspecified Pit	1877
88Y	0.0	On Site	285323 210294	Unspecified Pit	1877
89AH	0.0	On Site	285277 210244	Unspecified Pit	1877
90AA	0.0	On Site	285134 210534	Unspecified Pit	1877
91AD	0.0	On Site	285130 210613	Unspecified Ground Workings	1877
92AI	0.0	On Site	284392 210465	Unspecified Ground Workings	1877
93BK	0.0	On Site	284570 210257	Unspecified Ground Workings	1877
94BD	0.0	On Site	284625 210426	Unspecified Ground Workings	1877
95AE	0.0	On Site	284875 210398	Unspecified Pit	1877
96Z	0.0	On Site	284771 210391	Unspecified Ground Workings	1877
97AF	0.0	On Site	285041 210372	Unspecified Ground Workings	1877
98AJ	0.0	On Site	285256 210414	Unspecified Ground Workings	1877
99AF	0.0	On Site	285091 210398	Unspecified Ground Workings	1877
100X	0.0	On Site	285079 210280	Unspecified Ground Workings	1877
101AA	0.0	On Site	285090 210482	Unspecified Pit	1877
102AB	0.0	On Site	285274 210484	Unspecified Ground Workings	1877
103AK	0.0	On Site	284265 210405	Unspecified Ground Workings	1876
104BL	0.0	On Site	283429 210759	Old Coal Level	1901
105AL	0.0	On Site	283833 210404	Old Coal Pit	1901
106AI	0.0	On Site	284297 210482	Unspecified Ground Workings	1901
107AK	0.0	On Site	284227 210445	Unspecified Ground Workings	1901
108AL	0.0	On Site	283951 210352	Unspecified Ground Workings	1901

ID	Distance (m)	Direction	NGR	Use	Date
109CH	0.0	On Site	284294 210315	Unspecified Ground Workings	1901
110AA	0.0	On Site	285142 210529	Old Coal Level	1900
111AW	0.0	On Site	284929 210515	Unspecified Ground Workings	1900
112AH	0.0	On Site	285348 210272	Old Coal Level	1900
113AD	0.0	On Site	285078 210650	Unspecified Ground Workings	1900
114X	0.0	On Site	285096 210238	Unspecified Pit	1900
115AI	0.0	On Site	284377 210484	Unspecified Ground Workings	1900
116AE	0.0	On Site	284885 210389	Unspecified Pit	1900
117AF	0.0	On Site	285032 210381	Unspecified Ground Workings	1900
118C	0.0	On Site	281903 211872	Unspecified Heap	1948
119B	0.0	On Site	281995 211821	Unspecified Heap	1948
120S	0.0	On Site	282124 211941	Unspecified Old Level	1948
121AM	0.0	On Site	282495 211973	Unspecified Heap	1948
122U	0.0	On Site	282578 211838	Unspecified Old Level	1948
123F	0.0	On Site	282222 211846	Unspecified Heap	1948
124U	0.0	On Site	282458 211838	Unspecified Heap	1948
125E	0.0	On Site	282511 211800	Unspecified Heap	1948
126F	0.0	On Site	282317 211798	Unspecified Heap	1948
127U	0.0	On Site	282532 211884	Unspecified Heap	1948
128AU	0.0	On Site	282592 211832	Unspecified Heap	1948
129AO	0.0	On Site	283367 211817	Unspecified Heap	1948
130G	0.0	On Site	283168 211718	Old Coal Levels	1948
131G	0.0	On Site	283121 211813	Unspecified Heaps	1948
132E	0.0	On Site	282444 211717	Unspecified Heap	1948
133F	0.0	On Site	282196 211756	Unspecified Heap	1948
134AN	0.0	On Site	282224 211733	Unspecified Heap	1948
135M	0.0	On Site	282870 211636	Unspecified Heap	1948
136AQ	0.0	On Site	282904 211576	Unspecified Heaps	1948
137L	0.0	On Site	282723 211705	Unspecified Heaps	1948

ID	Distance (m)	Direction	NGR	Use	Date
138G	0.0	On Site	283151 211740	Unspecified Heap	1948
139G	0.0	On Site	283182 211723	Refuse Heap	1948
140G	0.0	On Site	283210 211753	Unspecified Heap	1948
141AO	0.0	On Site	283279 211732	Colliery	1948
142AM	0.0	On Site	282328 211899	Unspecified Old Levels	1948
143AR	0.0	On Site	282141 212051	Colliery	1948
144I	0.0	On Site	282524 211649	Unspecified Heap	1948
145AS	0.0	On Site	282568 212004	Colliery	1948
146A	0.0	On Site	282699 211533	Unspecified Heap	1948
147BU	0.0	On Site	282706 211966	Refuse Heap	1948
148AY	0.0	On Site	282938 211960	Refuse Heap	1948
149AP	0.0	On Site	281701 211730	Unspecified Heap	1948
150AP	0.0	On Site	281773 211715	Unspecified Heap	1948
151B	0.0	On Site	281995 211821	Unspecified Heap	1903
152C	0.0	On Site	281903 211872	Unspecified Heap	1903
153D	0.0	On Site	282110 211902	Unspecified Heap	1903
154D	0.0	On Site	282068 211883	Unspecified Heap	1903
155D	0.0	On Site	282216 211911	Unspecified Heaps	1903
156D	0.0	On Site	282222 211846	Unspecified Heap	1903
157D	0.0	On Site	282140 211829	Unspecified Heap	1903
158D	0.0	On Site	282193 211950	Unspecified Heap	1903
159E	0.0	On Site	282369 211826	Unspecified Heaps	1903
160AM	0.0	On Site	282331 211906	Unspecified Heap	1903
161AM	0.0	On Site	282487 211918	Unspecified Old Levels	1903
162BB	0.0	On Site	283210 211941	Unspecified Heaps	1903
163AP	0.0	On Site	281842 211662	Unspecified Old Levels	1903
164AP	0.0	On Site	281701 211730	Unspecified Heap	1903
165E	0.0	On Site	282444 211717	Unspecified Heap	1903
166I	0.0	On Site	282524 211649	Unspecified Heap	1903

ID	Distance (m)	Direction	NGR	Use	Date
167A	0.0	On Site	282699 211533	Unspecified Heap	1903
168M	0.0	On Site	282870 211636	Unspecified Heap	1903
169A Q	0.0	On Site	282904 211576	Unspecified Heaps	1903
170G	0.0	On Site	283210 211753	Unspecified Heap	1903
171G	0.0	On Site	283139 211746	Unspecified Old Levels	1903
172AR	0.0	On Site	282141 212051	Colliery	1903
173AS	0.0	On Site	282568 212004	Colliery	1903
174U	0.0	On Site	282531 211881	Unspecified Old Levels	1903
175AT	0.0	On Site	282712 211723	Unspecified Heap	1903
176M	0.0	On Site	282780 211693	Unspecified Heaps	1903
177H	0.0	On Site	281888 211646	Unspecified Old Levels	1903
178AP	0.0	On Site	281860 211719	Unspecified Heap	1903
179G	0.0	On Site	283209 211740	Unspecified Old Level	1903
180A N	0.0	On Site	282195 211756	Unspecified Heap	1903
181A U	0.0	On Site	282592 211829	Unspecified Heap	1903
182D	0.0	On Site	282103 211900	Unspecified Heaps	1877
183D	0.0	On Site	282226 211929	Unspecified Heaps	1877
184A M	0.0	On Site	282326 211907	Unspecified Heaps	1877
185D	0.0	On Site	282213 211846	Unspecified Heap	1877
186A U	0.0	On Site	282593 211831	Unspecified Heap	1877
187BA	0.0	On Site	283247 211737	Unspecified Heap	1877
188A M	0.0	On Site	282367 211948	Coal Levels	1877
189A M	0.0	On Site	282352 211932	Coal Levels	1877
190A V	0.0	On Site	282478 212034	Colliery	1877
191H	0.0	On Site	281877 211713	Unspecified Heap	1877
192A X	0.0	On Site	284875 210683	Unspecified Heap	1948
193AE	0.0	On Site	284964 210308	Colliery	1948
194AZ	0.0	On Site	284693 210618	Refuse Heap	1948
195AE	0.0	On Site	284865 210414	Refuse Heaps	1948

ID	Distance (m)	Direction	NGR	Use	Date
196AW	0.0	On Site	284895 210544	Refuse Heap	1948
197AA	0.0	On Site	285133 210406	Unspecified Heaps	1948
198AF	0.0	On Site	285132 210400	Unspecified Heap	1903
199X	0.0	On Site	285091 210275	Unspecified Heap	1903
200AX	0.0	On Site	284875 210683	Unspecified Heap	1903
201Y	0.0	On Site	285244 210337	Unspecified Heap	1903
202AX	0.0	On Site	284875 210683	Unspecified Heap	1877
203AA	0.0	On Site	285123 210408	Unspecified Heap	1877
204AF	0.0	On Site	285163 210395	Unspecified Heap	1877
205Y	0.0	On Site	285401 210426	Unspecified Heap	1877
206Y	0.0	On Site	285344 210426	Unspecified Heap	1877
207BC	0.0	On Site	283791 210282	Unspecified Heap	1876
208AK	0.0	On Site	284139 210397	Colliery	1901
209AK	0.0	On Site	284333 210428	Unspecified Heap	1901
210AX	0.0	On Site	284881 210673	Unspecified Heap	1900
211Y	0.0	On Site	285214 210333	Unspecified Heap	1900
212X	0.0	On Site	285090 210275	Unspecified Heap	1900
213AC	0.0	On Site	284502 210419	Brick Works	1948
214Y	0.0	On Site	285391 210419	Unspecified Disused Level	1962
215X	0.0	On Site	285100 210240	Unspecified Heap	1962
216Y	0.0	On Site	285410 210388	Unspecified Ground Workings	1962
217X	0.0	On Site	285094 210276	Unspecified Ground Workings	1962
218AF	0.0	On Site	285136 210325	Unspecified Ground Workings	1962
219AA	0.0	On Site	285022 210482	Unspecified Pit	1962
220AJ	0.0	On Site	285211 210426	Unspecified Ground Workings	1962
221AG	0.0	On Site	285345 210264	Unspecified Ground Workings	1962
222AG	0.0	On Site	285388 210245	Unspecified Ground Workings	1962
223AD	0.0	On Site	285108 210612	Refuse Heap	1977
224AE	0.0	On Site	285055 210356	Refuse Heap	1977

ID	Distance (m)	Direction	NGR	Use	Date
225Y	0.0	On Site	285298 210334	Refuse Heap	1977
226BE	0.0	On Site	281976 212255	Refuse Heap	1965
227AR	0.0	On Site	282177 212057	Refuse Heap	1965
228C	0.0	On Site	281905 211873	Unspecified Heap	1965
229AY	0.0	On Site	282949 211962	Unspecified Disused Drift	1965
230AZ	0.0	On Site	284757 210595	Refuse Heap	1965
231AE	0.0	On Site	284883 210328	Refuse Heap	1965
232V	0.0	On Site	281808 211693	Unspecified Disused Levels	1965
233D	0.0	On Site	282083 211958	Unspecified Disused Level	1965
234AM	0.0	On Site	282328 211908	Unspecified Disused Levels	1965
235AM	0.0	On Site	282382 211942	Unspecified Disused Levels	1965
236U	0.0	On Site	282422 211928	Unspecified Disused Levels	1965
237AM	0.0	On Site	282362 211979	Unspecified Disused Levels	1965
238Q	0.0	On Site	282229 211603	Unspecified Heaps	1965
239B	0.0	On Site	281994 211822	Unspecified Heap	1965
240AN	0.0	On Site	282194 211762	Unspecified Heap	1965
241D	0.0	On Site	282109 211904	Unspecified Heap	1965
242D	0.0	On Site	282216 211853	Unspecified Heap	1965
243F	0.0	On Site	282349 211851	Unspecified Heaps	1965
244D	0.0	On Site	282228 211932	Unspecified Heaps	1965
245BA	0.0	On Site	283137 211748	Unspecified Disused Levels	1965
246G	0.0	On Site	283211 211754	Unspecified Disused Levels	1965
247AU	0.0	On Site	282592 211832	Unspecified Heap	1965
248AS	0.0	On Site	282495 211976	Unspecified Heap	1965
249U	0.0	On Site	282495 211912	Unspecified Heaps	1965
250U	0.0	On Site	282456 211838	Unspecified Heap	1965
251AU	0.0	On Site	282500 211800	Unspecified Heaps	1965
252E	0.0	On Site	282445 211719	Unspecified Heap	1965
253A	0.0	On Site	282719 211560	Unspecified Heaps	1965

ID	Distance (m)	Direction	NGR	Use	Date
254L	0.0	On Site	282756 211709	Unspecified Heaps	1965
255BB	0.0	On Site	283206 212004	Unspecified Heap	1965
256BB	0.0	On Site	283227 211910	Unspecified Heap	1965
257G	0.0	On Site	283120 211816	Unspecified Heaps	1965
258AO	0.0	On Site	283368 211820	Unspecified Heap	1965
259AO	0.0	On Site	283248 211781	Unspecified Heap	1965
260Q	0.0	On Site	282160 211527	Unspecified Heaps	1965
261K	0.0	On Site	282558 211527	Unspecified Heap	1965
262BG	0.0	On Site	283390 210568	Unspecified Disused Level	1965
263AL	0.0	On Site	283891 210408	Unspecified Disused Level	1965
264BC	0.0	On Site	283686 210336	Unspecified Disused Level	1965
265BF	0.0	On Site	283506 210324	Unspecified Heaps	1965
266AK	0.0	On Site	284300 210399	Refuse Heap	1965
267AC	0.0	On Site	284455 210388	Refuse Heap	1965
268BD	0.0	On Site	284621 210429	Unspecified Heap	1965
269S	0.0	On Site	282162 211892	Unspecified Heap	1965
270AN	0.0	On Site	282222 211733	Unspecified Ground Workings	1965
271H	0.0	On Site	282001 211668	Unspecified Ground Workings	1965
272H	0.0	On Site	282014 211715	Unspecified Ground Workings	1965
273B	0.0	On Site	281989 211782	Unspecified Pit	1965
274AN	0.0	On Site	282363 211745	Unspecified Ground Workings	1965
275F	0.0	On Site	282231 211813	Unspecified Ground Workings	1965
276S	0.0	On Site	282124 211872	Unspecified Pit	1965
277S	0.0	On Site	282184 211865	Unspecified Pit	1965
278D	0.0	On Site	282233 211836	Unspecified Ground Workings	1965
279S	0.0	On Site	282069 211854	Unspecified Ground Workings	1965
280E	0.0	On Site	282385 211784	Unspecified Ground Workings	1965
281D	0.0	On Site	282126 211828	Unspecified Ground Workings	1965
282AU	0.0	On Site	282647 211855	Unspecified Ground Workings	1965

ID	Distance (m)	Direction	NGR	Use	Date
283E	0.0	On Site	282505 211760	Unspecified Pit	1965
284I	0.0	On Site	282478 211640	Unspecified Pit	1965
285I	0.0	On Site	282474 211658	Unspecified Ground Workings	1965
286I	0.0	On Site	282543 211650	Unspecified Ground Workings	1965
287L	0.0	On Site	282697 211665	Unspecified Ground Workings	1965
288AT	0.0	On Site	282650 211758	Unspecified Ground Workings	1965
289M	0.0	On Site	282890 211659	Unspecified Ground Workings	1965
290AQ	0.0	On Site	282892 211556	Unspecified Ground Workings	1965
291N	0.0	On Site	282885 211495	Unspecified Ground Workings	1965
292M	0.0	On Site	282819 211611	Unspecified Ground Workings	1965
293BB	0.0	On Site	283215 211974	Unspecified Pit	1965
294BW	0.0	On Site	283234 211869	Unspecified Pit	1965
295AO	0.0	On Site	283266 211838	Unspecified Pit	1965
296BH	0.0	On Site	283027 211766	Unspecified Ground Workings	1965
297O	0.0	On Site	281936 211489	Unspecified Ground Workings	1965
298Q	0.0	On Site	282288 211527	Unspecified Ground Workings	1965
299BI	0.0	On Site	283372 210658	Unspecified Ground Workings	1965
300BY	0.0	On Site	284967 210440	Unspecified Ground Workings	1965
301BJ	0.0	On Site	284952 210223	Unspecified Ground Workings	1965
302BD	0.0	On Site	284752 210354	Unspecified Ground Workings	1965
303BM	0.0	On Site	283616 211017	Unspecified Ground Workings	1965
304BE	0.0	On Site	281976 212255	Unspecified Disused Tip	1987
305AY	0.0	On Site	282949 211962	Unspecified Disused Drift	1987
306M	0.0	On Site	282765 211662	Refuse Heap	1987
307BA	0.0	On Site	283263 211727	Unspecified Disused Drift	1987
308BA	0.0	On Site	283214 211752	Unspecified Disused Levels	1987
309BA	0.0	On Site	283161 211737	Unspecified Disused Levels	1987
310	0.0	On Site	283892 211489	Unspecified Disused Workings	1987
311AL	0.0	On Site	283891 210408	Unspecified Disused Level	1987

ID	Distance (m)	Direction	NGR	Use	Date
312BF	0.0	On Site	283506 210324	Unspecified Heaps	1987
313BZ	0.0	On Site	284751 210569	Opencast Workings	1987
314BG	0.0	On Site	283390 210568	Unspecified Disused Level	1987
315EC	0.0	On Site	283683 210434	Unspecified Disused Level	1987
316BB	0.0	On Site	283215 211974	Unspecified Pit	1987
317BH	0.0	On Site	283030 211769	Unspecified Ground Workings	1987
318BI	0.0	On Site	283372 210658	Unspecified Ground Workings	1987
319BJ	0.0	On Site	284952 210223	Unspecified Ground Workings	1987
320AK	0.0	On Site	284297 210396	Refuse Heap	1987
321AE	0.0	On Site	284882 210336	Refuse Heap	1987
322BK	0.0	On Site	284657 210333	Unspecified Ground Workings	1876
323AX	0.0	On Site	284884 210679	Unspecified Heap	1876
324AJ	0.0	On Site	285158 210433	Unspecified Ground Workings	1876
325Y	0.0	On Site	285386 210407	Unspecified Ground Workings	1876
326AW	0.0	On Site	284879 210532	Unspecified Ground Workings	1876
327Z	0.0	On Site	284780 210391	Unspecified Ground Workings	1876
328BL	0.0	On Site	283369 210691	Unspecified Heap	1948
329BI	0.0	On Site	283391 210653	Unspecified Heap	1948
330BN	0.0	On Site	283513 210493	Unspecified Heap	1948
331BX	0.0	On Site	284270 210478	Colliery	1948
332BF	0.0	On Site	283592 210326	Refuse Heap	1948
333AL	0.0	On Site	283836 210441	Unspecified Heap	1948
334AL	0.0	On Site	283883 210399	Unspecified Slant	1948
335AL	0.0	On Site	283927 210433	Refuse Heap	1948
336AL	0.0	On Site	283869 210401	Refuse Heap	1948
337BL	0.0	On Site	283378 210737	Old Coal Level	1948
338BG	0.0	On Site	283343 210584	Unspecified Pit	1948
339AI	0.0	On Site	284270 210412	Unspecified Ground Workings	1948
340AL	0.0	On Site	283757 210351	Unspecified Ground Workings	1948

ID	Distance (m)	Direction	NGR	Use	Date
341BO	0.0	On Site	283889 210844	Unspecified Ground Workings	1948
342BM	0.0	On Site	283636 211006	Unspecified Ground Workings	1948
343BL	0.0	On Site	283425 210758	Coal Level	1903
344	0.0	On Site	282860 211029	Refuse Heap	1903
345AL	0.0	On Site	283739 210367	Unspecified Heap	1903
346AI	0.0	On Site	284323 210418	Unspecified Heap	1903
347BM	0.0	On Site	283631 211010	Unspecified Pit	1903
348BT	0.0	On Site	283271 210143	Old Coal Level	1903
349CD	0.0	On Site	282966 210721	Refuse Heap	1903
350BC	0.0	On Site	283792 210280	Unspecified Heap	1877
351AL	0.0	On Site	283909 210361	Unspecified Heap	1877
352BM	0.0	On Site	283644 210991	Unspecified Heap	1877
353BN	0.0	On Site	283517 210491	Unspecified Heap	1877
354AL	0.0	On Site	283834 210407	Old Coal Pit	1877
355AK	0.0	On Site	284264 210405	Unspecified Ground Workings	1877
356BL	0.0	On Site	283425 210758	Old Coal Level	1877
357BO	0.0	On Site	283900 210826	Unspecified Ground Workings	1877
358CL	0.0	On Site	283604 210195	Unspecified Ground Workings	1877
359BM	0.0	On Site	283628 211012	Unspecified Pit	1877
360BM	0.0	On Site	283651 211006	Unspecified Ground Workings	1877
361BP	0.0	On Site	281855 211393	Unspecified Pit	1877
362AS	0.0	On Site	282552 211933	Unspecified Drift	1948
363W	0.0	On Site	282961 211903	Unspecified Drift	1948
364AS	0.0	On Site	282462 212011	Unspecified Drift	1948
365D	0.0	On Site	282153 211963	Reservoir	1903
366AS	0.0	On Site	282556 211936	Unspecified Drift	1903
367AS	0.0	On Site	282560 211990	Unspecified Drift	1903
368B	0.0	On Site	281977 211811	Unspecified Old Quarry	1877
369	0.0	On Site	283089 212034	Cuttings	1877

ID	Distance (m)	Direction	NGR	Use	Date
370BB	0.0	On Site	283210 211941	Unspecified Old Quarry	1877
371H	0.0	On Site	282000 211690	Unspecified Old Quarry	1877
372P	0.0	On Site	282164 211508	Unspecified Old Quarry	1877
373K	0.0	On Site	282522 211518	Unspecified Old Quarry	1877
374A	0.0	On Site	282719 211557	Unspecified Old Quarry	1877
375A Q	0.0	On Site	282866 211603	Unspecified Old Quarry	1877
376CI	0.0	On Site	281845 211965	Cuttings	1877
377AK	0.0	On Site	284204 210382	Cuttings	1876
378B Q	0.0	On Site	284174 210498	Pond	1876
379O	0.0	On Site	281913 211410	Pond	1901
380BP	0.0	On Site	281938 211367	Pond	1901
381CE	0.0	On Site	283092 211257	Pond	1901
382BS	0.0	On Site	282877 210477	Cuttings	1901
383BR	0.0	On Site	283152 210535	Cuttings	1901
384B Q	0.0	On Site	284175 210503	Pond	1901
385B Q	0.0	On Site	284075 210436	Pond	1901
386BJ	0.0	On Site	284997 210223	Pond	1900
387E	0.0	On Site	282450 211687	Unspecified Old Quarries	1877
388AJ	0.0	On Site	285250 210421	Unspecified Old Quarries	1903
389AJ	0.0	On Site	285263 210493	Unspecified Old Quarries	1900
390AJ	0.0	On Site	285246 210429	Unspecified Old Quarries	1900
391BK	0.0	On Site	284644 210266	Unspecified Old Quarries	1900
392A A	0.0	On Site	285108 210474	Unspecified Old Quarries	1900
393BR	0.0	On Site	283131 210527	Cuttings	1965
394BS	0.0	On Site	282876 210472	Cuttings	1965
395BP	0.0	On Site	281927 211372	Pond	1965
396O	0.0	On Site	282006 211485	Pond	1965
397P	0.0	On Site	282162 211485	Ponds	1965
398J	0.0	On Site	282336 211496	Pond	1965

ID	Distance (m)	Direction	NGR	Use	Date
399K	0.0	On Site	282563 211500	Pond	1965
400K	0.0	On Site	282473 211507	Pond	1965
401AV	0.0	On Site	282401 212053	Pond	1987
402EY	0.0	On Site	282787 211724	Pond	1987
403BP	0.0	On Site	281929 211383	Ponds	1987
404O	0.0	On Site	282016 211506	Pond	1987
405O	0.0	On Site	281966 211460	Pond	1987
406K	0.0	On Site	282470 211515	Pond	1987
407	0.0	On Site	283404 211478	Pond	1987
408BQ	0.0	On Site	284225 210560	Ponds	1987
409BR	0.0	On Site	283131 210527	Cuttings	1987
410BS	0.0	On Site	282876 210472	Cuttings	1987
411BR	0.0	On Site	283142 210535	Cuttings	1948
412BP	0.0	On Site	281933 211379	Ponds	1948
413BS	0.0	On Site	282878 210477	Cuttings	1948
414BR	0.0	On Site	283150 210535	Cuttings	1903
415BS	0.0	On Site	282878 210477	Cuttings	1903
416BP	0.0	On Site	281933 211379	Ponds	1903
417BQ	0.0	On Site	284173 210508	Pond	1903
418EZ	0.0	On Site	282875 211179	Unspecified Old Quarries	1877
419BQ	0.0	On Site	284173 210508	Pond	1877
420FA	0.0	On Site	281671 210910	Unspecified Old Quarry	1877
421BP	0.0	On Site	281933 211379	Ponds	1877
422FB	0.0	On Site	284309 210708	Cuttings	1877
423BS	0.0	On Site	282950 210492	Cuttings	1877
424CP	0.0	On Site	284028 210598	Cuttings	1877
425BT	0.0	On Site	283184 210109	Cuttings	1877
426AR	0.0	On Site	282085 212014	Colliery	1921
427AR	0.0	On Site	282117 212023	Unspecified Old Level	1921

ID	Distance (m)	Direction	NGR	Use	Date
428U	0.0	On Site	282579 211834	Unspecified Old Level	1921
429A M	0.0	On Site	282383 211935	Unspecified Old Levels	1921
430A M	0.0	On Site	282266 211905	Unspecified Old Levels	1921
431A M	0.0	On Site	282329 211893	Unspecified Old Levels	1921
432T	0.0	On Site	282224 211925	Unspecified Old Levels	1921
433A M	0.0	On Site	282423 211926	Unspecified Old Levels	1921
434AS	0.0	On Site	282519 211968	Colliery	1921
435R	0.0	On Site	281642 211833	Unspecified Ground Workings	1921
436CA	0.0	On Site	282097 212159	Unspecified Heap	1921
437A V	0.0	On Site	282300 212068	Unspecified Heap	1921
438S	0.0	On Site	282074 211882	Unspecified Heap	1921
439B	0.0	On Site	282068 211847	Unspecified Ground Workings	1921
440BV	0.0	On Site	282144 211824	Unspecified Heaps	1921
441F	0.0	On Site	282318 211795	Unspecified Pit	1921
442A U	0.0	On Site	282489 211898	Unspecified Ground Workings	1921
443A M	0.0	On Site	282363 211972	Unspecified Heap	1921
444U	0.0	On Site	282494 211970	Unspecified Heap	1921
445AS	0.0	On Site	282535 211998	Refuse Heap	1921
446A U	0.0	On Site	282593 211827	Unspecified Heap	1921
447AT	0.0	On Site	282791 211808	Unspecified Ground Workings	1921
448B U	0.0	On Site	282631 211973	Unspecified Heap	1921
449A U	0.0	On Site	282642 211889	Refuse Heap	1921
450BA	0.0	On Site	283181 211718	Old Coal Levels	1921
451BA	0.0	On Site	283152 211736	Old Coal Levels	1921
452BA	0.0	On Site	283209 211751	Old Coal Levels	1921
453B H	0.0	On Site	283122 211751	Old Coal Levels	1921
454B H	0.0	On Site	283121 211809	Old Coal Levels	1921
455O	0.0	On Site	281972 211483	Unspecified Heap	1921
456BP	0.0	On Site	281844 211449	Unspecified Heap	1921

ID	Distance (m)	Direction	NGR	Use	Date
457AP	0.0	On Site	281705 211788	Unspecified Pit	1921
458AP	0.0	On Site	281704 211732	Old Coal Levels	1921
459AN	0.0	On Site	282124 211709	Unspecified Ground Workings	1921
460K	0.0	On Site	282557 211514	Unspecified Ground Workings	1921
461A	0.0	On Site	282717 211553	Unspecified Ground Workings	1921
462S	0.0	On Site	282144 211888	Unspecified Ground Workings	1921
463BV	0.0	On Site	282117 211790	Unspecified Ground Workings	1921
464F	0.0	On Site	282257 211823	Unspecified Ground Workings	1921
465AV	0.0	On Site	282476 212060	Unspecified Heap	1921
466AY	0.0	On Site	282937 211957	Refuse Heap	1921
467BA	0.0	On Site	283342 211777	Colliery	1921
468BA	0.0	On Site	283232 211771	Refuse Heap	1921
469BW	0.0	On Site	283213 211938	Unspecified Ground Workings	1921
470V	0.0	On Site	281853 211691	Old Coal Levels	1921
471Q	0.0	On Site	282232 211600	Unspecified Ground Workings	1921
472P	0.0	On Site	282175 211509	Unspecified Ground Workings	1921
473E	0.0	On Site	282491 211696	Unspecified Ground Workings	1921
474A	0.0	On Site	282824 211610	Unspecified Ground Workings	1921
475B	0.0	On Site	282014 211795	Unspecified Ground Workings	1921
476B	0.0	On Site	281889 211852	Unspecified Ground Workings	1921
477S	0.0	On Site	282078 211936	Unspecified Old Level	1921
478BL	0.0	On Site	283379 210738	Old Coal Level	1921
479BI	0.0	On Site	283391 210653	Unspecified Heap	1921
480BG	0.0	On Site	283344 210586	Unspecified Pit	1921
481BM	0.0	On Site	283636 211006	Unspecified Ground Workings	1921
482BN	0.0	On Site	283513 210492	Unspecified Heap	1921
483BF	0.0	On Site	283632 210336	Colliery	1921
484BF	0.0	On Site	283546 210310	Refuse Heap	1921
485BX	0.0	On Site	284122 210432	Colliery	1921

ID	Distance (m)	Direction	NGR	Use	Date
486AL	0.0	On Site	283883 210398	Unspecified Slant	1921
487AL	0.0	On Site	283862 210401	Refuse Heap	1921
488AL	0.0	On Site	283836 210441	Unspecified Heap	1921
489AI	0.0	On Site	284271 210410	Unspecified Ground Workings	1921
490BO	0.0	On Site	283923 210803	Unspecified Pits	1921
491BI	0.0	On Site	283370 210691	Unspecified Heap	1921
492AX	0.0	On Site	284883 210674	Unspecified Heaps	1921
493AA	0.0	On Site	285145 210538	Old Coal Level	1921
494AA	0.0	On Site	285109 210480	Unspecified Pit	1921
495AD	0.0	On Site	285132 210592	Unspecified Ground Workings	1921
496AJ	0.0	On Site	285265 210419	Unspecified Ground Workings	1921
497X	0.0	On Site	285089 210262	Unspecified Ground Workings	1921
498BK	0.0	On Site	284576 210337	Unspecified Ground Workings	1921
499Z	0.0	On Site	284774 210395	Unspecified Pit	1921
500BY	0.0	On Site	284883 210394	Unspecified Ground Workings	1921
501AF	0.0	On Site	285033 210385	Unspecified Ground Workings	1921
502AG	0.0	On Site	285370 210231	Old Coal Pit	1921
503Y	0.0	On Site	285345 210314	Old Coal Level	1921
504AG	0.0	On Site	285335 210269	Unspecified Ground Workings	1921
505Y	0.0	On Site	285404 210409	Unspecified Ground Workings	1921
506BZ	0.0	On Site	284812 210532	Unspecified Ground Workings	1921
507AR	0.0	On Site	282085 212014	Colliery	1921
508AR	0.0	On Site	282117 212023	Unspecified Old Level	1921
509AU	0.0	On Site	282579 211834	Unspecified Old Level	1921
510AS	0.0	On Site	282537 211986	Unspecified Drift	1921
511U	0.0	On Site	282526 211924	Unspecified Drift	1921
512AM	0.0	On Site	282383 211935	Unspecified Old Levels	1921
513T	0.0	On Site	282266 211905	Unspecified Old Levels	1921
514AM	0.0	On Site	282329 211893	Unspecified Old Levels	1921

ID	Distance (m)	Direction	NGR	Use	Date
515T	0.0	On Site	282224 211925	Unspecified Old Levels	1921
516U	0.0	On Site	282423 211926	Unspecified Old Levels	1921
517AS	0.0	On Site	282519 211968	Colliery	1921
518W	0.0	On Site	282962 211900	Unspecified Drift	1921
519AV	0.0	On Site	282457 212013	Unspecified Drift	1921
520R	0.0	On Site	281642 211833	Unspecified Ground Workings	1921
521CA	0.0	On Site	282097 212159	Unspecified Heap	1921
522AV	0.0	On Site	282300 212068	Unspecified Heap	1921
523S	0.0	On Site	282074 211882	Unspecified Heap	1921
524B	0.0	On Site	282068 211847	Unspecified Ground Workings	1921
525BV	0.0	On Site	282144 211824	Unspecified Heaps	1921
526F	0.0	On Site	282318 211795	Unspecified Pit	1921
527AU	0.0	On Site	282489 211898	Unspecified Ground Workings	1921
528AM	0.0	On Site	282363 211972	Unspecified Heap	1921
529U	0.0	On Site	282494 211970	Unspecified Heap	1921
530AS	0.0	On Site	282535 211998	Refuse Heap	1921
531AU	0.0	On Site	282593 211827	Unspecified Heap	1921
532AT	0.0	On Site	282791 211808	Unspecified Ground Workings	1921
533AS	0.0	On Site	282631 211973	Unspecified Heap	1921
534AU	0.0	On Site	282642 211889	Refuse Heap	1921
535BA	0.0	On Site	283181 211718	Old Coal Levels	1921
536BA	0.0	On Site	283152 211736	Old Coal Levels	1921
537BA	0.0	On Site	283209 211751	Old Coal Levels	1921
538BH	0.0	On Site	283122 211751	Old Coal Levels	1921
539BH	0.0	On Site	283121 211809	Old Coal Levels	1921
540O	0.0	On Site	281972 211483	Unspecified Heap	1921
541BP	0.0	On Site	281844 211449	Unspecified Heap	1921
542AP	0.0	On Site	281705 211788	Unspecified Pit	1921
543AP	0.0	On Site	281704 211732	Old Coal Levels	1921

ID	Distance (m)	Direction	NGR	Use	Date
544AN	0.0	On Site	282124 211709	Unspecified Ground Workings	1921
545K	0.0	On Site	282557 211514	Unspecified Ground Workings	1921
546A	0.0	On Site	282717 211553	Unspecified Ground Workings	1921
547S	0.0	On Site	282144 211888	Unspecified Ground Workings	1921
548BV	0.0	On Site	282117 211790	Unspecified Ground Workings	1921
549F	0.0	On Site	282257 211823	Unspecified Ground Workings	1921
550AV	0.0	On Site	282476 212060	Unspecified Heap	1921
551AY	0.0	On Site	282937 211957	Refuse Heap	1921
552BA	0.0	On Site	283342 211777	Colliery	1921
553BA	0.0	On Site	283232 211771	Refuse Heap	1921
554BW	0.0	On Site	283213 211938	Unspecified Ground Workings	1921
555V	0.0	On Site	281853 211691	Old Coal Levels	1921
556J	0.0	On Site	282339 211498	Pond	1921
557Q	0.0	On Site	282232 211600	Unspecified Ground Workings	1921
558P	0.0	On Site	282175 211509	Unspecified Ground Workings	1921
559E	0.0	On Site	282491 211696	Unspecified Ground Workings	1921
560A	0.0	On Site	282824 211610	Unspecified Ground Workings	1921
561B	0.0	On Site	282014 211795	Unspecified Ground Workings	1921
562B	0.0	On Site	281889 211852	Unspecified Ground Workings	1921
563S	0.0	On Site	282078 211936	Unspecified Old Level	1921
564BP	0.0	On Site	281931 211381	Ponds	1921
565BL	0.0	On Site	283379 210738	Old Coal Level	1921
566BI	0.0	On Site	283391 210653	Unspecified Heap	1921
567BG	0.0	On Site	283344 210586	Unspecified Pit	1921
568BM	0.0	On Site	283636 211006	Unspecified Ground Workings	1921
569BS	0.0	On Site	282882 210477	Cuttings	1921
570BR	0.0	On Site	283141 210536	Cuttings	1921
571BN	0.0	On Site	283513 210492	Unspecified Heap	1921
572BF	0.0	On Site	283632 210336	Colliery	1921

ID	Distance (m)	Direction	NGR	Use	Date
573BF	0.0	On Site	283546 210310	Refuse Heap	1921
574BX	0.0	On Site	284122 210432	Colliery	1921
575AL	0.0	On Site	283883 210398	Unspecified Slant	1921
576AL	0.0	On Site	283862 210401	Refuse Heap	1921
577AL	0.0	On Site	283836 210441	Unspecified Heap	1921
578AI	0.0	On Site	284271 210410	Unspecified Ground Workings	1921
579BO	0.0	On Site	283923 210803	Unspecified Pits	1921
580BI	0.0	On Site	283370 210691	Unspecified Heap	1921
581AX	0.0	On Site	284883 210674	Unspecified Heaps	1921
582AA	0.0	On Site	285145 210538	Old Coal Level	1921
583AA	0.0	On Site	285089 210504	Cuttings	1921
584AA	0.0	On Site	285109 210480	Unspecified Pit	1921
585AD	0.0	On Site	285132 210592	Unspecified Ground Workings	1921
586AJ	0.0	On Site	285265 210419	Unspecified Ground Workings	1921
587AC	0.0	On Site	284480 210370	Cuttings	1921
588X	0.0	On Site	285089 210262	Unspecified Ground Workings	1921
589BK	0.0	On Site	284576 210337	Unspecified Ground Workings	1921
590Z	0.0	On Site	284774 210395	Unspecified Pit	1921
591BY	0.0	On Site	284883 210394	Unspecified Ground Workings	1921
592AF	0.0	On Site	285033 210385	Unspecified Ground Workings	1921
593AG	0.0	On Site	285370 210231	Old Coal Pit	1921
594Y	0.0	On Site	285345 210314	Old Coal Level	1921
595AG	0.0	On Site	285335 210269	Unspecified Ground Workings	1921
596Y	0.0	On Site	285404 210409	Unspecified Ground Workings	1921
597BZ	0.0	On Site	284812 210532	Unspecified Ground Workings	1921
598CB	0.0	On Site	283859 210506	Disused Colliery	1948
599BX	0.0	On Site	284281 210351	Colliery	1903
600CB	0.0	On Site	283859 210506	Colliery	1903
601F	0.0	On Site	282351 211852	Unspecified Ground Workings	1948

ID	Distance (m)	Direction	NGR	Use	Date
602S	0.0	On Site	282126 211860	Unspecified Pit	1948
603T	0.0	On Site	282227 211879	Unspecified Old Levels	1948
604T	0.0	On Site	282272 211884	Unspecified Old Levels	1948
605BB	0.0	On Site	283210 211941	Unspecified Heaps	1948
606V	0.0	On Site	281855 211694	Old Coal Levels	1948
607CC	0.0	On Site	283442 212018	Colliery	1948
608S	0.0	On Site	282083 211941	Unspecified Old Level	1903
609AN	0.0	On Site	282148 211665	Unspecified Level	1903
610C	0.0	On Site	281894 211892	Unspecified Heaps	1877
611BV	0.0	On Site	282125 211821	Unspecified Heaps	1877
612AM	0.0	On Site	282385 211983	Unspecified Old Drift	1877
613Q	0.0	On Site	282206 211610	Coal Level	1877
614AS	0.0	On Site	282502 212012	Coal Drift	1877
615BX	0.0	On Site	284192 210389	Unspecified Drift	1948
616E	0.0	On Site	282402 211814	Unspecified Old Quarry	1877
617J	0.0	On Site	282269 211561	Unspecified Old Quarry	1877
618CC	0.0	On Site	283479 211984	Unspecified Drift	1948
619BP	0.0	On Site	281930 211360	Pond	1921
620BS	0.0	On Site	282886 210468	Cuttings	1921
621BR	0.0	On Site	283146 210527	Cuttings	1921
622BX	0.0	On Site	283992 210382	Colliery	1921
623BC	0.0	On Site	283731 210353	Colliery	1921
624BN	0.0	On Site	283514 210485	Unspecified Heap	1921
625BL	0.0	On Site	283379 210733	Old Coal Level	1921
626BF	0.0	On Site	283541 210292	Refuse Heap	1921
627BQ	0.0	On Site	284269 210457	Unspecified Ground Workings	1921
628AK	0.0	On Site	284322 210383	Unspecified Ground Workings	1921
629BM	0.0	On Site	283629 211006	Unspecified Ground Workings	1921
630BO	0.0	On Site	283908 210815	Unspecified Ground Workings	1921

ID	Distance (m)	Direction	NGR	Use	Date
631BI	0.0	On Site	283392 210646	Unspecified Heap	1921
632BI	0.0	On Site	283371 210685	Unspecified Heap	1921
633AX	0.0	On Site	284883 210679	Unspecified Heap	1921
634AD	0.0	On Site	285198 210596	Unspecified Ground Workings	1921
635AI	0.0	On Site	284402 210511	Unspecified Ground Workings	1921
636BY	0.0	On Site	284853 210405	Unspecified Ground Workings	1921
637X	0.0	On Site	285091 210271	Unspecified Ground Workings	1921
638AF	0.0	On Site	285036 210393	Unspecified Ground Workings	1921
639AA	0.0	On Site	285109 210486	Unspecified Pit	1921
640AG	0.0	On Site	285343 210284	Unspecified Ground Workings	1921
641AG	0.0	On Site	285404 210293	Old Coal Level	1921
642Y	0.0	On Site	285405 210414	Unspecified Ground Workings	1921
643AC	0.0	On Site	284683 210334	Unspecified Heap	1921
644AI	0.0	On Site	284386 210429	Unspecified Ground Workings	1921
645Z	0.0	On Site	284751 210353	Unspecified Ground Workings	1921
646AC	0.0	On Site	284578 210370	Unspecified Ground Workings	1921
647AC	0.0	On Site	284549 210396	Cuttings	1921
648Z	0.0	On Site	284777 210405	Unspecified Pit	1921
649BZ	0.0	On Site	284818 210540	Unspecified Ground Workings	1921
650AB	0.0	On Site	285145 210542	Unspecified Pit	1921
651Y	0.0	On Site	285266 210426	Unspecified Ground Workings	1921
652BK	0.0	On Site	284490 210230	Unspecified Ground Workings	1921
653C	0.0	On Site	281908 211861	Unspecified Ground Workings	1921
654AV	0.0	On Site	282294 212072	Unspecified Heap	1921
655AS	0.0	On Site	282459 212013	Unspecified Drift	1921
656U	0.0	On Site	282531 211883	Unspecified Old Level	1921
657U	0.0	On Site	282552 211938	Unspecified Drift	1921
658BU	0.0	On Site	282635 211900	Refuse Heap	1921
659U	0.0	On Site	282591 211833	Unspecified Heap	1921

ID	Distance (m)	Direction	NGR	Use	Date
660AS	0.0	On Site	282603 211983	Unspecified Ground Workings	1921
661W	0.0	On Site	282960 211904	Unspecified Drift	1921
662AY	0.0	On Site	282936 211964	Refuse Heap	1921
663G	0.0	On Site	283166 211720	Old Coal Levels	1921
664BH	0.0	On Site	283120 211758	Old Coal Levels	1921
665G	0.0	On Site	283150 211743	Unspecified Heap	1921
666G	0.0	On Site	283209 211758	Unspecified Ground Workings	1921
667BB	0.0	On Site	283217 211942	Unspecified Ground Workings	1921
668BH	0.0	On Site	283141 211806	Unspecified Ground Workings	1921
669AO	0.0	On Site	283288 211753	Colliery	1921
670AR	0.0	On Site	282194 212051	Colliery	1921
671AM	0.0	On Site	282385 211935	Unspecified Old Levels	1921
672AM	0.0	On Site	282349 211978	Unspecified Ground Workings	1921
673AM	0.0	On Site	282507 211936	Unspecified Ground Workings	1921
674AS	0.0	On Site	282508 212002	Refuse Heap	1921
675AM	0.0	On Site	282376 211941	Unspecified Ground Workings	1921
676AM	0.0	On Site	282326 211901	Unspecified Old Levels	1921
677U	0.0	On Site	282559 211969	Colliery	1921
678AS	0.0	On Site	282471 212064	Unspecified Heap	1921
679S	0.0	On Site	282110 211908	Unspecified Old Level	1921
680S	0.0	On Site	282168 211896	Unspecified Ground Workings	1921
681D	0.0	On Site	282124 211827	Unspecified Ground Workings	1921
682F	0.0	On Site	282228 211841	Unspecified Ground Workings	1921
683E	0.0	On Site	282456 211821	Unspecified Heaps	1921
684T	0.0	On Site	282262 211909	Unspecified Ground Workings	1921
685AQ	0.0	On Site	282863 211614	Unspecified Ground Workings	1921
686A	0.0	On Site	282714 211562	Unspecified Ground Workings	1921
687K	0.0	On Site	282552 211521	Unspecified Ground Workings	1921
688V	0.0	On Site	281844 211667	Old Coal Levels	1921

ID	Distance (m)	Direction	NGR	Use	Date
689V	0.0	On Site	281870 211688	Old Coal Levels	1921
690B	0.0	On Site	282010 211801	Unspecified Ground Workings	1921
691V	0.0	On Site	281803 211703	Unspecified Ground Workings	1921
692AP	0.0	On Site	281700 211735	Unspecified Heap	1921
693O	0.0	On Site	281967 211490	Unspecified Heap	1921
694P	0.0	On Site	282171 211515	Unspecified Ground Workings	1921
695J	0.0	On Site	282270 211572	Unspecified Ground Workings	1921
696E	0.0	On Site	282516 211689	Unspecified Ground Workings	1921
697F	0.0	On Site	282314 211800	Unspecified Pit	1921
698I	0.0	On Site	282475 211644	Unspecified Pit	1921
699S	0.0	On Site	282069 211889	Unspecified Heap	1921
700G	0.0	On Site	283181 211728	Unspecified Heap	1921
701BL	0.0	On Site	283383 210731	Old Coal Level	1921
702BS	0.0	On Site	282886 210471	Cuttings	1921
703BR	0.0	On Site	283146 210529	Cuttings	1921
704CB	0.0	On Site	283844 210432	Unspecified Heap	1921
705BN	0.0	On Site	283517 210483	Unspecified Heap	1921
706BF	0.0	On Site	283476 210302	Refuse Heap	1921
707BF	0.0	On Site	283637 210330	Colliery	1921
708BM	0.0	On Site	283636 210984	Unspecified Ground Workings	1921
709BP	0.0	On Site	281929 211371	Pond	1921
710CD	0.0	On Site	282960 210712	Refuse Heaps	1921
711AK	0.0	On Site	284328 210374	Unspecified Ground Workings	1921
712BQ	0.0	On Site	284276 210451	Unspecified Ground Workings	1921
713BX	0.0	On Site	284230 210438	Colliery	1921
714W	0.0	On Site	282961 211898	Unspecified Drift	1914
715B	0.0	On Site	281994 211794	Unspecified Ground Workings	1914
716S	0.0	On Site	282071 211867	Unspecified Ground Workings	1914
717O	0.0	On Site	281971 211482	Unspecified Heap	1914

ID	Distance (m)	Direction	NGR	Use	Date
718K	0.0	On Site	282554 211513	Unspecified Ground Workings	1914
719BB	0.0	On Site	283203 211938	Unspecified Ground Workings	1914
720BH	0.0	On Site	283143 211810	Unspecified Ground Workings	1914
721G	0.0	On Site	283209 211751	Unspecified Heap	1914
722E	0.0	On Site	282516 211683	Unspecified Ground Workings	1914
723AU	0.0	On Site	282594 211827	Unspecified Heap	1914
724E	0.0	On Site	282500 211795	Unspecified Ground Workings	1914
725F	0.0	On Site	282318 211794	Unspecified Pit	1914
726U	0.0	On Site	282459 211836	Unspecified Heap	1914
727F	0.0	On Site	282245 211835	Unspecified Ground Workings	1914
728AP	0.0	On Site	281705 211730	Unspecified Heap	1914
729Q	0.0	On Site	282208 211599	Unspecified Ground Workings	1914
730P	0.0	On Site	282175 211508	Unspecified Ground Workings	1914
731BV	0.0	On Site	282126 211818	Unspecified Ground Workings	1914
732C	0.0	On Site	281911 211854	Unspecified Ground Workings	1914
733AS	0.0	On Site	282517 211967	Colliery	1914
734AS	0.0	On Site	282475 212060	Unspecified Heap	1914
735AV	0.0	On Site	282299 212067	Unspecified Heap	1914
736U	0.0	On Site	282553 211931	Unspecified Drift	1914
737AS	0.0	On Site	282457 212012	Unspecified Drift	1914
738AM	0.0	On Site	282480 211970	Unspecified Ground Workings	1914
739AM	0.0	On Site	282383 211935	Unspecified Old Level	1914
740AM	0.0	On Site	282330 211891	Unspecified Old Level	1914
741AM	0.0	On Site	282423 211924	Unspecified Old Level	1914
742AR	0.0	On Site	282161 212047	Colliery	1914
743G	0.0	On Site	283205 211719	Colliery	1914
744V	0.0	On Site	281842 211690	Old Coal Levels	1914
745V	0.0	On Site	281897 211696	Unspecified Ground Workings	1914
746AM	0.0	On Site	282490 211900	Unspecified Ground Workings	1914

ID	Distance (m)	Direction	NGR	Use	Date
747U	0.0	On Site	282533 211879	Unspecified Old Level	1914
748A	0.0	On Site	282885 211604	Unspecified Ground Workings	1914
749A	0.0	On Site	282717 211555	Unspecified Ground Workings	1914
750B H	0.0	On Site	283121 211751	Old Coal Levels	1914
751G	0.0	On Site	283151 211736	Old Coal Levels	1914
752G	0.0	On Site	283166 211713	Old Coal Levels	1914
753A M	0.0	On Site	282367 211973	Unspecified Heaps	1914
754S	0.0	On Site	282123 211890	Unspecified Ground Workings	1914
755S	0.0	On Site	282113 211903	Unspecified Old Level	1914
756BY	0.0	On Site	284889 210385	Unspecified Ground Workings	1921
757Z	0.0	On Site	284778 210396	Unspecified Pit	1921
758A A	0.0	On Site	285147 210538	Old Coal Level	1921
759AF	0.0	On Site	285039 210384	Unspecified Ground Workings	1921
760A A	0.0	On Site	285112 210481	Unspecified Pit	1921
761Y	0.0	On Site	285267 210420	Unspecified Ground Workings	1921
762A X	0.0	On Site	284885 210672	Unspecified Heap	1921
763AB	0.0	On Site	285226 210521	Unspecified Ground Workings	1921
764Y	0.0	On Site	285406 210407	Unspecified Ground Workings	1921
765X	0.0	On Site	285092 210264	Unspecified Ground Workings	1921
766A G	0.0	On Site	285404 210284	Old Coal Level	1921
767A G	0.0	On Site	285370 210232	Old Coal Pit	1921
768A G	0.0	On Site	285345 210275	Unspecified Ground Workings	1921
769A A	0.0	On Site	285072 210502	Cuttings	1921
770AC	0.0	On Site	284657 210336	Unspecified Ground Workings	1921
771C D	0.0	On Site	282958 210718	Refuse Heap	1914
772B N	0.0	On Site	283514 210491	Unspecified Heap	1914
773CF	0.0	On Site	283059 210391	Unspecified Ground Workings	1914
774CE	0.0	On Site	283092 211261	Pond	1914
775B M	0.0	On Site	283623 211007	Unspecified Ground Workings	1914

ID	Distance (m)	Direction	NGR	Use	Date
776BO	0.0	On Site	283912 210815	Unspecified Ground Workings	1914
777BF	0.0	On Site	283493 210312	Refuse Heap	1914
778CG	0.0	On Site	283659 210352	Refuse Heap	1914
779AK	0.0	On Site	284324 210387	Unspecified Ground Workings	1914
780BQ	0.0	On Site	284271 210464	Unspecified Ground Workings	1914
781AI	0.0	On Site	284269 210482	Colliery	1914
782BC	0.0	On Site	283733 210348	Colliery	1914
783BP	0.0	On Site	281931 211374	Pond	1914
784BS	0.0	On Site	282883 210476	Cuttings	1914
785BR	0.0	On Site	283142 210535	Cuttings	1914
786CD	0.0	On Site	282958 210718	Refuse Heap	1914
787BN	0.0	On Site	283514 210491	Unspecified Heap	1914
788CF	0.0	On Site	283059 210391	Unspecified Ground Workings	1914
789CE	0.0	On Site	283092 211261	Pond	1914
790BM	0.0	On Site	283623 211007	Unspecified Ground Workings	1914
791BO	0.0	On Site	283912 210815	Unspecified Ground Workings	1914
792CG	0.0	On Site	283493 210312	Refuse Heap	1914
793CG	0.0	On Site	283659 210352	Refuse Heap	1914
794AK	0.0	On Site	284324 210387	Unspecified Ground Workings	1914
795BQ	0.0	On Site	284271 210464	Unspecified Ground Workings	1914
796AI	0.0	On Site	284269 210482	Colliery	1914
797BC	0.0	On Site	283733 210348	Colliery	1914
798BP	0.0	On Site	281931 211374	Pond	1914
799BS	0.0	On Site	282883 210476	Cuttings	1914
800BR	0.0	On Site	283142 210535	Cuttings	1914
801CF	2.0	S	283064 210431	Unspecified Pit	1921
802CF	2.0	S	283064 210431	Unspecified Pit	1921
803AG	2.0	S	285379 210212	Unspecified Ground Workings	1877
804CJ	2.0	N	283827 210573	Cuttings	1877

ID	Distance (m)	Direction	NGR	Use	Date
805AK	3.0	W	284189 210357	Unspecified Drift	1921
806CH	3.0	W	284344 210331	Unspecified Heap	1877
807BX	3.0	SE	284007 210304	Unspecified Disused Tip	1987
808CC	3.0	N	283351 212018	Colliery	1921
809BO	3.0	SE	283915 210805	Unspecified Ground Workings	1921
810CK	3.0	NE	285081 210803	Unspecified Old Quarry	1900
811AG	4.0	S	285478 210212	Cuttings	1962
812AG	4.0	S	285370 210223	Old Coal Level	1903
813CH	5.0	W	284183 210367	Unspecified Drift	1914
814CH	5.0	W	284183 210367	Unspecified Drift	1914
815AG	5.0	S	285368 210223	Old Coal Pit	1900
816CC	5.0	N	283442 211991	Unspecified Disused Drift	1987
817AC	5.0	S	284600 210309	Unspecified Heap	1948
818BX	5.0	SE	284003 210302	Unspecified Ground Workings	1921
819BX	5.0	SE	284003 210302	Unspecified Ground Workings	1921
820CH	5.0	W	284182 210368	Unspecified Drift	1921
821AH	6.0	S	285424 210190	Old Coal Level	1900
822CI	7.0	NW	281890 212030	Old Coal Level	1903
823CI	7.0	NW	281890 212030	Old Coal Level	1877
824BX	8.0	SE	283973 210301	Refuse Heap	1948
825CJ	8.0	N	283920 210548	Unspecified Heap	1921
826CC	8.0	N	283486 212017	Colliery	1921
827CC	8.0	N	283486 212017	Colliery	1921
828CB	8.0	N	283807 210521	Unspecified Ground Workings	1921
829CK	9.0	NE	285084 210808	Unspecified Old Quarry	1921
830BT	9.0	SE	283295 210108	Unspecified Ground Workings	1876
831CC	9.0	N	283475 212016	Colliery	1914
832CL	9.0	S	283648 210226	Old Coal Level	1948
833CL	9.0	S	283648 210226	Old Coal Level	1903

ID	Distance (m)	Direction	NGR	Use	Date
834CK	9.0	NE	285085 210807	Unspecified Quarry	1962
835CK	10.0	NE	285081 210811	Unspecified Old Quarry	1921
836BT	10.0	SE	283424 210059	Old Coal Level	1901
837CK	10.0	NE	285082 210808	Unspecified Old Quarry	1948
838CO	11.0	S	285507 210181	Unspecified Ground Workings	1877
839BX	11.0	SE	283915 210305	Refuse Heap	1914
840BX	11.0	SE	283915 210305	Refuse Heap	1914
841CC	11.0	N	283448 211998	Unspecified Drift	1914
842CM	12.0	NE	284095 211603	Cuttings	1903
843CM	12.0	NE	284095 211603	Cuttings	1877
844CC	12.0	N	283415 212028	Refuse Heap	1965
845CC	12.0	N	283449 211998	Drift	1921
846CC	12.0	N	283449 211998	Drift	1921
847CN	13.0	S	284773 210226	Unspecified Pit	1987
848CN	14.0	S	284709 210194	Unspecified Heaps	1965
849CN	14.0	S	284789 210210	Unspecified Ground Workings	1948
850CY	14.0	SE	283910 210296	Refuse Heaps	1921
851BX	15.0	SE	283973 210294	Refuse Heap	1965
852CJ	15.0	N	283798 210530	Unspecified Heaps	1877
853CL	15.0	S	283653 210221	Old Coal Level	1921
854CC	16.0	N	283449 212002	Unspecified Drift	1921
855CJ	17.0	N	283800 210530	Unspecified Heap	1948
856CS	17.0	S	284617 210148	Unspecified Disused Tip	1987
857CO	17.0	S	285349 210191	Cuttings	1921
858CH	17.0	S	284380 210294	Unspecified Heap	1921
859CT	18.0	S	284420 210297	Unspecified Heap	1903
860CB	19.0	N	283802 210532	Unspecified Ground Workings	1921
861CB	19.0	N	283802 210532	Unspecified Ground Workings	1921
862CN	19.0	S	284889 210188	Unspecified Ground Workings	1921

ID	Distance (m)	Direction	NGR	Use	Date
863CB	19.0	N	283802 210531	Unspecified Ground Workings	1914
864CB	19.0	N	283802 210531	Unspecified Ground Workings	1914
865CQ	19.0	NW	281898 212034	Unspecified Ground Workings	1914
866CO	19.0	S	285428 210186	Pond	1876
867CN	19.0	S	284801 210191	Unspecified Ground Workings	1903
868BC	20.0	S	283741 210237	Old Coal Level	1901
869CP	20.0	N	283912 210558	Unspecified Old Level	1948
870CO	20.0	S	285428 210187	Old Coal Pit	1921
871CP	21.0	N	283915 210559	Unspecified Pit	1914
872CP	21.0	N	283915 210559	Unspecified Pit	1914
873AB	21.0	NE	285372 210515	Pond	1948
874AH	21.0	S	285418 210185	Unspecified Pit	1877
875AB	21.0	NE	285371 210516	Pond	1921
876BX	22.0	S	284040 210301	Unspecified Ground Workings	1876
877BC	22.0	S	283742 210238	Unspecified Pit	1948
878BC	22.0	S	283742 210238	Unspecified Pit	1903
879CP	22.0	N	283913 210559	Unspecified Heap	1921
880CP	22.0	N	283913 210559	Unspecified Heap	1921
881BX	22.0	S	284071 210328	Unspecified Ground Workings	1877
882BC	22.0	SE	283830 210258	Refuse Heap	1921
883BC	22.0	SE	283830 210258	Refuse Heap	1921
884BC	22.0	S	283743 210238	Old Coal Level	1921
885BC	22.0	S	283743 210238	Old Coal Level	1921
886BK	24.0	S	284480 210216	Unspecified Ground Workings	1948
887CQ	25.0	NW	281896 212039	Unspecified Ground Workings	1921
888CQ	25.0	NW	281900 212038	Unspecified Ground Workings	1921
889CQ	25.0	NW	281900 212038	Unspecified Ground Workings	1921
890BC	25.0	SE	283829 210255	Refuse Heap	1914
891BC	25.0	SE	283829 210255	Refuse Heap	1914

ID	Distance (m)	Direction	NGR	Use	Date
892CO	25.0	S	285458 210169	Ponds	1921
893CO	26.0	S	285428 210180	Unspecified Pit	1962
894CO	28.0	S	285457 210168	Unspecified Pits	1948
895BC	28.0	S	283747 210232	Old Coal Level	1921
896CO	28.0	SE	285523 210170	Unspecified Heap	1900
897BJ	29.0	S	284888 210170	Unspecified Ground Workings	1921
898BJ	29.0	S	284888 210170	Unspecified Ground Workings	1921
899CR	31.0	SE	283429 210049	Unspecified Ground Workings	1914
900CR	31.0	SE	283429 210049	Unspecified Ground Workings	1914
901BK	31.0	S	284661 210263	Unspecified Heap	1948
902CP	31.0	N	284052 210617	Unspecified Pit	1921
903CS	31.0	S	284634 210145	Refuse Heap	1965
904CU	33.0	NE	282420 212178	Unspecified Pit	1914
905BC	34.0	SE	283837 210249	Refuse Heap	1921
906CT	34.0	S	284371 210277	Unspecified Heap	1948
907CH	34.0	S	284371 210277	Unspecified Heap	1903
908BJ	34.0	S	284882 210169	Unspecified Ground Workings	1877
909CU	35.0	NE	282422 212178	Unspecified Pit	1921
910CU	35.0	NE	282422 212178	Unspecified Pit	1921
911CU	35.0	NE	282417 212178	Unspecified Pit	1948
912CU	35.0	NE	282417 212178	Unspecified Pit	1903
913CU	36.0	NE	282418 212182	Unspecified Pit	1921
914CQ	36.0	NW	281820 212099	Unspecified Heaps	1877
915CU	37.0	NE	282419 212184	Unspecified Pit	1877
916CO	37.0	S	285429 210179	Old Coal Level	1903
917CP	37.0	N	284050 210625	Old Coal Pit	1877
918CP	37.0	N	284044 210622	Unspecified Pit	1921
919BC	38.0	S	283750 210230	Old Trial Drift	1914
920BC	38.0	S	283750 210230	Old Trial Drift	1914

ID	Distance (m)	Direction	NGR	Use	Date
921BK	40.0	S	284507 210218	Unspecified Old Quarries	1903
922CU	41.0	NE	282415 212173	Unspecified Old Level	1903
923CP	42.0	N	283908 210572	Unspecified Old Level	1921
924CL	43.0	S	283703 210202	Unspecified Heap	1948
925BK	43.0	SE	284451 210294	Unspecified Heap	1965
926BK	43.0	SE	284451 210294	Unspecified Heap	1987
927BX	43.0	W	284120 210306	Pond	1921
928CQ	43.0	NW	281874 212037	Old Coal Level	1921
929CQ	43.0	NW	281874 212037	Old Coal Level	1921
930CP	44.0	N	284047 210628	Unspecified Pit	1914
931CP	44.0	N	284047 210628	Unspecified Pit	1914
932CP	44.0	N	284047 210628	Unspecified Pit	1948
933CL	44.0	S	283705 210204	Unspecified Heap	1921
934CL	44.0	S	283705 210204	Unspecified Heap	1921
935CI	44.0	NW	281836 212017	Old Coal Level	1914
936DI	45.0	S	283680 210095	Unspecified Disused Workings	1987
937CP	45.0	N	284048 210628	Unspecified Pit	1921
938CP	45.0	N	284048 210628	Unspecified Pit	1921
939CL	45.0	S	283705 210201	Unspecified Pit	1914
940CL	45.0	S	283705 210201	Unspecified Pit	1914
941BO	45.0	SE	283922 210808	Unspecified Pit	1948
942BX	46.0	W	284113 210316	Pond	1914
943BX	46.0	W	284113 210316	Pond	1914
944CV	46.0	NE	285454 210446	Unspecified Disused Level	1977
945BX	46.0	W	284113 210312	Pond	1903
946BX	46.0	W	284113 210312	Pond	1877
947BX	46.0	W	284112 210317	Pond	1921
948CQ	47.0	NW	281873 212040	Old Coal Level	1948
949CL	47.0	S	283712 210200	Unspecified Ground Workings	1877

ID	Distance (m)	Direction	NGR	Use	Date
950CF	47.0	S	283093 210365	Unspecified Heap	1903
951CF	47.0	S	283093 210365	Unspecified Heap	1877
952CO	47.0	S	285457 210164	Unspecified Pit	1877
953CO	49.0	SE	285515 210180	Unspecified Heap	1921
954CO	49.0	SE	285515 210180	Unspecified Heap	1921
955CO	49.0	S	285469 210156	Unspecified Ground Workings	1962
956BX	49.0	W	284111 210314	Pond	1876
957BX	50.0	W	284068 210302	Unspecified Ground Workings	1901
958BX	50.0	W	284111 210311	Pond	1921
959BX	50.0	W	284106 210315	Pond	1901
960CI	50.0	NW	281832 212022	Old Coal Level	1921
961CW	51.0	SW	284190 210177	Unspecified Ground Workings	1876
962CV	51.0	NE	285459 210445	Old Coal Level	1921
963CV	51.0	NE	285459 210445	Old Coal Level	1921
964CV	52.0	NE	285460 210446	Old Coal Pit	1921
965CJ	52.0	N	283903 210581	Unspecified Old Level	1914
966CJ	52.0	N	283903 210581	Unspecified Old Level	1914
967CT	52.0	S	284449 210250	Unspecified Quarry	1876
968CX	52.0	NE	285390 210534	Unspecified Heap	1877
969CW	53.0	SW	284248 210173	Unspecified Ground Workings	1877
970CV	53.0	NE	285459 210450	Old Coal Level	1921
971CW	53.0	SW	284291 210174	Unspecified Old Quarry	1901
972CS	53.0	S	284600 210076	Refuse Heap	1948
973CU	53.0	NE	282417 212185	Old Coal Level	1877
974CX	53.0	NE	285401 210529	Unspecified Heap	1962
975CW	54.0	SW	284293 210175	Unspecified Old Quarry	1903
976CJ	54.0	N	283901 210582	Unspecified Old Level	1921
977CJ	54.0	N	283901 210582	Unspecified Old Level	1921
978CL	54.0	S	283712 210193	Unspecified Heap	1921

ID	Distance (m)	Direction	NGR	Use	Date
979CX	55.0	NE	285401 210531	Unspecified Heap	1921
980CX	55.0	NE	285401 210531	Unspecified Heap	1921
981BC	55.0	S	283766 210212	Unspecified Ground Workings	1921
982BC	55.0	S	283766 210212	Unspecified Ground Workings	1921
983CX	56.0	NE	285402 210532	Unspecified Heap	1948
984CX	56.0	NE	285404 210533	Unspecified Heap	1921
985CX	56.0	NE	285403 210535	Unspecified Heap	1921
986BC	57.0	S	283762 210211	Unspecified Ground Workings	1948
987CT	57.0	S	284411 210237	Unspecified Ground Workings	1965
988CW	57.0	S	284295 210171	Unspecified Ground Workings	1921
989CW	57.0	S	284295 210171	Unspecified Ground Workings	1921
990CY	58.0	SE	283990 210267	Unspecified Ground Workings	1877
991EE	58.0	S	285351 210164	Old Coal Level	1903
992CW	59.0	S	284241 210170	Unspecified Ground Workings	1914
993CW	59.0	S	284241 210170	Unspecified Ground Workings	1914
994CH	59.0	S	284340 210250	Unspecified Pit	1948
995CL	60.0	S	283668 210166	Unspecified Pit	1876
996DC	60.0	N	283566 212053	Cuttings	1877
997CY	60.0	SE	283986 210277	Unspecified Ground Workings	1914
998CY	60.0	SE	283986 210277	Unspecified Ground Workings	1914
999CZ	61.0	NW	284268 210782	Unspecified Heap	1948
1000CZ	61.0	NW	284262 210787	Unspecified Ground Workings	1914
1001CZ	61.0	NW	284262 210787	Unspecified Ground Workings	1914
1002CZ	61.0	NW	284274 210788	Unspecified Heaps	1921
1003CW	63.0	S	284245 210168	Unspecified Ground Workings	1921
1004CZ	64.0	NW	284276 210786	Unspecified Heaps	1921
1005CZ	64.0	NW	284276 210786	Unspecified Heaps	1921
1006CF	64.0	S	283151 210385	Unspecified Ground Workings	1921
1007CF	64.0	S	283151 210385	Unspecified Ground Workings	1921

ID	Distance (m)	Direction	NGR	Use	Date
1008CL	64.0	S	283669 210163	Unspecified Pit	1877
1009CT	65.0	S	284439 210224	Unspecified Old Quarries	1903
1010BJ	66.0	S	284887 210161	Unspecified Heap	1948
1011CL	66.0	S	283712 210176	Unspecified Pit	1903
1012CY	66.0	SE	283973 210272	Unspecified Ground Workings	1921
1013CL	66.0	S	283711 210174	Unspecified Pit	1901
1014CW	67.0	SW	284255 210161	Unspecified Ground Workings	1921
1015CZ	68.0	NW	284265 210783	Unspecified Heap	1877
1016CW	70.0	SW	284132 210236	Unspecified Ground Workings	1948
1017BJ	71.0	S	284838 210164	Unspecified Ground Workings	1965
1018BJ	71.0	S	284838 210164	Unspecified Ground Workings	1987
1019CL	71.0	S	283713 210175	Unspecified Heap	1876
1020CL	72.0	S	283714 210173	Unspecified Heap	1877
1021CW	72.0	S	284322 210220	Unspecified Heap	1877
1022CY	72.0	SE	283977 210266	Unspecified Ground Workings	1921
1023CF	73.0	S	283082 210360	Unspecified Heap	1948
1024CL	73.0	S	283715 210172	Unspecified Pit	1921
1025CL	73.0	S	283715 210172	Unspecified Pit	1921
1026DA	74.0	NE	285412 210656	Unspecified Ground Workings	1876
1027CL	74.0	S	283713 210171	Unspecified Pit	1948
1028DA	74.0	NE	285407 210669	Unspecified Ground Workings	1962
1029CL	75.0	S	283715 210171	Unspecified Pit	1914
1030CL	75.0	S	283715 210171	Unspecified Pit	1914
1031CQ	77.0	NW	281854 212085	Unspecified Ground Workings	1914
1032CP	78.0	N	284027 210655	Unspecified Pit	1921
1033DA	78.0	NE	285407 210671	Unspecified Ground Workings	1921
1034DA	78.0	NE	285407 210671	Unspecified Ground Workings	1921
1035CL	78.0	S	283718 210168	Unspecified Heap	1921
1036CW	79.0	S	284293 210172	Unspecified Pit	1948

ID	Distance (m)	Direction	NGR	Use	Date
1037C Q	79.0	NW	281824 212093	Unspecified Ground Workings	1965
1038C F	80.0	S	283151 210376	Unspecified Heap	1948
1039C Q	80.0	NW	281801 212095	Unspecified Ground Workings	1921
1040C Q	80.0	NW	281801 212095	Unspecified Ground Workings	1921
1041C Q	81.0	NW	281837 212089	Unspecified Ground Workings	1921
1042C Z	82.0	NW	284245 210802	Unspecified Pit	1877
1043D A	82.0	NE	285302 210697	Unspecified Pit	1877
1044D B	82.0	SE	283841 210717	Old Clay Pit	1877
1045D A	83.0	NE	285413 210665	Unspecified Ground Workings	1877
1046D B	83.0	SE	283845 210715	Unspecified Pit	1948
1047D C	83.0	NE	283636 212050	Cuttings	1877
1048D B	84.0	SE	283843 210714	Old Clay Pit	1901
1049D D	84.0	N	284123 210683	Disused Old Coal Pit	1877
1050D D	84.0	N	284121 210677	Old Coal Pit	1901
1051C L	84.0	S	283722 210162	Unspecified Pit	1921
1052C P	85.0	N	284019 210659	Unspecified Heap	1921
1053D E	85.0	S	283832 210210	Old Trial Drift	1948
1054D E	86.0	S	283834 210211	Old Trial Drift	1921
1055D E	86.0	S	283834 210211	Old Trial Drift	1921
1056D E	86.0	S	283784 210190	Unspecified Drift	1876
1057C W	86.0	SW	284149 210124	Refuse Heap	1965
1058C F	86.0	S	283151 210370	Unspecified Ground Workings	1921
1059C Q	87.0	NW	281833 212087	Unspecified Heaps	1903
1060D A	88.0	NE	285406 210665	Unspecified Ground Workings	1948
1061D A	88.0	NE	285406 210665	Unspecified Ground Workings	1903
1062D A	89.0	NE	285424 210663	Unspecified Ground Workings	1900
1063D E	90.0	S	283787 210186	Unspecified Drift	1877
1064D A	90.0	NE	285294 210697	Ponds	1977
1065C P	91.0	N	284022 210666	Unspecified Pit	1914

ID	Distance (m)	Direction	NGR	Use	Date
1066CP	91.0	N	284022 210666	Unspecified Pit	1914
1067DE	91.0	S	283835 210206	Old Trial Drift	1921
1068CP	91.0	N	284022 210666	Unspecified Pit	1948
1069CP	91.0	N	284022 210665	Unspecified Pit	1921
1070CP	91.0	N	284022 210665	Unspecified Pit	1921
1071DB	91.0	SE	283849 210710	Unspecified Pit	1921
1072DA	93.0	NE	285407 210627	Unspecified Ground Workings	1921
1073DB	95.0	SE	283957 210777	Unspecified Pit	1877
1074DB	95.0	SE	283957 210778	Unspecified Pit	1948
1075DF	95.0	SE	284053 210879	Cuttings	1921
1076DF	96.0	SE	284053 210876	Cuttings	1877
1077DA	100.0	NE	285416 210629	Unspecified Ground Workings	1921
1078DA	100.0	NE	285313 210697	Unspecified Pit	1948
1079DF	101.0	SE	284055 210877	Cuttings	1914
1080DF	101.0	SE	284055 210877	Cuttings	1914
1081CY	101.0	W	284096 210260	Unspecified Ground Workings	1876
1082DF	102.0	SE	284055 210878	Cuttings	1921
1083DG	102.0	NW	281454 211816	Old Ironstone Levels	1914
1084DF	102.0	SE	284054 210877	Cuttings	1948
1085DG	103.0	NW	281458 211802	Old Ironstone Levels	1921
1086DF	104.0	SE	284046 210846	Unspecified Pit	1965
1087DG	106.0	NW	281445 211821	Unspecified Old Levels	1903
1088DG	106.0	NW	281445 211821	Old Ironstone Levels	1948
1089DA	106.0	NE	285347 210683	Unspecified Ground Workings	1921
1090DG	106.0	NW	281455 211805	Old Ironstone Levels	1921
1091DH	106.0	NE	285298 210743	Unspecified Heap	1903
1092DA	106.0	NE	285342 210696	Unspecified Ground Workings	1921
1093DH	107.0	NE	285286 210745	Unspecified Ground Workings	1877
1094DG	107.0	NW	281454 211806	Unspecified Pit	1965

ID	Distance (m)	Direction	NGR	Use	Date
1095CR	108.0	S	283473 210082	Unspecified Heap	1965
1096DH	108.0	NE	285298 210743	Unspecified Heap	1900
1097DK	109.0	NW	284343 210935	Old Gravel Pit	1877
1098DJ	109.0	N	282422 212274	Unspecified Heap	1903
1099DF	109.0	SE	284061 210869	Cuttings	1921
1100DG	109.0	NW	281446 211821	Old Ironstone Level	1877
1101DH	110.0	NE	285298 210745	Unspecified Heap	1948
1102DH	112.0	NE	285301 210741	Unspecified Ground Workings	1876
1103DN	112.0	NW	281577 211923	Unspecified Drifts	1948
1104CR	113.0	S	283438 210039	Unspecified Ground Workings	1965
1105CR	113.0	S	283438 210039	Unspecified Ground Workings	1987
1106DL	113.0	S	285122 210087	Unspecified Ground Workings	1876
1107DB	114.0	N	283961 210663	Old Coal Pit	1901
1108DB	114.0	SE	283944 210752	Unspecified Pit	1948
1109DB	114.0	SE	283942 210751	Unspecified Pit	1877
1110DI	115.0	S	283656 210104	Unspecified Ground Workings	1914
1111DI	115.0	S	283656 210104	Unspecified Ground Workings	1914
1112DJ	115.0	N	282433 212266	Unspecified Heap	1877
1113DK	120.0	NW	284280 210922	Cuttings	1877
1114DL	120.0	S	285276 210090	Unspecified Ground Workings	1876
1115DL	122.0	S	285196 210084	Unspecified Heaps	1876
1116DB	123.0	N	283969 210686	Cuttings	1877
1117DI	124.0	S	283628 210064	Unspecified Pit	1965
1118DB	124.0	SE	283950 210744	Unspecified Pit	1921
1119DL	127.0	S	285060 210077	Unspecified Heap	1876
1120DI	127.0	S	283588 210057	Unspecified Old Quarry	1901
1121DP	128.0	N	282278 212284	Cuttings	1903
1122DI	129.0	S	283627 210056	Unspecified Pit	1903
1123DQ	129.0	NW	281520 212023	Colliery	1921

ID	Distance (m)	Direction	NGR	Use	Date
1124CW	130.0	SW	284124 210207	Old Coal Pit	1921
1125CW	130.0	SW	284124 210207	Old Coal Pit	1921
1126CW	130.0	SW	284125 210206	Old Coal Pit	1914
1127CW	130.0	SW	284125 210206	Old Coal Pit	1914
1128DI	131.0	S	283586 210053	Unspecified Ground Workings	1914
1129DI	131.0	S	283586 210053	Unspecified Ground Workings	1914
1130DH	132.0	NE	285319 210747	Unspecified Heap	1900
1131CW	132.0	SW	284123 210203	Old Coal Pit	1921
1132CW	133.0	SW	284131 210197	Old Coal Pit	1921
1133CW	134.0	SW	284121 210205	Old Coal Pit	1948
1134CW	134.0	SW	284121 210205	Old Coal Pit	1903
1135DG	134.0	NW	281442 211835	Old Ironstone Levels	1921
1136CW	135.0	SW	284119 210203	Old Coal Pit	1901
1137DG	136.0	NW	281439 211842	Unspecified Heap	1965
1138DG	138.0	NW	281438 211839	Old Ironstone Levels	1921
1139DB	139.0	SE	283962 210734	Unspecified Pit	1877
1140DM	141.0	NE	284066 211882	Unspecified Heap	1914
1141DM	142.0	NE	284067 211882	Unspecified Ground Workings	1921
1142DM	142.0	NE	284067 211882	Unspecified Ground Workings	1921
1143DL	144.0	S	285174 210067	Unspecified Pit	1948
1144DL	145.0	S	285167 210067	Unspecified Ground Workings	1921
1145DM	145.0	NE	284067 211887	Unspecified Ground Workings	1921
1146DN	145.0	NW	281484 211888	Unspecified Pit	1965
1147DM	145.0	NE	284074 211883	Unspecified Pit	1903
1148DM	145.0	NE	284074 211883	Old Ironstone Quarry	1877
1149CW	145.0	SW	284117 210157	Old Coal Level	1901
1150DO	146.0	NW	284831 211010	Unspecified Ground Workings	1903
1151DO	146.0	NW	284830 211013	Unspecified Ground Workings	1921
1152DL	146.0	S	285180 210063	Ponds	1877

ID	Distance (m)	Direction	NGR	Use	Date
1153DM	146.0	NE	284077 211865	Unspecified Pit	1948
1154DO	146.0	NW	284828 211011	Unspecified Ground Workings	1900
1155DL	147.0	S	285173 210066	Unspecified Pit	1921
1156DL	147.0	S	285173 210066	Unspecified Pit	1921
1157DP	147.0	N	282202 212305	Cuttings	1903
1158DO	149.0	NW	284827 211011	Unspecified Ground Workings	1948
1159DM	149.0	NE	284076 211873	Pond	1987
1160DM	149.0	NE	284076 211874	Pond	1965
1161DO	150.0	NW	284824 211016	Unspecified Ground Workings	1921
1162DO	150.0	NW	284822 211013	Unspecified Ground Workings	1921
1163DO	150.0	NW	284822 211013	Unspecified Ground Workings	1921
1164DM	152.0	NE	284063 211901	Unspecified Heap	1948
1165DL	154.0	S	285259 210062	Unspecified Ground Workings	1876
1166DB	154.0	N	283974 210715	Unspecified Pit	1877
1167DL	154.0	S	285177 210061	Old Coal Level	1903
1168DQ	156.0	NW	281442 212007	Colliery	1914
1169DO	156.0	NW	284820 211014	Unspecified Ground Workings	1877
1170EA	157.0	S	281945 210073	Refuse Heap	1965
1171DM	158.0	NE	284065 211901	Unspecified Pit	1965
1172DQ	158.0	NW	281428 212011	Colliery	1921
1173DQ	158.0	NW	281428 212011	Colliery	1921
1174DR	158.0	SE	285598 209999	Cuttings	1877
1175DM	159.0	NE	284064 211901	Unspecified Pit	1987
1176DR	164.0	SE	285615 209995	Cuttings	1876
1177DL	164.0	S	285203 210054	Old Coal Level	1900
1178DL	165.0	S	285203 210053	Old Coal Level	1903
1179DN	169.0	NW	281493 211916	Unspecified Drift	1914
1180DG	169.0	NW	281381 211798	Old Ironstone Levels	1921
1181CW	172.0	SW	284074 210191	Unspecified Pit	1921

ID	Distance (m)	Direction	NGR	Use	Date
1182CW	172.0	SW	284074 210191	Unspecified Pit	1921
1183	172.0	S	281982 209940	Refuse Heap	1948
1184DG	172.0	NW	281378 211802	Old Ironstone Levels	1921
1185DG	172.0	NW	281369 211820	Unspecified Old Levels	1903
1186DG	172.0	NW	281369 211820	Old Ironstone Levels	1948
1187CW	173.0	SW	284072 210189	Unspecified Pit	1948
1188DN	173.0	NW	281490 211919	Unspecified Drifts	1921
1189CW	173.0	SW	284071 210188	Unspecified Pit	1921
1190DG	176.0	NW	281364 211820	Old Ironstone Level	1877
1191DS	176.0	SE	284020 210182	Old Coal Level	1903
1192DQ	176.0	NW	281372 211986	Unspecified Ground Workings	1965
1193DO	179.0	NW	284782 211049	Ponds	1948
1194DO	179.0	NW	284782 211049	Ponds	1903
1195DO	179.0	NW	284781 211051	Ponds	1965
1196DO	179.0	NW	284781 211051	Ponds	1987
1197DS	180.0	SE	284016 210183	Unspecified Heap	1921
1198DS	180.0	SE	284016 210183	Unspecified Heap	1921
1199DT	180.0	S	284486 210139	Unspecified Ground Workings	1965
1200DT	180.0	S	284486 210139	Unspecified Ground Workings	1987
1201DS	180.0	SE	284022 210176	Unspecified Heap	1876
1202DS	181.0	SE	284016 210183	Unspecified Heap	1948
1203DS	181.0	SE	284023 210174	Unspecified Heap	1877
1204DS	181.0	SE	284014 210180	Old Coal Level	1921
1205DS	181.0	SE	283959 210137	Burial Ground	1876
1206DO	183.0	NW	284778 211053	Ponds	1921
1207DU	183.0	NW	281809 212168	Unspecified Heap	1965
1208DU	183.0	NW	281809 212168	Unspecified Heap	1987
1209DS	183.0	SE	283962 210134	Burial Ground	1877
1210DS	183.0	SW	284078 210177	Old Coal Level	1921

ID	Distance (m)	Direction	NGR	Use	Date
1211DS	183.0	SW	284078 210177	Old Coal Level	1921
1212DS	184.0	SW	284077 210176	Old Coal Level	1948
1213DS	186.0	SW	284085 210166	Old Coal Level	1921
1214DQ	189.0	NW	281586 212081	Unspecified Ground Workings	1914
1215DQ	189.0	NW	281603 212081	Unspecified Ground Workings	1921
1216DQ	189.0	NW	281603 212081	Unspecified Ground Workings	1921
1217DO	189.0	W	284764 210995	Unspecified Heap	1921
1218DO	189.0	NW	284770 211026	Ponds	1877
1219DQ	191.0	NW	281606 212071	Unspecified Pit	1948
1220DQ	191.0	NW	281606 212071	Unspecified Pit	1903
1221DS	191.0	SE	284023 210172	Unspecified Heap	1921
1222DQ	191.0	NW	281579 212018	Unspecified Ground Workings	1965
1223DO	191.0	W	284762 210993	Unspecified Heap	1948
1224DG	192.0	NW	281365 211824	Old Ironstone Levels	1914
1225DQ	192.0	NW	281505 212047	Colliery	1903
1226DG	193.0	NW	281365 211826	Old Ironstone Levels	1921
1227DQ	193.0	NW	281599 212083	Unspecified Old Quarry	1877
1228DQ	193.0	NW	281599 212083	Unspecified Ground Workings	1921
1229DQ	194.0	NW	281392 211996	Refuse Heap	1921
1230DQ	194.0	NW	281396 211993	Refuse Heaps	1921
1231DQ	194.0	NW	281396 211993	Refuse Heaps	1921
1232FC	194.0	N	282439 212352	Unspecified Old Quarries	1877
1233DQ	195.0	NW	281604 212072	Unspecified Pit	1965
1234DN	197.0	NW	281522 211984	Unspecified Drifts	1948
1235DV	197.0	S	283884 210083	Unspecified Heap	1876
1236DG	197.0	NW	281360 211830	Old Ironstone Levels	1921
1237DG	199.0	NW	281364 211839	Unspecified Heap	1965
1238DN	200.0	NW	281489 211954	Unspecified Drift	1914
1239DV	200.0	S	283885 210079	Unspecified Heap	1877

ID	Distance (m)	Direction	NGR	Use	Date
1240DN	201.0	NW	281490 211956	Unspecified Drifts	1921
1241DW	203.0	NW	284793 211069	Unspecified Pit	1900
1242DW	205.0	NW	284787 211074	Unspecified Pit	1877
1243DN	206.0	NW	281486 211958	Unspecified Drifts	1921
1244DW	207.0	NW	284794 211078	Pond	1921
1245DX	207.0	S	283421 209970	Unspecified Heap	1876
1246DQ	208.0	NW	281622 212101	Unspecified Ground Workings	1948
1247DX	210.0	S	283422 209967	Unspecified Pit	1914
1248DX	210.0	S	283422 209967	Unspecified Pit	1914
1249DX	210.0	S	283422 209968	Unspecified Heap	1921
1250DX	210.0	S	283422 209968	Unspecified Heap	1921
1251DX	210.0	S	283423 209968	Unspecified Heap	1921
1252DW	211.0	NW	284790 211080	Pond	1921
1253DX	211.0	S	283421 209967	Unspecified Heap	1948
1254DX	211.0	S	283419 209967	Unspecified Heap	1877
1255DQ	213.0	NW	281619 212098	Unspecified Ground Workings	1965
1256DG	213.0	NW	281305 211796	Old Ironstone Levels	1914
1257DG	213.0	NW	281306 211797	Unspecified Ground Workings	1921
1258DG	213.0	NW	281306 211797	Unspecified Ground Workings	1921
1259DG	218.0	NW	281315 211790	Old Ironstone Levels	1921
1260	219.0	NE	284547 211018	Unspecified Pit	1903
1261DX	219.0	S	283427 209959	Unspecified Heap	1921
1262DY	220.0	NW	281301 211801	Unspecified Heaps	1903
1263DY	220.0	NW	281301 211801	Old Ironstone Levels	1948
1264DG	221.0	NW	281313 211792	Unspecified Pit	1965
1265DY	222.0	NW	281236 211775	Unspecified Old Level	1903
1266DY	222.0	NW	281302 211799	Old Ironstone Level	1877
1267DN	227.0	NW	281489 211988	Unspecified Drifts	1921
1268DZ	227.0	S	285057 209940	Cemetery	1948

ID	Distance (m)	Direction	NGR	Use	Date
1269DZ	229.0	S	285060 209937	Cemetery	1964
1270DZ	229.0	S	285060 209937	Cemetery	1980
1271DZ	229.0	S	285060 209937	Cemetery	1981
1272EF	232.0	S	283917 209990	Reservoir	1948
1273DQ	236.0	NW	281486 212032	Unspecified Heap	1921
1274DQ	236.0	NW	281486 212032	Unspecified Heap	1921
1275DQ	236.0	NW	281485 212029	Unspecified Ground Workings	1914
1276DY	237.0	NW	281298 211809	Unspecified Ground Workings	1921
1277DX	238.0	S	283412 209927	Unspecified Pits	1876
1278DQ	238.0	NW	281481 212034	Unspecified Ground Workings	1921
1279DX	238.0	S	283423 209930	Unspecified Pit	1988
1280DX	238.0	S	283423 209930	Unspecified Pit	1964
1281DX	239.0	SE	283419 209935	Unspecified Pit	1903
1282DX	239.0	SE	283419 209935	Unspecified Pit	1877
1283DX	239.0	SE	283419 209917	Unspecified Pit	1921
1284DX	240.0	SE	283420 209934	Unspecified Old Quarry	1901
1285DX	240.0	SE	283418 209919	Unspecified Ground Workings	1921
1286DX	240.0	SE	283418 209919	Unspecified Ground Workings	1921
1287DX	240.0	S	283418 209919	Unspecified Ground Workings	1914
1288DX	240.0	S	283418 209919	Unspecified Ground Workings	1914
1289DX	240.0	S	283408 209920	Unspecified Ground Workings	1948
1290DQ	240.0	NW	281482 212036	Unspecified Ground Workings	1965
1291EA	242.0	S	281788 210057	Cuttings	1948
1292EB	242.0	S	281788 210057	Cuttings	1903
1293EB	242.0	S	281788 210057	Cuttings	1877
1294EB	243.0	S	281789 210055	Cuttings	1914
1295EB	243.0	S	281789 210055	Cuttings	1914
1296EB	243.0	S	281794 210058	Cuttings	1901
1297EB	245.0	S	281790 210056	Cuttings	1921

ID	Distance (m)	Direction	NGR	Use	Date
1298DX	245.0	SE	283405 209915	Unspecified Ground Workings	1988
1299DX	245.0	SE	283405 209915	Unspecified Ground Workings	1964
1300DQ	246.0	NW	281481 212031	Unspecified Ground Workings	1948
1301DX	247.0	SE	283401 209915	Unspecified Pit	1877
1302DY	248.0	NW	281290 211815	Unspecified Heap	1965
1303EB	249.0	S	281792 210049	Cuttings	1921
1304	249.0	NE	283987 212053	Cuttings	1877
1305DX	249.0	S	283415 209911	Unspecified Ground Workings	1921
1306EB	250.0	S	281788 210048	Cuttings	1921

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
1307W	0.0	On Site	282961 211903	Unspecified Drift	1948
1308AO	0.0	On Site	283279 211732	Colliery	1948
1309BA	0.0	On Site	283382 211742	Coal Shaft	1948
1310G	0.0	On Site	283209 211740	Unspecified Old Level	1903
1311G	0.0	On Site	283139 211746	Unspecified Old Levels	1903
1312G	0.0	On Site	283183 211721	Air Shaft	1903
1313G	0.0	On Site	283168 211718	Old Coal Levels	1948
1314AA	0.0	On Site	285142 210529	Old Coal Level	1900
1315BL	0.0	On Site	283429 210759	Old Coal Level	1901
1316CX	0.0	On Site	285244 210511	Old Coal Level	1903
1317Y	0.0	On Site	285404 210409	Old Coal Level	1948

ID	Distance (m)	Direction	NGR	Use	Date
1318AG	0.0	On Site	285402 210270	Old Coal Level	1903
1319BY	0.0	On Site	284964 210308	Colliery	1948
1320AG	0.0	On Site	285348 210272	Old Coal Level	1900
1321AG	0.0	On Site	285328 210258	Old Coal Pit	1903
1322BX	0.0	On Site	284139 210397	Colliery	1901
1323EC	0.0	On Site	283833 210404	Old Coal Pit	1901
1324ED	0.0	On Site	283324 210868	Air Shaft	1948
1325ED	0.0	On Site	283331 210850	Air Shaft	1903
1326AP	0.0	On Site	281808 211693	Unspecified Disused Levels	1965
1327AP	0.0	On Site	281842 211662	Unspecified Old Levels	1903
1328AP	0.0	On Site	281868 211655	Old Coal Level	1877
1329H	0.0	On Site	281888 211646	Unspecified Old Levels	1903
1330H	0.0	On Site	281893 211637	Old Coal Level	1877
1331AR	0.0	On Site	282141 212051	Colliery	1948
1332AR	0.0	On Site	282141 212051	Colliery	1903
1333CQ	0.0	On Site	282047 211976	Old Coal Level	1877
1334D	0.0	On Site	282083 211958	Unspecified Disused Level	1965
1335D	0.0	On Site	282124 211941	Unspecified Old Level	1948
1336D	0.0	On Site	282168 211954	Old Coal Level	1877
1337AM	0.0	On Site	282328 211899	Unspecified Old Levels	1948
1338AV	0.0	On Site	282341 212059	Unspecified Mine	1965
1339AM	0.0	On Site	282328 211908	Unspecified Disused Levels	1965
1340AM	0.0	On Site	282362 211979	Unspecified Disused Levels	1965
1341AM	0.0	On Site	282352 211932	Coal Levels	1877
1342AM	0.0	On Site	282367 211948	Coal Levels	1877
1343AM	0.0	On Site	282382 211942	Unspecified Disused Levels	1965
1344AS	0.0	On Site	282478 212034	Colliery	1877
1345AM	0.0	On Site	282422 211928	Unspecified Disused Levels	1965
1346AS	0.0	On Site	282568 212004	Colliery	1948

ID	Distance (m)	Direction	NGR	Use	Date
1347AS	0.0	On Site	282568 212004	Colliery	1903
1348AM	0.0	On Site	282487 211918	Unspecified Old Levels	1903
1349AU	0.0	On Site	282506 211890	Old Coal Level	1877
1350AU	0.0	On Site	282531 211881	Unspecified Old Levels	1903
1351AU	0.0	On Site	282578 211838	Unspecified Old Level	1948
1352AY	0.0	On Site	282949 211962	Unspecified Disused Drift	1987
1353AY	0.0	On Site	282949 211962	Unspecified Disused Drift	1965
1354BA	0.0	On Site	283137 211748	Unspecified Disused Levels	1965
1355BA	0.0	On Site	283161 211737	Unspecified Disused Levels	1987
1356BA	0.0	On Site	283211 211754	Unspecified Disused Levels	1965
1357BA	0.0	On Site	283214 211752	Unspecified Disused Levels	1987
1358BA	0.0	On Site	283263 211727	Unspecified Disused Drift	1987
1359BG	0.0	On Site	283390 210568	Unspecified Disused Level	1965
1360BG	0.0	On Site	283390 210568	Unspecified Disused Level	1987
1361EC	0.0	On Site	283683 210434	Unspecified Disused Level	1987
1362CG	0.0	On Site	283685 210341	Unspecified Disused Shaft	1987
1363CG	0.0	On Site	283686 210336	Unspecified Disused Level	1965
1364AL	0.0	On Site	283891 210408	Unspecified Disused Level	1987
1365AL	0.0	On Site	283891 210408	Unspecified Disused Level	1965
1366Y	0.0	On Site	285391 210419	Unspecified Disused Level	1962
1367EC	0.0	On Site	283816 210446	Unspecified Old Shaft	1948
1368CY	0.0	On Site	284270 210478	Colliery	1948
1369AL	0.0	On Site	283841 210403	Unspecified Old Shaft	1948
1370BL	0.0	On Site	283378 210737	Old Coal Level	1948
1371EC	0.0	On Site	283814 210451	Unspecified Old Shaft	1903
1372BL	0.0	On Site	283425 210758	Coal Level	1903
1373AL	0.0	On Site	283834 210407	Unspecified Old Shaft	1903
1374BT	0.0	On Site	283271 210143	Old Coal Level	1903
1375AL	0.0	On Site	283834 210407	Old Coal Pit	1877

ID	Distance (m)	Direction	NGR	Use	Date
1376BL	0.0	On Site	283425 210758	Old Coal Level	1877
1377AS	0.0	On Site	282552 211933	Unspecified Drift	1948
1378AS	0.0	On Site	282462 212011	Unspecified Drift	1948
1379AS	0.0	On Site	282556 211936	Unspecified Drift	1903
1380AS	0.0	On Site	282560 211990	Unspecified Drift	1903
1381CU	0.0	On Site	282421 212114	Air Shaft	1948
1382CU	0.0	On Site	282419 212112	Air Shaft	1903
1383AG	4.0	S	285370 210223	Old Coal Level	1903
1384AG	5.0	S	285368 210223	Old Coal Pit	1900
1385DC	5.0	N	283442 211991	Unspecified Disused Drift	1987
1386AH	6.0	S	285424 210190	Old Coal Level	1900
1387CQ	7.0	NW	281890 212030	Old Coal Level	1877
1388CQ	7.0	NW	281890 212030	Old Coal Level	1903
1389CL	9.0	S	283648 210226	Old Coal Level	1948
1390CL	9.0	S	283648 210226	Old Coal Level	1903
1391CR	10.0	SE	283424 210059	Old Coal Level	1901
1392AK	11.0	W	284186 210339	Air Shaft	1948
1393CL	20.0	S	283741 210237	Old Coal Level	1901
1394CB	20.0	N	283912 210558	Unspecified Old Level	1948
1395AH	37.0	S	285429 210179	Old Coal Level	1903
1396DD	37.0	N	284050 210625	Old Coal Pit	1877
1397CU	41.0	NE	282415 212173	Unspecified Old Level	1903
1398CV	46.0	NE	285454 210446	Unspecified Disused Level	1977
1399CQ	47.0	NW	281873 212040	Old Coal Level	1948
1400CU	53.0	NE	282417 212185	Old Coal Level	1877
1401EE	58.0	S	285351 210164	Old Coal Level	1903
1402DB	83.0	SE	283845 210715	Unspecified Old Shafts	1903
1403DD	84.0	N	284123 210683	Disused Old Coal Pit	1877
1404DD	84.0	N	284121 210677	Old Coal Pit	1901

ID	Distance (m)	Direction	NGR	Use	Date
1405D D	85.0	N	284124 210677	Unspecified Old Shaft	1903
1406D E	85.0	S	283832 210210	Old Trial Drift	1948
1407D E	86.0	S	283784 210190	Unspecified Drift	1876
1408D E	90.0	S	283787 210186	Unspecified Drift	1877
1409D D	94.0	N	284128 210689	Old Coal Shaft	1948
1410D Y	106.0	NW	281445 211821	Unspecified Old Levels	1903
1411D Y	106.0	NW	281445 211821	Old Ironstone Levels	1948
1412D Y	109.0	NW	281446 211821	Old Ironstone Level	1877
1413D N	112.0	NW	281577 211923	Unspecified Drifts	1948
1414D B	114.0	N	283961 210663	Old Coal Pit	1901
1415D B	114.0	N	283961 210663	Old Coal Shafts	1948
1416D B	114.0	N	283961 210663	Unspecified Old Shafts	1903
1417D V	130.0	S	283796 210150	Air Shaft	1877
1418D B	132.0	N	283921 210673	Old Coal Shafts	1948
1419C W	134.0	SW	284121 210205	Old Coal Pit	1948
1420C W	134.0	SW	284121 210205	Old Coal Pit	1903
1421C W	135.0	SW	284119 210203	Old Coal Pit	1901
1422D I	136.0	S	283677 210103	Air Shaft	1876
1423D E	137.0	S	283853 210162	Air Shaft	1876
1424D I	140.0	S	283675 210100	Air Shaft	1877
1425D L	154.0	S	285177 210061	Old Coal Level	1903
1426D B	158.0	N	283979 210717	Old Coal Shafts	1948
1427D L	164.0	S	285203 210054	Old Coal Level	1900
1428D L	165.0	S	285203 210053	Old Coal Level	1903
1429D Y	172.0	NW	281369 211820	Unspecified Old Levels	1903
1430D Y	172.0	NW	281369 211820	Old Ironstone Levels	1948
1431D Y	176.0	NW	281364 211820	Old Ironstone Level	1877
1432D S	176.0	SE	284020 210182	Old Coal Level	1903
1433C W	184.0	SW	284077 210176	Old Coal Level	1948

ID	Distance (m)	Direction	NGR	Use	Date
1434DQ	192.0	NW	281505 212047	Colliery	1903
1435DQ	197.0	NW	281522 211984	Unspecified Drifts	1948
1436DY	220.0	NW	281301 211801	Old Ironstone Levels	1948
1437DY	222.0	NW	281302 211799	Old Ironstone Level	1877
1438DV	271.0	S	283878 210029	Old Coal Drift	1948
1439DY	272.0	NW	281236 211775	Old Ironstone Level	1948
1440DY	280.0	NW	281234 211764	Unspecified Old Level	1903
1441DM	290.0	NE	284201 211938	Old Ironstone Level	1948
1442EF	294.0	SE	283981 209973	Old Coal Drift	1901
1443EF	295.0	S	283877 210002	Air Shaft	1876
1444EF	298.0	S	283877 210000	Air Shaft	1877
1445EF	319.0	S	283923 209995	Old Coal Drift	1903
1446EI	325.0	NE	284245 211932	Old Ironstone Level	1877
1447EJ	326.0	NW	280856 211254	Disused Old Ironstone Level	1877
1448EG	330.0	N	283598 212323	Unspecified Melin	1948
1449EG	330.0	N	283598 212323	Unspecified Melin	1903
1450EG	330.0	N	283598 212323	Unspecified Melin	1877
1451EH	343.0	S	283760 209911	Air Shaft	1876
1452EO	343.0	NW	281083 211888	Colliery	1877
1453EH	345.0	S	283760 209909	Air Shaft	1877
1454EK	355.0	S	283959 209863	Old Coal Level	1901
1455EI	355.0	NE	284255 211966	Unspecified Disused Level	1987
1456EJ	356.0	NW	280876 211246	Unspecified Old Level	1903
1457EJ	358.0	NW	280877 211248	Disused Old Ironstone Level	1901
Not shown	361.0	W	280810 211098	Unspecified Disused Shaft	1965
Not shown	367.0	W	280807 211101	Unspecified Old Shaft	1903
Not shown	367.0	W	280807 211101	Old Ironstone Shaft	1948
1461EI	388.0	NE	284301 211959	Unspecified Old Level	1903
1462EK	400.0	S	284121 209883	Old Coal Level	1948

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	400.0	NW	280585 211222	Disused Old Ironstone Level	1877
1464F D	403.0	S	284118 209888	Old Coal Level	1903
1465F E	414.0	SE	285766 209936	Old Coal Level	1948
1466E L	466.0	S	285035 209739	Old Coal Level	1948
1467E L	485.0	S	284867 209719	Old Coal Level	1948
1468E M	487.0	S	284859 209713	Old Coal Level	1900
1469E M	489.0	S	284863 209724	Old Coal Level	1903
1470E L	498.0	S	285088 209698	Old Coal Level	1948
1471F F	510.0	NW	284697 211365	Air Shaft	1948
1472E M	518.0	S	284844 209697	Old Coal Level	1903
Not shown	522.0	W	280626 211061	Unspecified Old Level	1903
Not shown	522.0	W	280626 211061	Old Ironstone Levels	1948
Not shown	522.0	W	280626 211061	Old Ironstone Level	1877
Not shown	525.0	W	280620 211058	Old Ironstone Level	1901
1477E N	529.0	S	282619 209661	Old Coal Pit	1901
1478E N	529.0	S	282619 209661	Old Coal Pit	1948
1479E N	529.0	S	282619 209661	Old Coal Pit	1903
1480E N	534.0	S	282622 209659	Coal Pit	1876
1481E N	536.0	S	282620 209656	Coal Pit	1877
1482E O	545.0	NW	281008 211899	Old Coal Shaft	1948
1483E O	547.0	NW	281004 211899	Unspecified Old Shaft	1903
1484E O	549.0	NW	281008 211905	Old Coal Shaft	1877
1485E P	551.0	NW	281093 212043	Unspecified Old Level	1903
1486E P	551.0	NW	281093 212043	Old Coal Level	1948
1487E P	554.0	NW	281090 212043	Old Coal Level	1877
Not shown	571.0	W	280573 211010	Old Ironstone Levels	1948
1489F G	576.0	NW	281525 212450	Air Shaft	1877
Not shown	584.0	W	280492 211070	Disused Ironstone Level	1877
Not shown	598.0	W	280557 211002	Air Shaft	1948

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	598.0	W	280557 211002	Air Shaft	1903
Not shown	598.0	W	280557 211002	Air Shaft	1877
1494E Q	612.0	S	284217 209688	Old Coal Pit	1901
1495E Q	613.0	S	284220 209688	Old Coal Pit	1948
1496E Q	613.0	S	284220 209688	Old Coal Pit	1903
Not shown	613.0	W	280506 211079	Disused Ironstone Level	1901
1498E R	624.0	NW	280918 211914	Unspecified Disused Level	1987
1499E R	658.0	NW	280891 211946	Unspecified Disused Level	1965
Not shown	662.0	W	280488 211030	Unspecified Old Level	1903
1501E R	669.0	NW	280885 211936	Unspecified Old Level	1903
1502E R	672.0	NW	280884 211938	Old Coal Level	1948
Not shown	703.0	W	280488 210727	Unspecified Old Shaft	1903
Not shown	703.0	W	280488 210727	Old Ironstone Level	1948
Not shown	703.0	W	280488 210727	Old Ironstone Level	1877
Not shown	704.0	W	280724 211670	Old Ironstone Level	1877
Not shown	720.0	NW	280637 211522	Old Ironstone Level	1877
Not shown	725.0	W	280459 210763	Unspecified Disused Level	1987
Not shown	737.0	NW	280650 211567	Unspecified Level	1877
Not shown	743.0	W	280384 210823	Disused Ironstone Level	1877
Not shown	754.0	W	280396 210846	Old Ironstone Level	1948
Not shown	755.0	W	280408 211164	Disused Old Ironstone Level	1901
Not shown	755.0	W	280407 211164	Unspecified Old Level	1903
Not shown	764.0	NW	280631 211582	Old Ironstone Level	1877
1515E U	782.0	SE	285954 209248	Colliery	1948
1516E S	788.0	NW	281143 212430	Old Coal Shaft	1948
1517E S	788.0	NW	281143 212430	Unspecified Shaft	1903
1518E T	801.0	S	282186 209202	Colliery	1948
1519E T	806.0	S	282091 209140	Colliery	1901
Not shown	810.0	NW	280740 212048	Unspecified Disused Level	1987

ID	Distance (m)	Direction	NGR	Use	Date
1521ET	811.0	S	282134 209184	Unspecified Mine	1988
1522ET	811.0	S	282134 209184	Unspecified Mine	1964
Not shown	814.0	NW	280440 211586	Old Coal Level	1877
Not shown	839.0	W	280318 210838	Unspecified Disused Level	1965
Not shown	840.0	W	280312 210836	Unspecified Old Level	1903
Not shown	845.0	W	280307 210830	Disused Ironstone Level	1901
Not shown	858.0	SW	280476 210329	Trial Shaft	1948
Not shown	861.0	W	280355 210562	Unspecified Old Shaft	1903
Not shown	864.0	SW	280469 210327	Unspecified Disused Shaft	1965
Not shown	864.0	SW	280469 210327	Unspecified Disused Shaft	1987
1531EU	864.0	SE	285949 209246	Unspecified Mine	1980
1532EU	864.0	SE	285949 209246	Unspecified Mine	1964
Not shown	865.0	W	280284 210911	Unspecified Disused Level	1965
Not shown	866.0	W	280279 210907	Unspecified Old Level	1903
Not shown	866.0	W	280279 210907	Old Ironstone Level	1948
Not shown	866.0	W	280279 210907	Ironstone Level	1877
Not shown	868.0	SW	280471 210323	Trial Shaft	1903
Not shown	870.0	W	280351 210566	Old Ironstone Shaft	1948
Not shown	873.0	W	280269 210904	Ironstone Level	1901
Not shown	874.0	W	280348 210567	Unspecified Disused Shaft	1965
Not shown	874.0	W	280348 210567	Unspecified Disused Shaft	1987
Not shown	880.0	NW	280425 211497	Unspecified Old Shaft	1903
Not shown	883.0	NW	280422 211495	Old Coal Pit	1877
Not shown	884.0	SW	280378 210458	Trial Shaft	1948
Not shown	888.0	SW	280371 210458	Unspecified Disused Shaft	1987
Not shown	888.0	SW	280371 210458	Unspecified Disused Shaft	1965
Not shown	894.0	SW	280370 210452	Trial Shaft	1903
1548EV	899.0	S	285438 209317	Air Shaft	1903
Not shown	905.0	W	280312 211317	Old Coal Level	1877

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	907.0	W	280308 211313	Old Coal Level	1901
1551E V	913.0	S	285393 209306	Air Shaft	1903
1552E V	915.0	S	285393 209305	Air Shaft	1900
Not shown	927.0	NW	280577 211967	Old Coal Level	1948
Not shown	927.0	NW	280577 211967	Unspecified Old Level	1903
Not shown	945.0	NW	280670 212114	Old Coal Levels	1948
Not shown	952.0	NW	280686 212157	Unspecified Old Levels	1903
Not shown	955.0	S	285496 209269	Air Shaft	1903
Not shown	966.0	S	285424 209231	Unspecified Level	1876
Not shown	970.0	S	285887 209168	Disused Colliery	1900
Not shown	981.0	NW	280256 211438	Old Coal Level	1877
Not shown	982.0	S	282119 209172	Coal Pit	1877
Not shown	985.0	NW	280664 212182	Unspecified Old Shaft	1903
Not shown	985.0	NW	280251 211438	Old Coal Level	1901
Not shown	986.0	NW	280666 212186	Old Coal Shaft	1877
Not shown	988.0	NW	280657 212184	Unspecified Disused Shaft	1987
Not shown	997.0	NW	280608 212112	Unspecified Old Levels	1903
Not shown	998.0	W	280230 210538	Air Shaft	1877
Not shown	999.0	S	285430 209220	Unspecified Level	1903
Not shown	999.0	W	280159 211138	Disused Air Shaft	1965
Not shown	999.0	W	280159 211138	Disused Air Shaft	1987
Not shown	999.0	S	285430 209221	Unspecified Level	1900

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1572AA	0.0	On Site	285138 210535	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1573AJ	0.0	On Site	285270 210381	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1574AO	0.0	On Site	283365 211835	Coal, Surface Mined	Cefn Byrle OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1575AG	0.0	On Site	285396 210276	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1576	0.0	On Site	284000 211325	Coal, Surface Mined	Nant Helen OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1577EW	0.0	On Site	283385 211743	Coal, Deep	Glynllech Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1578BB	0.0	On Site	283242 211893	Sandstone	Cefn-yr-erw	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1579BO	0.0	On Site	283845 210911	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1580EX	0.0	On Site	283722 211015	Coal, Deep	Onllwyn Trial Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1581EW	0.0	On Site	283211 211755	Coal, Deep	Cefn-byrle	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1582EX	0.0	On Site	283638 211016	Coal, Deep	Onllwyn Slope	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1583G	0.0	On Site	283155 211737	Coal, Deep	Cefn-byrle	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1584AL	0.0	On Site	283914 210451	Coal, Deep	Onllwyn Slope	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1585AL	0.0	On Site	283868 210398	Coal, Deep	Drym Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1586AL	0.0	On Site	283814 210451	Coal, Deep	Drym Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1587AL	0.0	On Site	283834 210402	Coal, Deep	Drym Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1588EC	0.0	On Site	283772 210411	Coal, Deep	Drym Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1589BL	0.0	On Site	283461 210779	Coal, Deep	Cwm Mawr Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1590BL	0.0	On Site	283517 210696	Coal, Deep	Cwm Mawr Coal Workings	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1591BL	0.0	On Site	283445 210781	Coal, Deep	Cwm Mawr Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1592BL	0.0	On Site	283427 210770	Coal, Deep	Cwm Mawr Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1593EC	0.0	On Site	283683 210409	Coal, Deep	Dulais Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1594ED	0.0	On Site	283331 210870	Coal, Deep	Cwm Mawr Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1595ED	0.0	On Site	283323 210868	Coal, Deep	Cwm Mawr Air Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1596BL	0.0	On Site	283381 210730	Coal, Deep	Cwm Mawr Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1597N	0.0	On Site	282906 211464	Sandstone	Cefn-yr-erw	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1598CG	0.0	On Site	283683 210333	Coal, Deep	Onllwyn Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1599AS	0.0	On Site	282592 212011	Coal, Deep	Abercrave Middle Main	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1600AQ	0.0	On Site	282736 211561	Sandstone	Cefn-yr-erw	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1601U	0.0	On Site	282550 211927	Coal, Deep	Abercrave Black Drift	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1602AS	0.0	On Site	282501 211999	Coal, Deep	Aber-craf Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1603EY	0.0	On Site	282639 211661	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1604U	0.0	On Site	282533 211884	Coal, Deep	Aber-craf Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1605EZ	0.0	On Site	282877 211179	Sandstone	Cwm-mawr	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1606AT	0.0	On Site	282519 211768	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1607K	0.0	On Site	282549 211530	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1608	0.0	On Site	282600 211400	Coal, Surface Mined	Nant Helen OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1609U	0.0	On Site	282330 211919	Coal, Deep	Aber-craf Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1610K	0.0	On Site	282470 211516	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1611FA	0.0	On Site	281668 210916	Sandstone	Hendre-ladis	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1612T	0.0	On Site	282193 211956	Coal, Deep	Aber-craf Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1613	0.0	On Site	281765 211500	Coal, Surface Mined	Nant Helen OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1614BT	0.0	On Site	283270 210146	Coal, Deep	Halfway House	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1615V	0.0	On Site	281836 211649	Coal, Deep	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1616V	0.0	On Site	281874 211669	Coal, Deep	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1617B	0.0	On Site	282017 211780	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1618J	0.0	On Site	282168 211488	Sandstone	Aber-cral Colliery	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1619AN	0.0	On Site	282203 211649	Coal, Deep	Aber-cral Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1620AR	0.0	On Site	282106 212011	Coal, Deep	Aber-craf Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1621	0.0	On Site	282465 211240	Coal, Surface Mined	Nant Helen Extension Surface Coal Mine	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1622CO	2.0	S	285363 210228	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1623AK	12.0	W	284178 210370	Coal, Deep	Onllwyn Colliery, No. 1 Drift	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1624CK	16.0	NE	285076 210809	Sandstone	Gors Llwyn	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1625CG	31.0	N	283496 210283	Coal, Deep	Onllwyn Trial Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1626BC	37.0	SE	283831 210265	Coal, Deep	Onllwyn Trial Drift	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1627CO	40.0	S	285423 210184	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1628BC	42.0	S	283752 210229	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1629CQ	50.0	NW	281885 212046	Coal, Deep	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1630CP	51.0	N	283903 210577	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1631CV	53.0	NE	285457 210447	Coal, Deep	Llwyn-pica	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1632BC	59.0	S	283813 210234	Coal, Deep	Onllwyn Colliery Fan Drift	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1633BX	60.0	W	284148 210311	Coal, Deep	Onllwyn Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1634CU	61.0	NE	282412 212192	Coal, Deep	Cae-Hopkin	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1635CJ	70.0	N	283700 210590	Coal, Surface Mined	Onllwyn OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1636DE	86.0	S	283719 210171	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1637CT	86.0	SE	284460 210260	Sandstone	Rhos-y-gelynen Quarries	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1638DB	87.0	SE	283841 210717	Clay & Shale	Onllwyn Clay Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1639CT	93.0	S	284431 210239	Coal, Deep	Rhos-y-gelynen Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1640CN	94.0	S	284638 210222	Sandstone	Rhos-y-gelynen Quarries	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1641FB	97.0	N	284122 210686	Coal, Deep	Halfway House	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1642BK	97.0	S	284577 210232	Sandstone	Rhos-y-gelynen Quarries	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1643DE	98.0	S	283788 210183	Coal, Deep	Onllwyn Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1644CP	116.0	N	283962 210662	Coal, Deep	Onllwyn Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1645DK	123.0	NW	284342 210940	Sand & Gravel	Onllwyn Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1646CW	135.0	S	284289 210184	Sandstone	Onllwyn Inn Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1647CR	139.0	S	283477 210062	Coal, Deep	Onllwyn Four Feet	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1648CW	139.0	SW	284119 210202	Coal, Deep	Onllwyn Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1649DI	141.0	S	283679 210102	Coal, Deep	Onllwyn Air Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1650DL	158.0	S	285178 210063	Coal, Deep	Gors Llwyn	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1651DG	158.0	NW	281441 211844	Ironstone	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1652EI	170.0	NE	284066 211888	Ironstone	Cefn-y-byrle	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1653CW	179.0	S	284212 210125	Sandstone	Onllwyn Inn Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1654DS	181.0	SE	284024 210198	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1655DS	188.0	SW	284079 210173	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1656DS	202.0	SE	284025 210175	Sandstone	Onllwyn Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1657DJ	212.0	N	282414 212347	Sandstone	Cae-Hopkin	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1658DG	212.0	NW	281362 211832	Ironstone	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1659	218.0	NW	281635 212083	Sandstone	Llwyn-llafrad	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1660CW	225.0	SW	284114 210103	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1661FC	242.0	N	282417 212377	Sandstone	Cae-Hopkin	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1662EF	279.0	S	283892 210029	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1663DY	289.0	NW	281239 211782	Ironstone	Llwyn-llafrad	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1664EF	301.0	S	283879 210000	Coal, Deep	Onllwyn Air Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1665	306.0	N	282425 212440	Sandstone	Ty-mawr	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1666EI	326.0	NE	284243 211927	Ironstone	Cefn-y-byrle Ironstone Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1667DY	356.0	NW	281143 211750	Sandstone	Gwaun-ton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1668	357.0	NE	284356 211810	Ironstone	Cefn-y-byrle	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

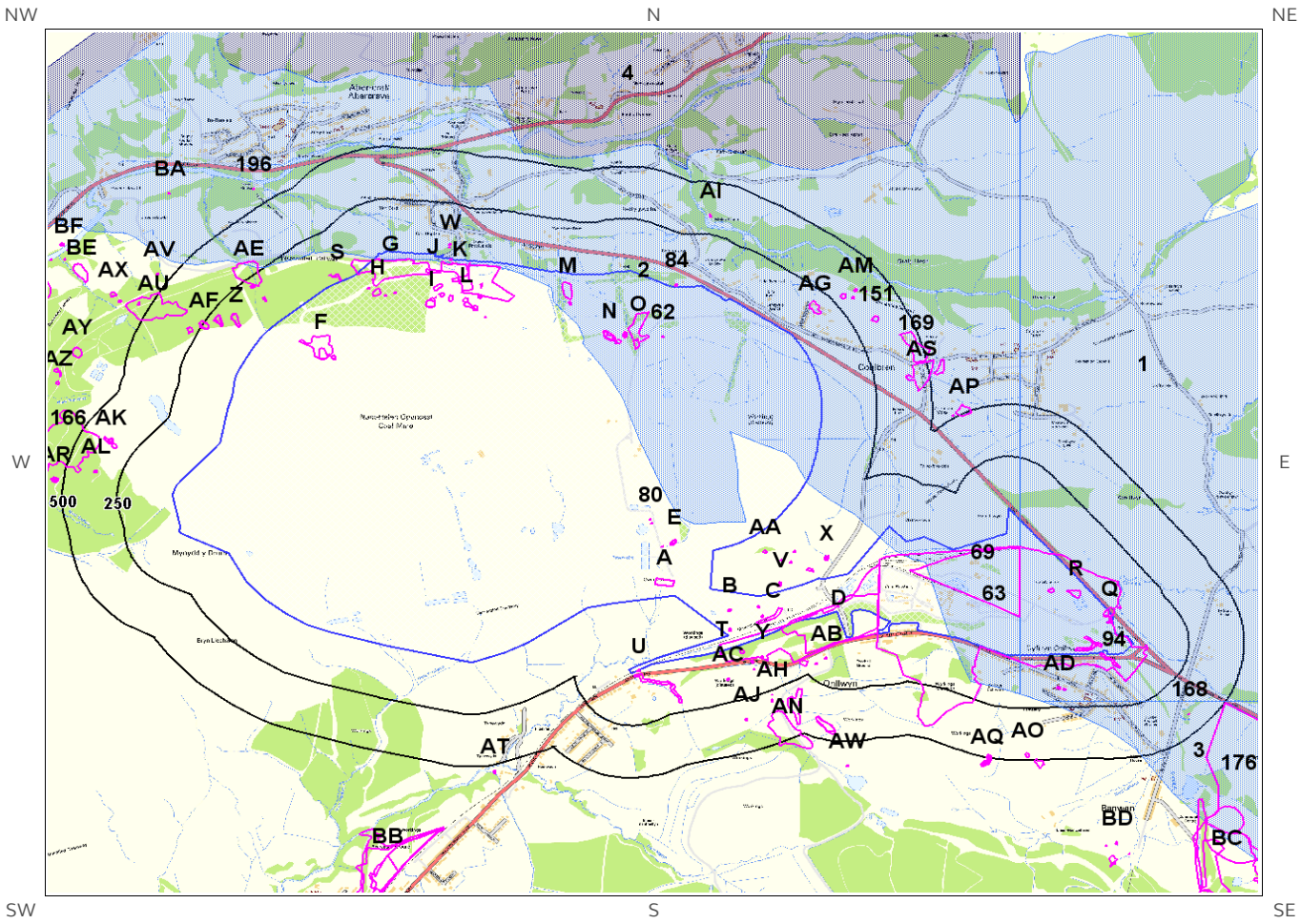
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1669DY	359.0	NW	281205 211862	Sandstone	Gwaun-y-clawdd	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1670EJ	362.0	NW	280880 211241	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1671EJ	366.0	NW	280850 211200	Coal, Surface Mined	Nant Helen Remainder Surface Coal Mine	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Inactive
Not shown	371.0	W	280806 211104	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1673FD	393.0	S	284134 209919	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1674	394.0	W	281050 211600	Coal, Surface Mined	Gwaunton OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1675FH	409.0	E	284498 211553	Ironstone	Pen-y-graig	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1676FE	413.0	SE	285760 209937	Coal, Deep	Coedcae	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1677DY	430.0	NW	281112 211845	Sandstone	Gwaun-ton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1678	435.0	E	284482 211717	Ironstone	Pen-y-graig	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1679FD	444.0	SE	284000 209895	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1680	471.0	W	280944 211480	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1681EP	483.0	NW	281175 212032	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1682FD	486.0	S	284142 209823	Coal, Deep	Onllwyn Level	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1683	489.0	NW	281005 211772	Sandstone	Gwaun-ton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
1684EN	501.0	S	282574 209687	Coal, Deep	Ty-newydd	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1685FF	515.0	N	284756 211398	Ironstone	Pen-y-graig	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1686EL	528.0	S	284839 209702	Coal, Deep	Blaen-Nantcellwen	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1687EL	528.0	S	285090 209690	Sandstone	Blaen-Nantcellwen	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1688FG	538.0	NW	281589 212442	Coal, Deep	Llwyn-Turnor	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	541.0	W	280623 211065	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1690FH	554.0	E	284640 211586	Ironstone	Pen-y-graig	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1691	555.0	W	280905 211688	Sandstone	Gwaun-ton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1692EO	558.0	NW	281007 211919	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1693	583.0	S	283916 209713	Sandstone	Onllwyn Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1694EQ	610.0	S	284215 209694	Coal, Deep	Onllwyn Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	616.0	W	280580 211200	Clay & Shale	Penrhos Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
1696ER	672.0	NW	280894 211951	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	673.0	W	280490 211069	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	703.0	NW	280623 211468	Ironstone	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	712.0	W	280737 211657	Ironstone	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	724.0	W	280473 210721	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	727.0	NW	280630 211514	Ironstone	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	730.0	W	280458 210768	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	745.0	W	280436 211169	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	757.0	NW	280628 211555	Ironstone	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	761.0	W	280686 211649	Sandstone	Gwaun-ton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	789.0	NW	280632 211606	Ironstone	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
1707ES	793.0	NW	281138 212429	Coal, Deep	Plas-y-ddol	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	831.0	NW	280470 211471	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	847.0	NW	280686 211935	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	859.0	W	280310 210842	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	865.0	SW	280469 210334	Ironstone	Blaen-nant-teg	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	870.0	W	280355 210572	Sandstone	Blaen-nant-teg	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	875.0	NW	280768 212136	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	878.0	NW	280730 212079	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	879.0	W	280281 210913	Ironstone	Hendre-ladis	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	882.0	W	280342 210572	Ironstone	Blaen-nant-teg	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	912.0	SW	280350 210460	Ironstone	Blaen-nant-teg	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	923.0	W	280579 211878	Coal, Deep	Little London	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	995.0	NW	280665 212197	Coal, Deep	Gwaun-ton	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	998.0	S	285416 209224	Coal, Deep	Pant-y-ddraenen	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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Site Outline

250
500
Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
5A	0.0	On Site	283390 210568	Unspecified Disused Level	1965
6A	0.0	On Site	283390 210568	Unspecified Disused Level	1987
7E	0.0	On Site	283429 210759	Old Coal Level	1901
8B	0.0	On Site	283683 210434	Unspecified Disused Level	1987
9B	0.0	On Site	283685 210341	Unspecified Disused Shaft	1987
10B	0.0	On Site	283686 210336	Unspecified Disused Level	1965
11C	0.0	On Site	283891 210408	Unspecified Disused Level	1987
12C	0.0	On Site	283891 210408	Unspecified Disused Level	1965
13C	0.0	On Site	283833 210404	Old Coal Pit	1901
14D	0.0	On Site	284139 210397	Colliery	1901
15C	0.0	On Site	283816 210446	Unspecified Old Shaft	1948
16D	0.0	On Site	284270 210478	Colliery	1948
17C	0.0	On Site	283841 210403	Unspecified Old Shaft	1948
18E	0.0	On Site	283378 210737	Old Coal Level	1948
19C	0.0	On Site	283814 210451	Unspecified Old Shaft	1903
20E	0.0	On Site	283425 210758	Coal Level	1903
21C	0.0	On Site	283834 210407	Unspecified Old Shaft	1903
22U	0.0	On Site	283271 210143	Old Coal Level	1903
23C	0.0	On Site	283834 210407	Old Coal Pit	1877
24E	0.0	On Site	283425 210758	Old Coal Level	1877

ID	Distance (m)	Direction	NGR	Details	Date
25F	0.0	On Site	281808 211693	Unspecified Disused Levels	1965
26F	0.0	On Site	281842 211662	Unspecified Old Levels	1903
27F	0.0	On Site	281868 211655	Old Coal Level	1877
28F	0.0	On Site	281888 211646	Unspecified Old Levels	1903
29F	0.0	On Site	281893 211637	Old Coal Level	1877
30G	0.0	On Site	282141 212051	Colliery	1948
31G	0.0	On Site	282141 212051	Colliery	1903
32G	0.0	On Site	282047 211976	Old Coal Level	1877
33H	0.0	On Site	282083 211958	Unspecified Disused Level	1965
34H	0.0	On Site	282124 211941	Unspecified Old Level	1948
35H	0.0	On Site	282168 211954	Old Coal Level	1877
36I	0.0	On Site	282328 211899	Unspecified Old Levels	1948
37J	0.0	On Site	282341 212059	Unspecified Mine	1965
38I	0.0	On Site	282328 211908	Unspecified Disused Levels	1965
39J	0.0	On Site	282362 211979	Unspecified Disused Levels	1965
40I	0.0	On Site	282352 211932	Coal Levels	1877
41I	0.0	On Site	282367 211948	Coal Levels	1877
42I	0.0	On Site	282382 211942	Unspecified Disused Levels	1965
43K	0.0	On Site	282478 212034	Colliery	1877
44I	0.0	On Site	282422 211928	Unspecified Disused Levels	1965
45K	0.0	On Site	282568 212004	Colliery	1948
46K	0.0	On Site	282568 212004	Colliery	1903
47L	0.0	On Site	282487 211918	Unspecified Old Levels	1903
48L	0.0	On Site	282506 211890	Old Coal Level	1877
49L	0.0	On Site	282531 211881	Unspecified Old Levels	1903
50L	0.0	On Site	282578 211838	Unspecified Old Level	1948
51M	0.0	On Site	282949 211962	Unspecified Disused Drift	1987
52M	0.0	On Site	282949 211962	Unspecified Disused Drift	1965
53N	0.0	On Site	283137 211748	Unspecified Disused Levels	1965

ID	Distance (m)	Direction	NGR	Details	Date
54N	0.0	On Site	283139 211746	Unspecified Old Levels	1903
55N	0.0	On Site	283161 211737	Unspecified Disused Levels	1987
56N	0.0	On Site	283168 211718	Old Coal Levels	1948
57N	0.0	On Site	283211 211754	Unspecified Disused Levels	1965
58N	0.0	On Site	283209 211740	Unspecified Old Level	1903
59N	0.0	On Site	283214 211752	Unspecified Disused Levels	1987
60O	0.0	On Site	283279 211732	Colliery	1948
61O	0.0	On Site	283263 211727	Unspecified Disused Drift	1987
62	0.0	On Site	283382 211742	Coal Shaft	1948
63	0.0	On Site	284964 210308	Colliery	1948
64P	0.0	On Site	285348 210272	Old Coal Level	1900
65P	0.0	On Site	285328 210258	Old Coal Pit	1903
66P	0.0	On Site	285402 210270	Old Coal Level	1903
67Q	0.0	On Site	285404 210409	Old Coal Level	1948
68Q	0.0	On Site	285391 210419	Unspecified Disused Level	1962
69	0.0	On Site	284751 210569	Opencast Workings	1987
70R	0.0	On Site	285244 210511	Old Coal Level	1903
71R	0.0	On Site	285142 210529	Old Coal Level	1900
72N	0.0	On Site	283183 211721	Air Shaft	1903
73M	0.0	On Site	282961 211903	Unspecified Drift	1948
74K	0.0	On Site	282560 211990	Unspecified Drift	1903
75L	0.0	On Site	282556 211936	Unspecified Drift	1903
76L	0.0	On Site	282552 211933	Unspecified Drift	1948
77K	0.0	On Site	282462 212011	Unspecified Drift	1948
78J	0.0	On Site	282421 212114	Air Shaft	1948
79J	0.0	On Site	282419 212112	Air Shaft	1903
80	0.0	On Site	283324 210868	Air Shaft	1948
81E	0.0	On Site	283331 210850	Air Shaft	1903
82P	4.0	S	285370 210223	Old Coal Level	1903

ID	Distance (m)	Direction	NGR	Details	Date
83P	5.0	S	285368 210223	Old Coal Pit	1900
84	5.0	N	283442 211991	Unspecified Disused Drift	1987
85P	6.0	S	285424 210190	Old Coal Level	1900
86S	7.0	NW	281890 212030	Old Coal Level	1877
87S	7.0	NW	281890 212030	Old Coal Level	1903
88T	9.0	S	283648 210226	Old Coal Level	1948
89T	9.0	S	283648 210226	Old Coal Level	1903
90U	10.0	SE	283424 210059	Old Coal Level	1901
91D	11.0	W	284186 210339	Air Shaft	1948
92T	20.0	S	283741 210237	Old Coal Level	1901
93V	20.0	N	283912 210558	Unspecified Old Level	1948
94	37.0	S	285429 210179	Old Coal Level	1903
95V	37.0	N	284050 210625	Old Coal Pit	1877
96W	41.0	NE	282415 212173	Unspecified Old Level	1903
97Q	46.0	NE	285454 210446	Unspecified Disused Level	1977
98S	47.0	NW	281873 212040	Old Coal Level	1948
99W	53.0	NE	282417 212185	Old Coal Level	1877
100P	58.0	S	285351 210164	Old Coal Level	1903
101AA	83.0	SE	283845 210715	Unspecified Old Shafts	1903
102X	84.0	N	284123 210683	Disused Old Coal Pit	1877
103X	84.0	N	284121 210677	Old Coal Pit	1901
104X	85.0	N	284124 210677	Unspecified Old Shaft	1903
105Y	85.0	S	283832 210210	Old Trial Drift	1948
106Y	86.0	S	283784 210190	Unspecified Drift	1876
107T	90.0	S	283787 210186	Unspecified Drift	1877
108X	94.0	N	284128 210689	Old Coal Shaft	1948
109Z	106.0	NW	281445 211821	Unspecified Old Levels	1903
110Z	106.0	NW	281445 211821	Old Ironstone Levels	1948
111Z	109.0	NW	281446 211821	Old Ironstone Level	1877

ID	Distance (m)	Direction	NGR	Details	Date
112Z	112.0	NW	281577 211923	Unspecified Drifts	1948
113AA	114.0	N	283961 210663	Old Coal Pit	1901
114AA	114.0	N	283961 210663	Old Coal Shafts	1948
115AA	114.0	N	283961 210663	Unspecified Old Shafts	1903
116Y	130.0	S	283796 210150	Air Shaft	1877
117AA	132.0	N	283921 210673	Old Coal Shafts	1948
118AB	134.0	SW	284121 210205	Old Coal Pit	1948
119AB	134.0	SW	284121 210205	Old Coal Pit	1903
120AB	135.0	SW	284119 210203	Old Coal Pit	1901
121AC	136.0	S	283677 210103	Air Shaft	1876
122AC	137.0	S	283853 210162	Air Shaft	1876
123AC	140.0	S	283675 210100	Air Shaft	1877
124AG	145.0	NE	284074 211883	Old Ironstone Quarry	1877
125AD	154.0	S	285177 210061	Old Coal Level	1903
126AA	158.0	N	283979 210717	Old Coal Shafts	1948
127AD	164.0	S	285203 210054	Old Coal Level	1900
128AD	165.0	S	285203 210053	Old Coal Level	1903
129Z	172.0	NW	281369 211820	Unspecified Old Levels	1903
130Z	172.0	NW	281369 211820	Old Ironstone Levels	1948
131Z	176.0	NW	281364 211820	Old Ironstone Level	1877
132AB	176.0	SE	284020 210182	Old Coal Level	1903
133AB	184.0	SW	284077 210176	Old Coal Level	1948
134AE	192.0	NW	281505 212047	Colliery	1903
135AE	197.0	NW	281522 211984	Unspecified Drifts	1948
136Z	220.0	NW	281301 211801	Old Ironstone Levels	1948
137AF	222.0	NW	281302 211799	Old Ironstone Level	1877
138AH	271.0	S	283878 210029	Old Coal Drift	1948
139AF	272.0	NW	281236 211775	Old Ironstone Level	1948
140AF	280.0	NW	281234 211764	Unspecified Old Level	1903

ID	Distance (m)	Direction	NGR	Details	Date
141AG	290.0	NE	284201 211938	Old Ironstone Level	1948
142AH	294.0	SE	283981 209973	Old Coal Drift	1901
143AH	295.0	S	283877 210002	Air Shaft	1876
144AH	298.0	S	283877 210000	Air Shaft	1877
145AH	319.0	S	283923 209995	Old Coal Drift	1903
146AG	325.0	NE	284245 211932	Old Ironstone Level	1877
147AK	326.0	NW	280856 211254	Disused Old Ironstone Level	1877
148AI	330.0	N	283598 212323	Unspecified Melin	1903
149AI	330.0	N	283598 212323	Unspecified Melin	1877
150AI	330.0	N	283598 212323	Unspecified Melin	1948
151	339.0	NE	284345 211829	Old Ironstone Quarry	1877
152AJ	343.0	S	283760 209911	Air Shaft	1876
153AU	343.0	NW	281083 211888	Colliery	1877
154AJ	345.0	S	283760 209909	Air Shaft	1877
155AN	355.0	S	283959 209863	Old Coal Level	1901
156AM	355.0	NE	284255 211966	Unspecified Disused Level	1987
157AK	356.0	NW	280876 211246	Unspecified Old Level	1903
158AK	358.0	NW	280877 211248	Disused Old Ironstone Level	1901
159AL	361.0	W	280810 211098	Unspecified Disused Shaft	1965
160AL	366.0	W	280805 211095	Old Ironstone Pit	1901
161AL	367.0	W	280807 211101	Unspecified Old Shaft	1903
162AL	367.0	W	280807 211101	Old Ironstone Shaft	1948
163AM	388.0	NE	284301 211959	Unspecified Old Level	1903
164AS	395.0	E	284548 211557	Old Ironstone Quarry	1877
165AN	400.0	S	284121 209883	Old Coal Level	1948
166	400.0	NW	280585 211222	Disused Old Ironstone Level	1877
167AN	403.0	S	284118 209888	Old Coal Level	1903
168	414.0	SE	285766 209936	Old Coal Level	1948
169	425.0	E	284523 211693	Old Ironstone Quarry	1877

ID	Distance (m)	Direction	NGR	Details	Date
170AO	466.0	S	285035 209739	Old Coal Level	1948
171AO	485.0	S	284867 209719	Old Coal Level	1948
172AQ	487.0	S	284859 209713	Old Coal Level	1900
173AO	489.0	S	284863 209724	Old Coal Level	1903
174AP	491.0	N	284747 211392	Old Ironstone Quarry	1877
175AO	498.0	S	285088 209698	Old Coal Level	1948
176	501.0	SE	286806 209361	Opencast Workings	1981
177AP	510.0	NW	284697 211365	Air Shaft	1948
178AQ	518.0	S	284844 209697	Old Coal Level	1903
179AR	522.0	W	280626 211061	Unspecified Old Level	1903
180AR	522.0	W	280626 211061	Old Ironstone Levels	1948
181AR	522.0	W	280626 211061	Old Ironstone Level	1877
182AS	522.0	E	284635 211598	Old Ironstone Quarry	1877
183AR	525.0	W	280620 211058	Old Ironstone Level	1901
184AT	529.0	S	282619 209661	Old Coal Pit	1901
185AT	529.0	S	282619 209661	Old Coal Pit	1948
186AT	529.0	S	282619 209661	Old Coal Pit	1903
187AT	534.0	S	282622 209659	Coal Pit	1876
188AT	536.0	S	282620 209656	Coal Pit	1877
189AU	545.0	NW	281008 211899	Old Coal Shaft	1948
190AU	547.0	NW	281004 211899	Unspecified Old Shaft	1903
191AU	549.0	NW	281008 211905	Old Coal Shaft	1877
192AV	551.0	NW	281093 212043	Unspecified Old Level	1903
193AV	551.0	NW	281093 212043	Old Coal Level	1948
194AV	554.0	NW	281090 212043	Old Coal Level	1877
Not shown	571.0	W	280573 211010	Old Ironstone Levels	1948
196	576.0	NW	281525 212450	Air Shaft	1877
Not shown	584.0	W	280492 211070	Disused Ironstone Level	1877
Not shown	598.0	W	280557 211002	Air Shaft	1948

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	598.0	W	280557 211002	Air Shaft	1903
Not shown	598.0	W	280557 211002	Air Shaft	1877
201AW	612.0	S	284217 209688	Old Coal Pit	1901
202AW	613.0	S	284220 209688	Old Coal Pit	1948
203AW	613.0	S	284220 209688	Old Coal Pit	1903
Not shown	613.0	W	280506 211079	Disused Ironstone Level	1901
205AU	624.0	NW	280918 211914	Unspecified Disused Level	1987
206AX	658.0	NW	280891 211946	Unspecified Disused Level	1965
Not shown	662.0	W	280488 211030	Unspecified Old Level	1903
208AX	669.0	NW	280885 211936	Unspecified Old Level	1903
209AX	672.0	NW	280884 211938	Old Coal Level	1948
Not shown	703.0	W	280488 210727	Unspecified Old Shaft	1903
Not shown	703.0	W	280488 210727	Old Ironstone Level	1948
Not shown	703.0	W	280488 210727	Old Ironstone Level	1877
213AY	704.0	W	280724 211670	Old Ironstone Level	1877
Not shown	707.0	W	280485 210722	Disused Ironstone Pit	1901
Not shown	709.0	W	280477 210713	Disused Ironstone Pit	1877
216AZ	720.0	NW	280637 211522	Old Ironstone Level	1877
Not shown	725.0	W	280459 210763	Unspecified Disused Level	1987
218AY	737.0	NW	280650 211567	Unspecified Level	1877
Not shown	743.0	W	280384 210823	Disused Ironstone Level	1877
Not shown	754.0	W	280396 210846	Old Ironstone Level	1948
Not shown	755.0	W	280408 211164	Disused Old Ironstone Level	1901
Not shown	755.0	W	280407 211164	Unspecified Old Level	1903
223AZ	764.0	NW	280631 211582	Old Ironstone Level	1877
224BC	782.0	SE	285954 209248	Colliery	1948
225BA	788.0	NW	281143 212430	Old Coal Shaft	1948
226BA	788.0	NW	281143 212430	Unspecified Shaft	1903
227BB	801.0	S	282186 209202	Colliery	1948

ID	Distance (m)	Direction	NGR	Details	Date
228BB	806.0	S	282091 209140	Colliery	1901
229BE	810.0	NW	280740 212048	Unspecified Disused Level	1987
230BB	811.0	S	282134 209184	Unspecified Mine	1988
231BB	811.0	S	282134 209184	Unspecified Mine	1964
Not shown	814.0	NW	280440 211586	Old Coal Level	1877
Not shown	839.0	W	280318 210838	Unspecified Disused Level	1965
Not shown	840.0	W	280312 210836	Unspecified Old Level	1903
Not shown	845.0	W	280307 210830	Disused Ironstone Level	1901
Not shown	858.0	SW	280476 210329	Trial Shaft	1948
Not shown	861.0	W	280355 210562	Unspecified Old Shaft	1903
Not shown	864.0	SW	280469 210327	Unspecified Disused Shaft	1965
Not shown	864.0	SW	280469 210327	Unspecified Disused Shaft	1987
240BC	864.0	SE	285949 209246	Unspecified Mine	1980
241BC	864.0	SE	285949 209246	Unspecified Mine	1964
Not shown	865.0	W	280284 210911	Unspecified Disused Level	1965
Not shown	866.0	W	280279 210907	Unspecified Old Level	1903
Not shown	866.0	W	280279 210907	Old Ironstone Level	1948
Not shown	866.0	W	280279 210907	Ironstone Level	1877
Not shown	868.0	SW	280471 210323	Trial Shaft	1903
Not shown	869.0	W	280357 210562	Disused Ironstone Pit	1901
Not shown	870.0	W	280351 210566	Old Ironstone Shaft	1948
Not shown	873.0	W	280269 210904	Ironstone Level	1901
Not shown	874.0	W	280348 210567	Unspecified Disused Shaft	1987
Not shown	874.0	W	280348 210567	Unspecified Disused Shaft	1965
Not shown	876.0	W	280345 210570	Disused Ironstone Pit	1877
Not shown	880.0	NW	280425 211497	Unspecified Old Shaft	1903
Not shown	883.0	NW	280422 211495	Old Coal Pit	1877
Not shown	884.0	SW	280378 210458	Trial Shaft	1948
Not shown	888.0	SW	280371 210458	Unspecified Disused Shaft	1965

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	888.0	SW	280371 210458	Unspecified Disused Shaft	1987
Not shown	894.0	SW	280370 210452	Trial Shaft	1903
259BD	899.0	S	285438 209317	Air Shaft	1903
Not shown	905.0	W	280312 211317	Old Coal Level	1877
Not shown	907.0	W	280308 211313	Old Coal Level	1901
262BD	913.0	S	285393 209306	Air Shaft	1903
263BD	915.0	S	285393 209305	Air Shaft	1900
264BE	927.0	NW	280577 211967	Unspecified Old Level	1903
265BE	927.0	NW	280577 211967	Old Coal Level	1948
266BE	945.0	NW	280670 212114	Old Coal Levels	1948
267BF	952.0	NW	280686 212157	Unspecified Old Levels	1903
268BD	955.0	S	285496 209269	Air Shaft	1903
269BD	966.0	S	285424 209231	Unspecified Level	1876
270BC	970.0	S	285887 209168	Disused Colliery	1900
Not shown	981.0	NW	280256 211438	Old Coal Level	1877
272BB	982.0	S	282119 209172	Coal Pit	1877
273BF	985.0	NW	280664 212182	Unspecified Old Shaft	1903
Not shown	985.0	NW	280251 211438	Old Coal Level	1901
275BF	986.0	NW	280666 212186	Old Coal Shaft	1877
276BF	988.0	NW	280657 212184	Unspecified Disused Shaft	1987
277BE	997.0	NW	280608 212112	Unspecified Old Levels	1903
Not shown	998.0	W	280230 210538	Air Shaft	1877
279BD	999.0	S	285430 209220	Unspecified Level	1903
Not shown	999.0	W	280159 211138	Disused Air Shaft	1965
Not shown	999.0	W	280159 211138	Disused Air Shaft	1987
282BD	999.0	S	285430 209221	Unspecified Level	1900

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The site lies in or in proximity to the coal mining reporting area as defined by the Coal Authority

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	0.0	On Site	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
3	219.0	S	Not available	Iron Ore (Bedded)	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
4	535.0	N	Not available	Vein Mineral	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

This dataset provides information on metalliferous mining areas in Cornwall/Devon and is derived from records held by Mining Searches UK.

Are there any Cornwall and Devon Metalliferous Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

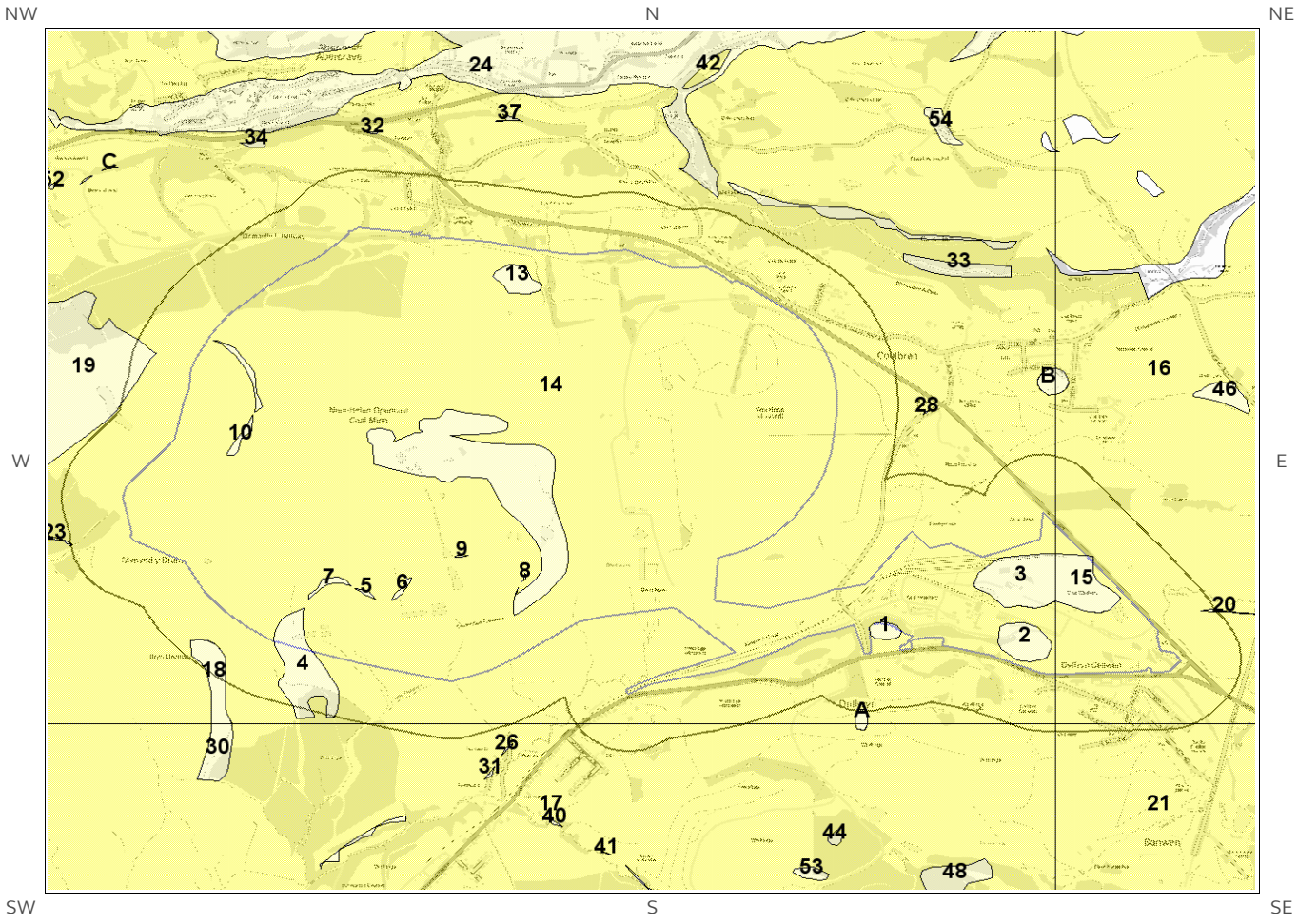
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

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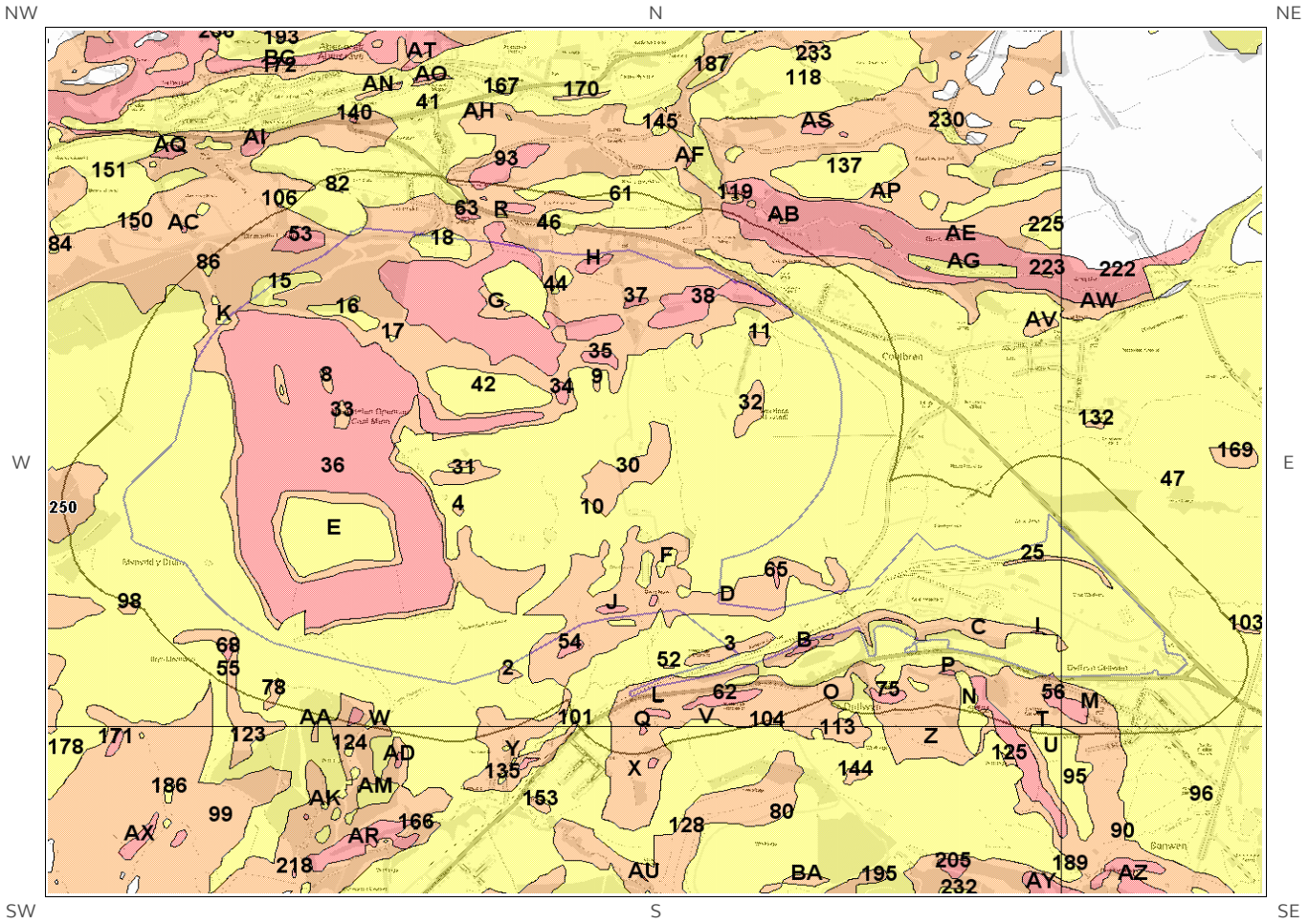
6.2 Landslides map



Landslides Legend

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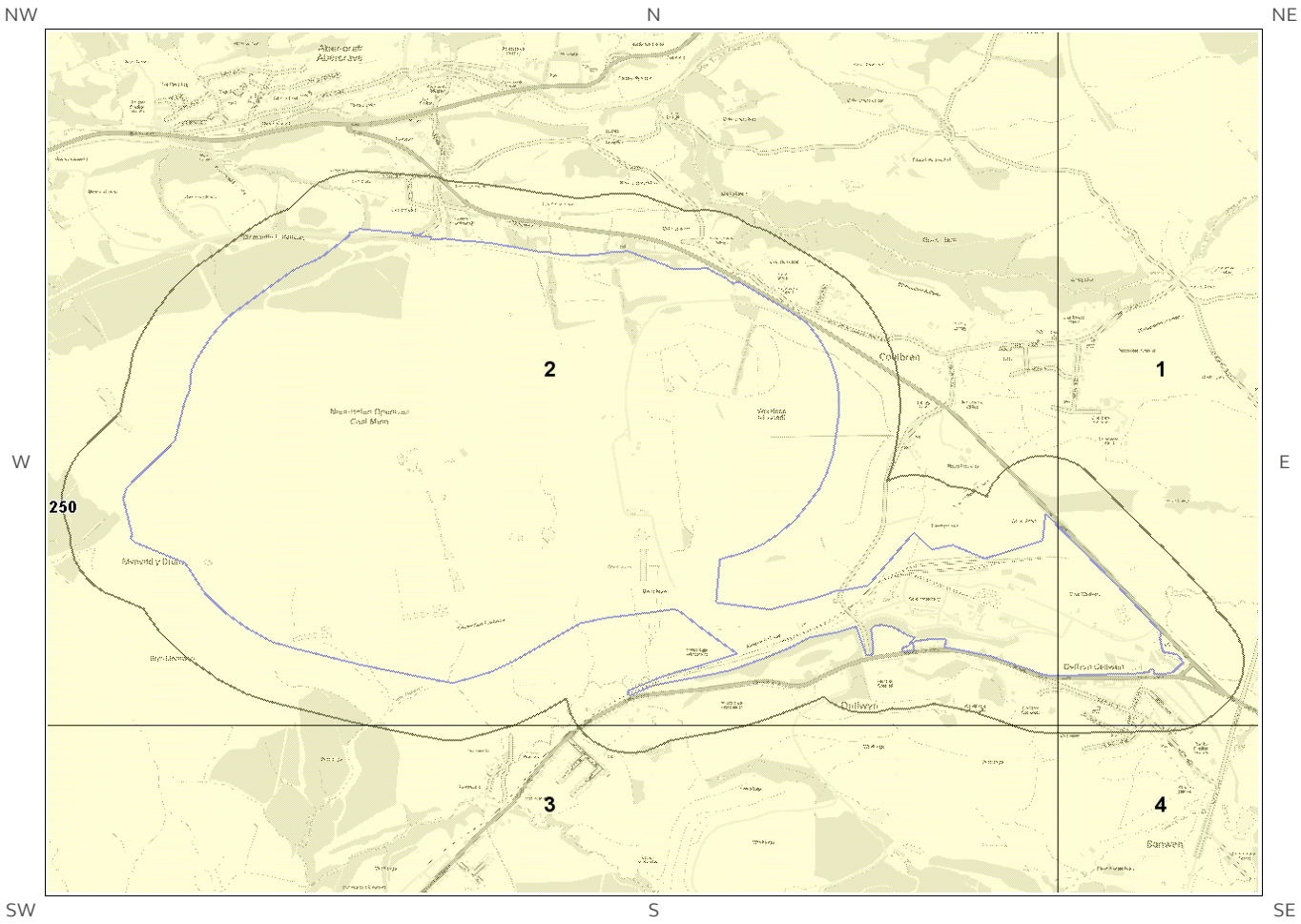
Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6.3 Ground Dissolution of Soluble Rocks map



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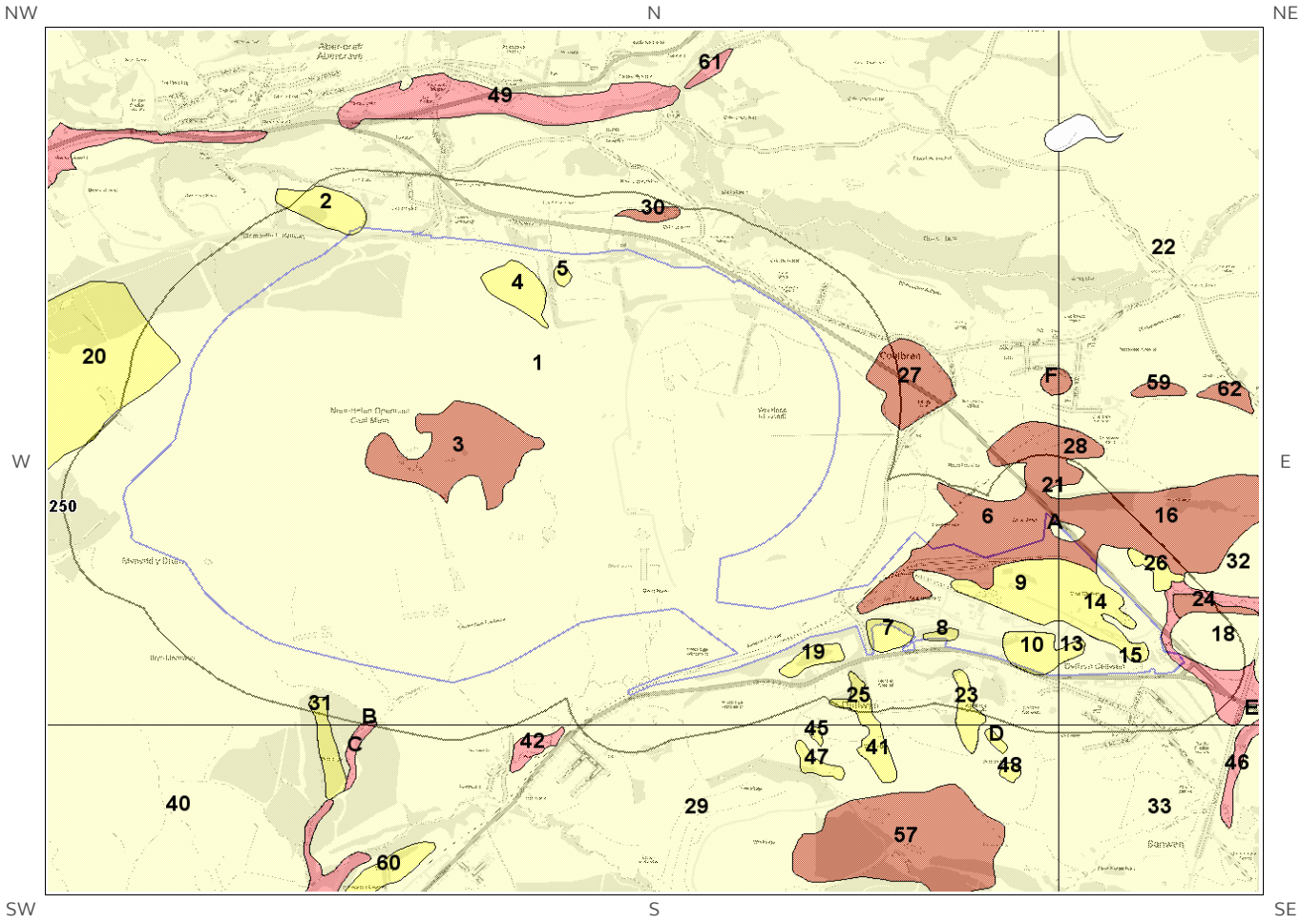
Ground Dissolution Soluble Rocks Legend



6.4 Compressible Deposits map



Compressible Deposits Legend

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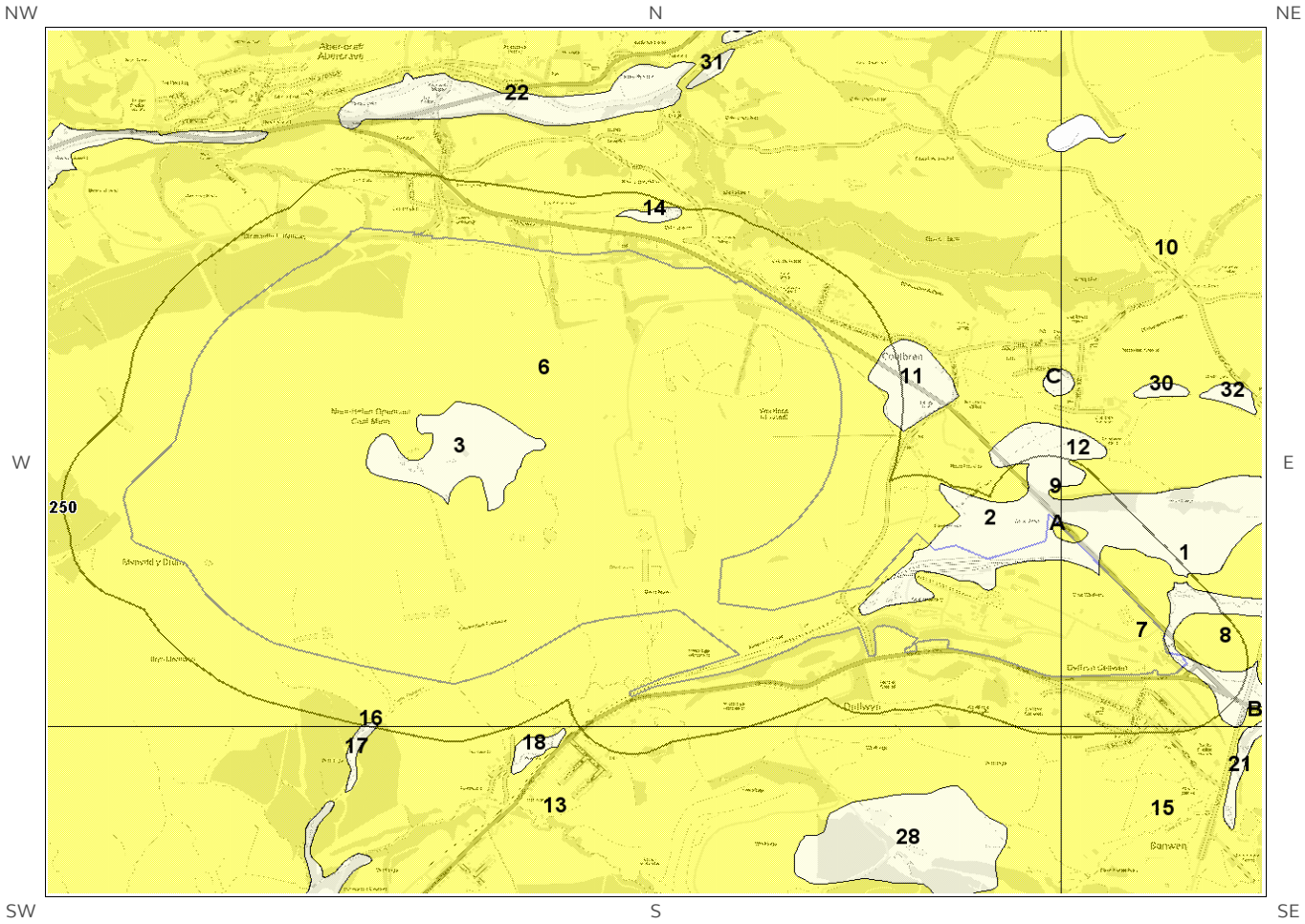
6.5 Collapsible Deposits map



Collapsible Deposits Legend

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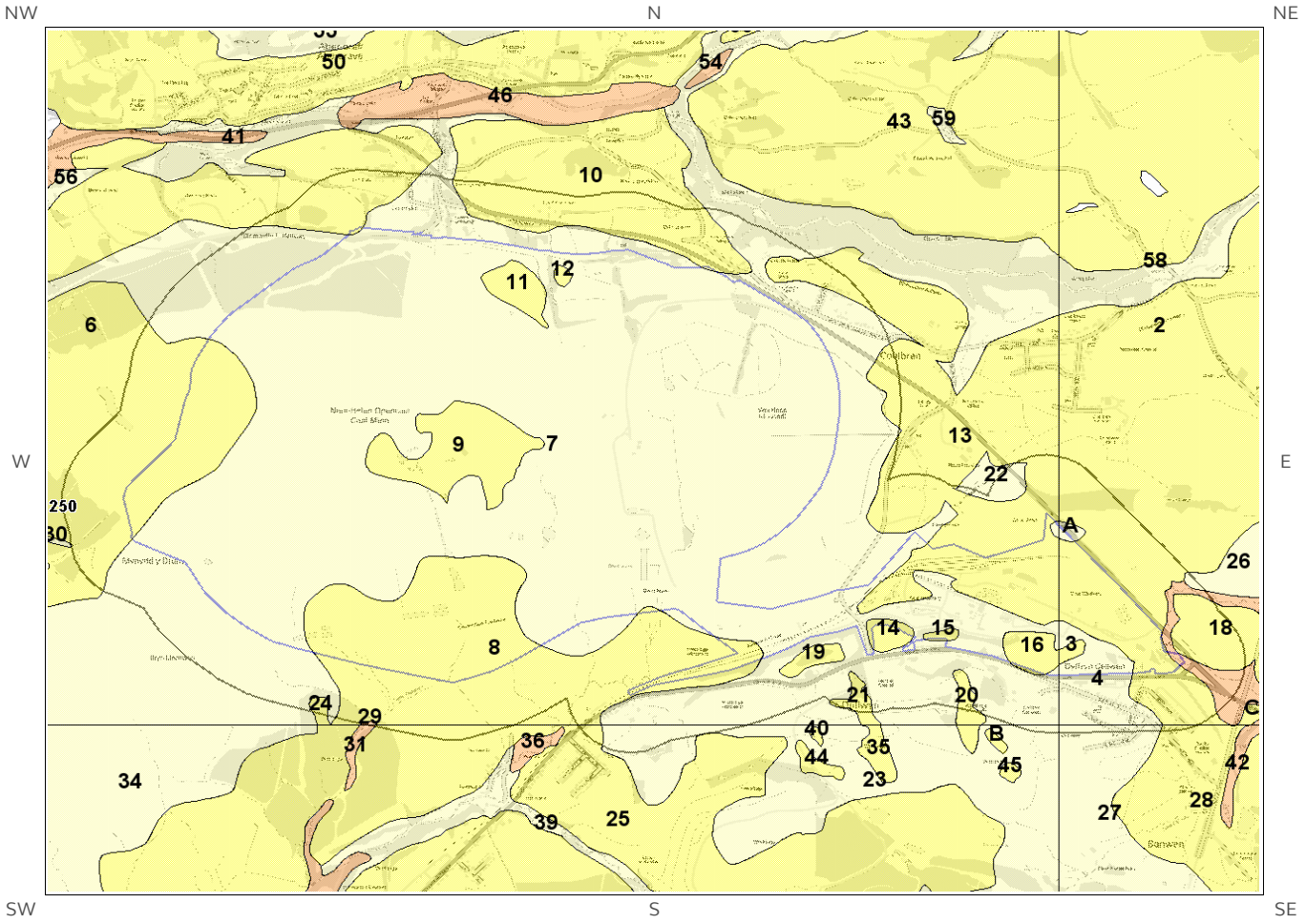
6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? High

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
3	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
4	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
5	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

* This includes an automatically generated 50m buffer zone around the site

ID	Distance (m)	Direction	Hazard Rating	Details
6	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
7	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
8	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
9	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
10	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
11	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
12	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
13	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
14	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

ID	Distance (m)	Direction	Hazard Rating	Details
15	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
16	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1O	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
2	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
3	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
4	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
5C	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

ID	Distance (m)	Direction	Hazard Rating	Details
6D	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
7A	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
8	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
9	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
10	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
11	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
12G	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
13K	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

ID	Distance (m)	Direction	Hazard Rating	Details
14A	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
15	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
16	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
17	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
18	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
19B	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
20B	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.

ID	Distance (m)	Direction	Hazard Rating	Details
21I	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
22C	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
23J	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
24D	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
25	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

ID	Distance (m)	Direction	Hazard Rating	Details
26E	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
27F	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
28E	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
29F	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
30	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
31	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
32	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
33	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

ID	Distance (m)	Direction	Hazard Rating	Details
34	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
35	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
36	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
37	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.

ID	Distance (m)	Direction	Hazard Rating	Details
38	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
39H	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
40G	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
41	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
42	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
43G	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

ID	Distance (m)	Direction	Hazard Rating	Details
44	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
45H	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
46	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
47	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
48I	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
49	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
50J	5.0	S	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
51M	20.0	S	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

ID	Distance (m)	Direction	Hazard Rating	Details
52	27.0	N	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
53	36.0	NW	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
54	43.0	SE	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
55	47.0	SW	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
2	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
3	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.
4	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
5	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
6	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.
7	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
8	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
9	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
10	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
11A	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
12A	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

ID	Distance (m)	Direction	Hazard Rating	Details
13	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
14	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
15	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
16	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.
17	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.
18	4.0	NE	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
19	36.0	SE	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
3	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
4A	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
5A	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

ID	Distance (m)	Direction	Hazard Rating	Details
6	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
7	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
8	4.0	NE	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

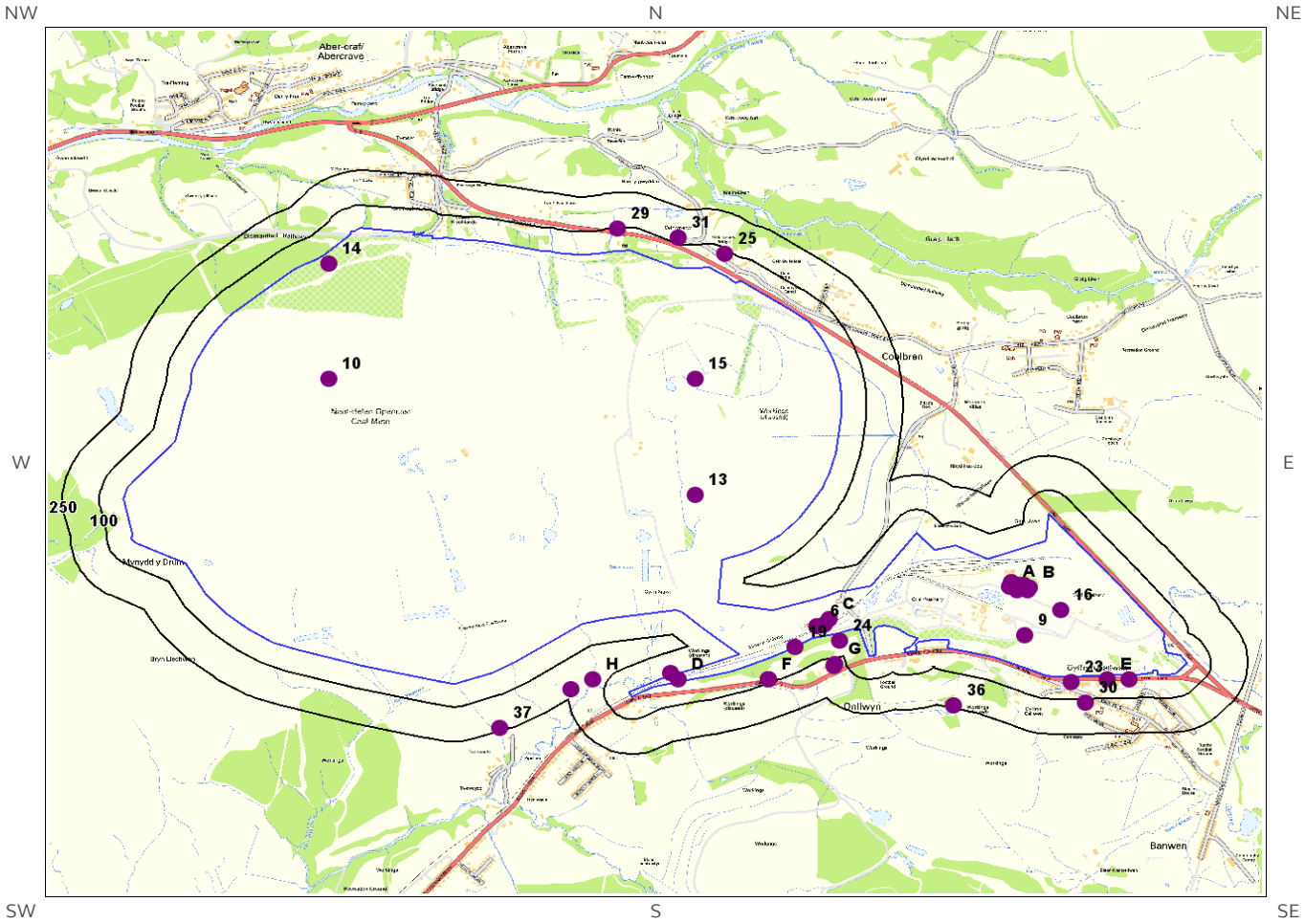
6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1A	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
3	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
4	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
5	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.
6	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
7	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
8	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

ID	Distance (m)	Direction	Hazard Rating	Details
9	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
10	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
11	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
12	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
13	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
14	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
15	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
16	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
17A	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
18	4.0	NE	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
19	36.0	SE	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

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Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 37

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1D	0.0	On Site	283430 210200	SN81SW11	15.85	YSTRADGYNLAIS-ONLLWYN ROAD 41
2C	0.0	On Site	284050 210460	SN81SW39	1.5	NANT HELEN O C C S TP3
3B	0.0	On Site	284869 210600	SN81SW35	22	ONLLWYN 7
4A	0.0	On Site	284787 210602	SN81SW30	30	ONLLWYN 2
5A	0.0	On Site	284813 210603	SN81SW32	24	ONLLWYN 4
6	0.0	On Site	284000 210430	SN81SW37	1.9	NANT HELEN O C C S TP1
7A	0.0	On Site	284795 210621	SN81SW29	25.55	ONLLWYN 1
8B	0.0	On Site	284824 210610	SN81SW33	24	ONLLWYN 5
9	0.0	On Site	284850 210390	SN81SW19	45.11	ONLLWYN TIP. ON10
10	0.0	On Site	282000 211500	SN81SW2	Not Available	ABERCRAVE, 579
11C	0.0	On Site	284030 210440	SN81SW38	2	NANT HELEN O C C S TP2
12B	0.0	On Site	284862 210586	SN81SW36	23	ONLLWYN 8
13	0.0	On Site	283500 211000	SN81SW1	Not Available	ONLLWYN, O/C SITE. 070402
14	0.0	On Site	282000 212000	SN81SW28	Not Available	ABERCRAVE & INTERNATIONAL COLLIERY
15	0.0	On Site	283500 211500	SN81SW5	Not Available	CEFN BYRLE, 880
16	0.0	On Site	285000 210500	SN81SE1	Not Available	LLWYND PCA, 547
17A	0.0	On Site	284845 210609	SN81SW34	24	ONLLWYN 6
18A	0.0	On Site	284818 210585	SN81SW31	24	ONLLWYN 3
19	2.0	SE	283910 210340	SN81SW20	24.38	ONLLWYN TIP. ON11
20D	10.0	N	283400 210230	SN81SW10	14.63	YSTRADGYNLAIS-ONLLWYN ROAD 40
21E	21.0	S	285190 210200	SN81SE5	4	DYFFRYN CELLWEN NEATH L2
22E	23.0	S	285280 210200	SN81SE6	4	DYFFRYN CELLWEN NEATH L3

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
23	27.0	S	285040 210190	SN81SE4	5	DYFFRYN CELLWEN NEATH L1
24	31.0	S	284090 210370	SN81SW17	23.16	ONLLWYN TIP. ON7
25	78.0	NE	283620 212040	SN81SW42	Not Available	COELBEREN SEWER RELIEF TP 3
26F	86.0	S	283800 210200	SN81SW43	Not Available	DRYM PIT ONLLWYN
27F	86.0	S	283800 210200	SN81SW46	Not Available	DRYM TRIAL PIT ONLLWYN
28F	86.0	S	283800 210200	SN81SW47	Not Available	CROSS MEASURE DRIFT, ONLLWYN NO.1 COLLIERY
29	93.0	N	283180 212150	SN81SW40	Not Available	COELBEREN SEWER RELIEF TP 1
30	119.0	S	285100 210100	SN81SE2	Not Available	CELLWN, 404
31	121.0	N	283430 212110	SN81SW41	Not Available	COELBEREN SEWER RELIEF TP 2
32G	129.0	S	284073 210268	SN81SW12	24.38	ONLLWYN TIP. ON1
33G	137.0	S	284070 210260	SN81SW13	9.14	ONLLWYN TIP. ON1A
34H	157.0	W	283080 210200	SN81SW9	7.62	YSTRADGYNLAIS-ONLLWYN ROAD 39
35H	218.0	SE	282990 210160	SN81SW8	7.62	YSTRADGYNLAIS-ONLLWYN ROAD 38
36	239.0	S	284560 210090	SN81SW16	15.54	ONLLWYN TIP. ON4
37	240.0	S	282700 209990	SN80NW29	7.77	YSTRADGYNLAIS-ONLLWYN RD 37

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1D: scans.bgs.ac.uk/sobi_scans/boreholes/258497
#2C: scans.bgs.ac.uk/sobi_scans/boreholes/258525
#3B: scans.bgs.ac.uk/sobi_scans/boreholes/258521
#4A: scans.bgs.ac.uk/sobi_scans/boreholes/258516
#5A: scans.bgs.ac.uk/sobi_scans/boreholes/258518
#6: scans.bgs.ac.uk/sobi_scans/boreholes/258523
#7A: scans.bgs.ac.uk/sobi_scans/boreholes/258515
#8B: scans.bgs.ac.uk/sobi_scans/boreholes/258519
#9: scans.bgs.ac.uk/sobi_scans/boreholes/258505
#10: scans.bgs.ac.uk/sobi_scans/boreholes/258488
#11C: scans.bgs.ac.uk/sobi_scans/boreholes/258524
#12B: scans.bgs.ac.uk/sobi_scans/boreholes/258522
#13: scans.bgs.ac.uk/sobi_scans/boreholes/258487
#14: scans.bgs.ac.uk/sobi_scans/boreholes/258514
#15: scans.bgs.ac.uk/sobi_scans/boreholes/258491
#16: scans.bgs.ac.uk/sobi_scans/boreholes/258479
#17A: scans.bgs.ac.uk/sobi_scans/boreholes/258520
#18A: scans.bgs.ac.uk/sobi_scans/boreholes/258517
#19: scans.bgs.ac.uk/sobi_scans/boreholes/258506
#20D: scans.bgs.ac.uk/sobi_scans/boreholes/258496
#21E: scans.bgs.ac.uk/sobi_scans/boreholes/258483
#22E: scans.bgs.ac.uk/sobi_scans/boreholes/258484
#23: scans.bgs.ac.uk/sobi_scans/boreholes/258482
#24: scans.bgs.ac.uk/sobi_scans/boreholes/258503
#26F: scans.bgs.ac.uk/sobi_scans/boreholes/258529
#27F: scans.bgs.ac.uk/sobi_scans/boreholes/258532
#28F: scans.bgs.ac.uk/sobi_scans/boreholes/258533
#30: scans.bgs.ac.uk/sobi_scans/boreholes/258480
#32G: scans.bgs.ac.uk/sobi_scans/boreholes/258498
#33G: scans.bgs.ac.uk/sobi_scans/boreholes/258499
#34H: scans.bgs.ac.uk/sobi_scans/boreholes/258495
#35H: scans.bgs.ac.uk/sobi_scans/boreholes/258494
#36: scans.bgs.ac.uk/sobi_scans/boreholes/258502
#37: scans.bgs.ac.uk/sobi_scans/boreholes/258113

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary: 142

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

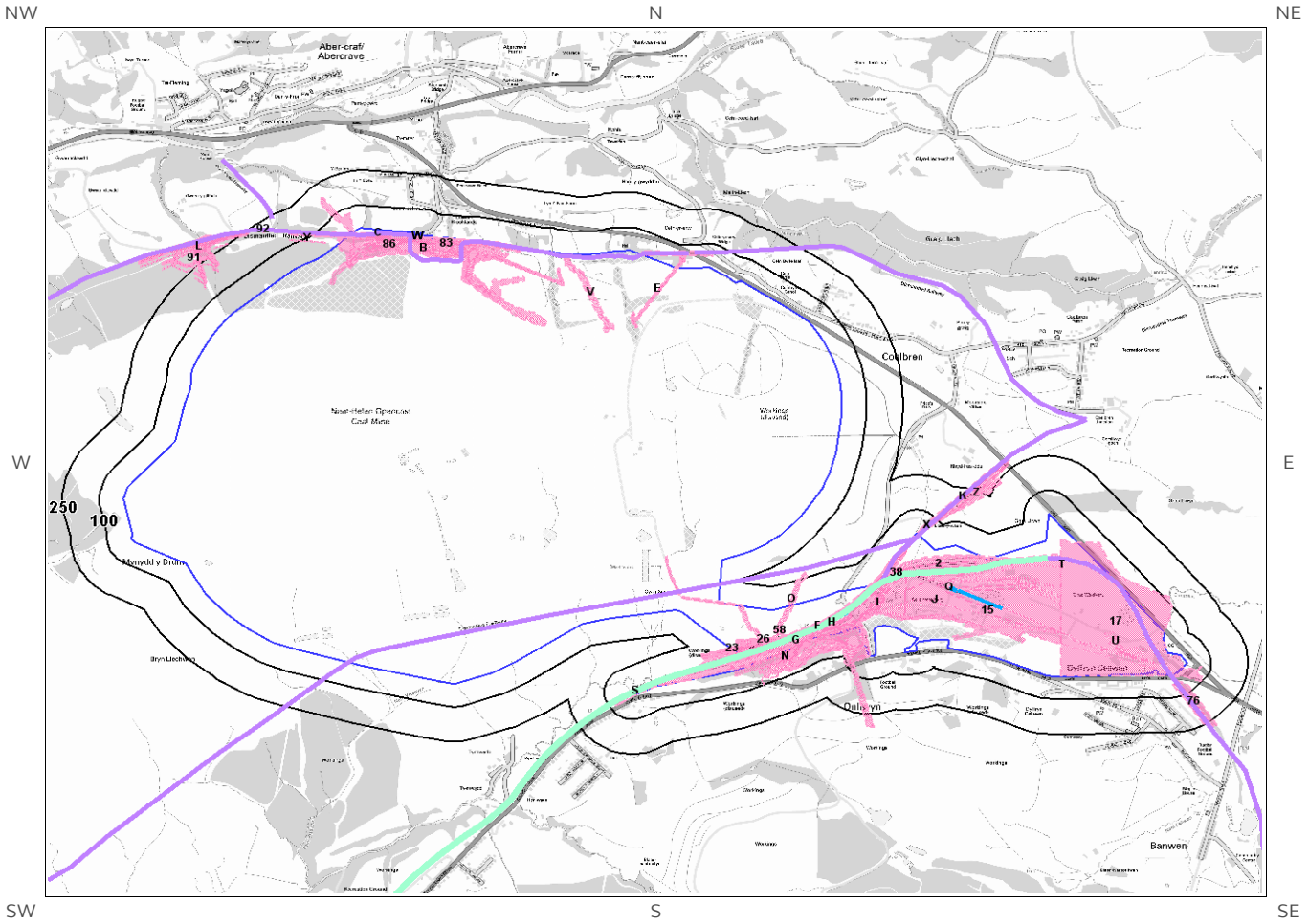
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
1.0	SE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
4.0	NE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
7.0	NE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
8.0	SE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
10.0	N	Sediment	35 - 45 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
10.0	NW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
11.0	SE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	NE	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
14.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
16.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
16.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
20.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
47.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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- Site Outline
- Search Buffers (m) — 250 — 500
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- High Speed 2 Revised Proposed Route
- Crossrail 1
- Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1K	0	On Site	284576 210960	Railway Sidings	1921
2	0	On Site	284430 210683	Railway Sidings	1921
3A	0	On Site	282203 212067	Railway Sidings	1921
4B	0	On Site	282086 211994	Railway Sidings	1921
5A	0	On Site	282130 212064	Railway Sidings	1914
6B	0	On Site	282570 211973	Railway Sidings	1948

ID	Distance (m)	Direction	NGR	Details	Date
7B	0	On Site	282096 212030	Railway Sidings	1903
8C	0	On Site	282184 212125	Railway Sidings	1921
9C	0	On Site	282193 212121	Railway Sidings	1914
10W	0	On Site	282374 212107	Railway Sidings	1877
11D	0	On Site	282592 211920	Railway Sidings	1965
12D	0	On Site	282562 211966	Tramway Sidings	1921
13	0	On Site	282564 211961	Tramway Sidings	1914
14V	0	On Site	283067 211864	Tramway Sidings	1903
15	0	On Site	284385 210466	Railway Sidings	1948
16U	0	On Site	285233 210356	Railway Sidings	1977
17	0	On Site	285289 210506	Railway Sidings	1962
18E	0	On Site	283353 211886	Tramway Sidings	1921
19E	0	On Site	283349 211880	Tramway Sidings	1914
20	0	On Site	283357 211892	Tramway Sidings	1921
21R	0	On Site	283553 210544	Tramway Sidings	1903
22P	0	On Site	283571 210272	Railway Sidings	1921
23	0	On Site	283646 210326	Railway Sidings	1921
24F	0	On Site	284042 210395	Railway Sidings	1948
25O	0	On Site	283894 210537	Tramway Sidings	1903
26	0	On Site	283783 210366	Railway Sidings	1921
27F	0	On Site	284179 210511	Railway Sidings	1914
28F	0	On Site	284179 210511	Railway Sidings	1914
29G	0	On Site	283803 210354	Railway Sidings	1921
30F	0	On Site	284145 210479	Railway Sidings	1921
31G	0	On Site	283858 210398	Railway Sidings	1921
32H	0	On Site	284138 210479	Railway Sidings	1903
33F	0	On Site	284075 210469	Railway Sidings	1901
34N	0	On Site	283897 210309	Railway Sidings	1876
35H	0	On Site	284121 210503	Railway Sidings	1877

ID	Distance (m)	Direction	NGR	Details	Date
36M	0	On Site	283877 210338	Railway Sidings	1921
37H	0	On Site	284133 210491	Railway Sidings	1921
38	0	On Site	284325 210649	Railway Sidings	1901
39J	0	On Site	284163 210461	Mineral Railway Sidings	1987
40I	0	On Site	284249 210525	Railway Sidings	1921
41I	0	On Site	284261 210529	Railway Sidings	1921
42J	0	On Site	283953 210369	Railway Sidings	1965
52M	0	On Site	284071 210381	Tramway Sidings	1904
53N	0	On Site	283871 210292	Railway Sidings	1877
54F	0	On Site	283982 210408	Railway Sidings	1961
55F	0	On Site	283979 210408	Mineral Railway Sidings	1984
56N	0	On Site	283835 210307	Railway Sidings	1961
57H	0	On Site	284116 210510	Railway Sidings	1904
58	0	On Site	283847 210405	Railway Sidings	1918
59F	0	On Site	284168 210505	Railway Sidings	1918
60I	0	On Site	284202 210566	Mineral Railway Sidings	1962
61O	0	On Site	283894 210532	Tramway Sidings	1904
62P	0	On Site	283584 210268	Railway Sidings	1996
63Q	0	On Site	284538 210568	Mineral Railway Sidings	1997
64J	0	On Site	284569 210569	Mineral Railway Sidings	1986
65Q	0	On Site	284116 210365	Mineral Railway Sidings	1962
66R	0	On Site	283555 210542	Tramway Sidings	1904
67S	0	On Site	283249 210143	Mineral Railway Sidings	1986
68S	0	On Site	283249 210143	Mineral Railway Sidings	1984
69S	0	On Site	283266 210151	Railway Sidings	1961
70T	0	On Site	285005 210686	Railway Sidings	1989
71T	0	On Site	285005 210688	Railway Sidings	1978
72T	0	On Site	285005 210688	Railway Sidings	1989
73U	0	On Site	285225 210347	Mineral Railway Sidings	1978

ID	Distance (m)	Direction	NGR	Details	Date
74U	0	On Site	285227 210348	Mineral Railway Sidings	1989
75U	0	On Site	285227 210348	Mineral Railway Sidings	1919
76	0	On Site	285533 210113	Mineral Railway Sidings	1905
77E	0	On Site	283350 211885	Tramway Sidings	1962
78V	0	On Site	283079 211867	Old Tramway Sidings	1919
79	0	On Site	282650 211869	Railway Sidings	1905
80	0	On Site	282819 211972	Tramway Sidings	1919
81W	0	On Site	282098 212026	Railway Sidings	1962
82W	0	On Site	282568 211989	Railway Sidings	1905
83	0	On Site	282540 212066	Mineral Railway Sidings	1877
84B	0	On Site	282421 212064	Railway Sidings	1962
85B	0	On Site	282380 212062	Colliery Railway Sidings	1921
86	0	On Site	282252 212073	Railway Sidings	1962
43X	6	NE	284449 210859	Railway Sidings	1919
87X	14	NE	284442 210857	Mineral Railway Sidings	1948
88K	14	NE	284605 211000	Railway Sidings	1921
44K	17	NE	284597 210989	Railway Sidings	1919
45K	17	NE	284599 210986	Railway Sidings	1904
89Y	38	NW	281912 212099	Railway Sidings	1965
90Y	63	NW	281908 212127	Railway Sidings	1919
46Z	140	N	284654 210998	Railway Sidings	1921
91	155	NW	281236 211992	Railway Sidings	1914
47L	166	NW	281272 212028	Railway Sidings	1921
48L	169	NW	281278 212023	Railway Sidings	1962
49L	173	NW	281280 212029	Railway Sidings	1903
92	199	NW	281730 212138	Mineral Railway Sidings	1904
50L	200	NW	281390 212037	Railway Sidings	1962
93L	206	NW	281415 212051	Railway Sidings	1948
94Z	234	N	284703 211028	Railway Sidings	

ID	Distance (m)	Direction	NGR	Details	Date
51L	239	NW	281390 212074	Railway Sidings	

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? Yes

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Abandoned
65	N	Abandoned
65	N	Razed
237	NW	Abandoned
237	NW	Razed

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? Yes

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
0	On Site	Not given	rail
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track

Distance (m)	Direction	Name	Type
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	rail
80	SW	Not given	Multi Track
80	SW	Not given	Multi Track

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

Groundsure Helpline

Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettel Lane
Brierley Hill, West Midlands
DY5 3LH
Tel: +44 (0) 1384 262 000
Email:**enquiries.gs@jpb.co.uk**
Website: **www.jpb.co.uk**

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS

Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website:**http://www1.getmapping.com/**

Peter Brett Associates
Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

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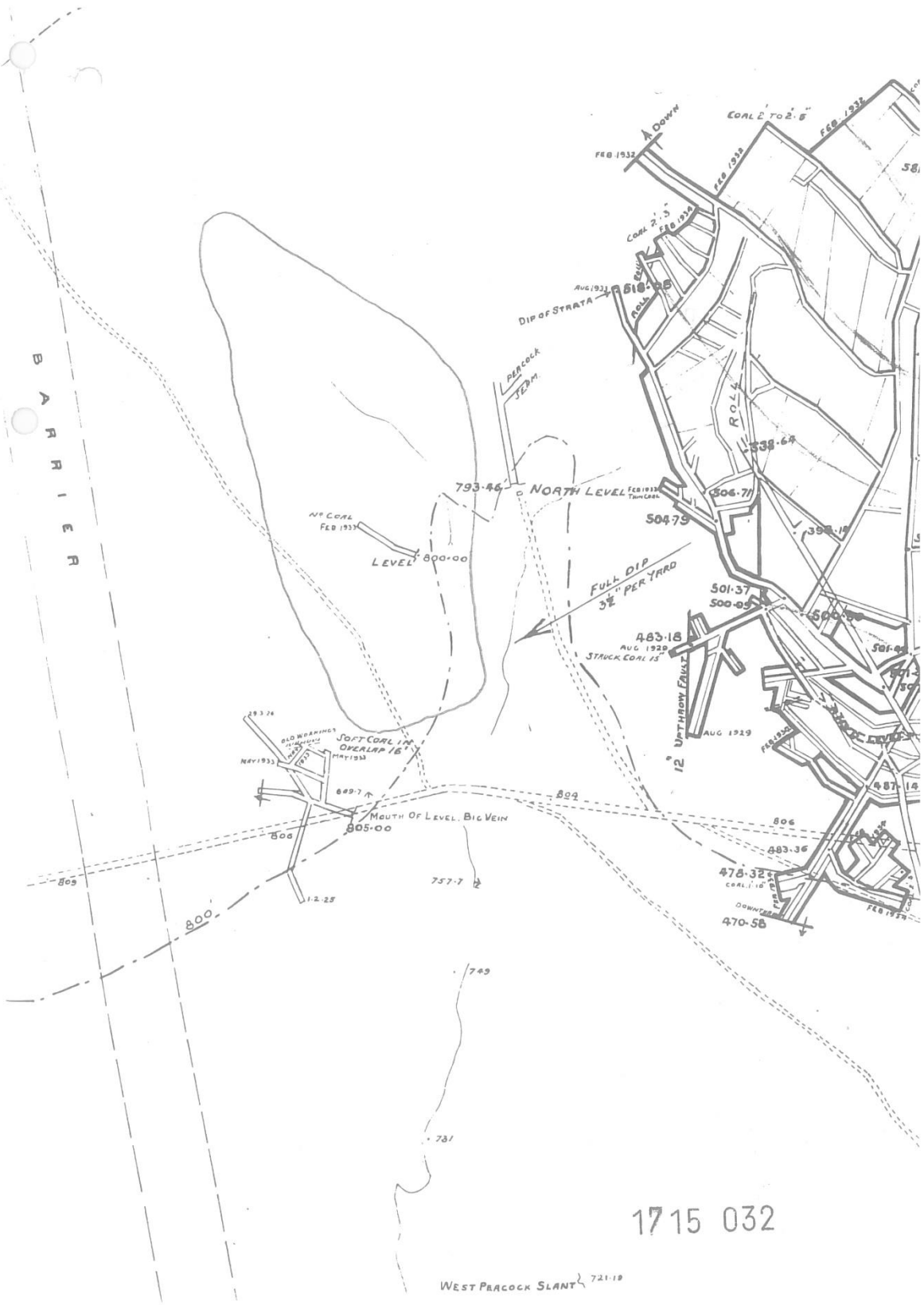
Standard Terms and Conditions

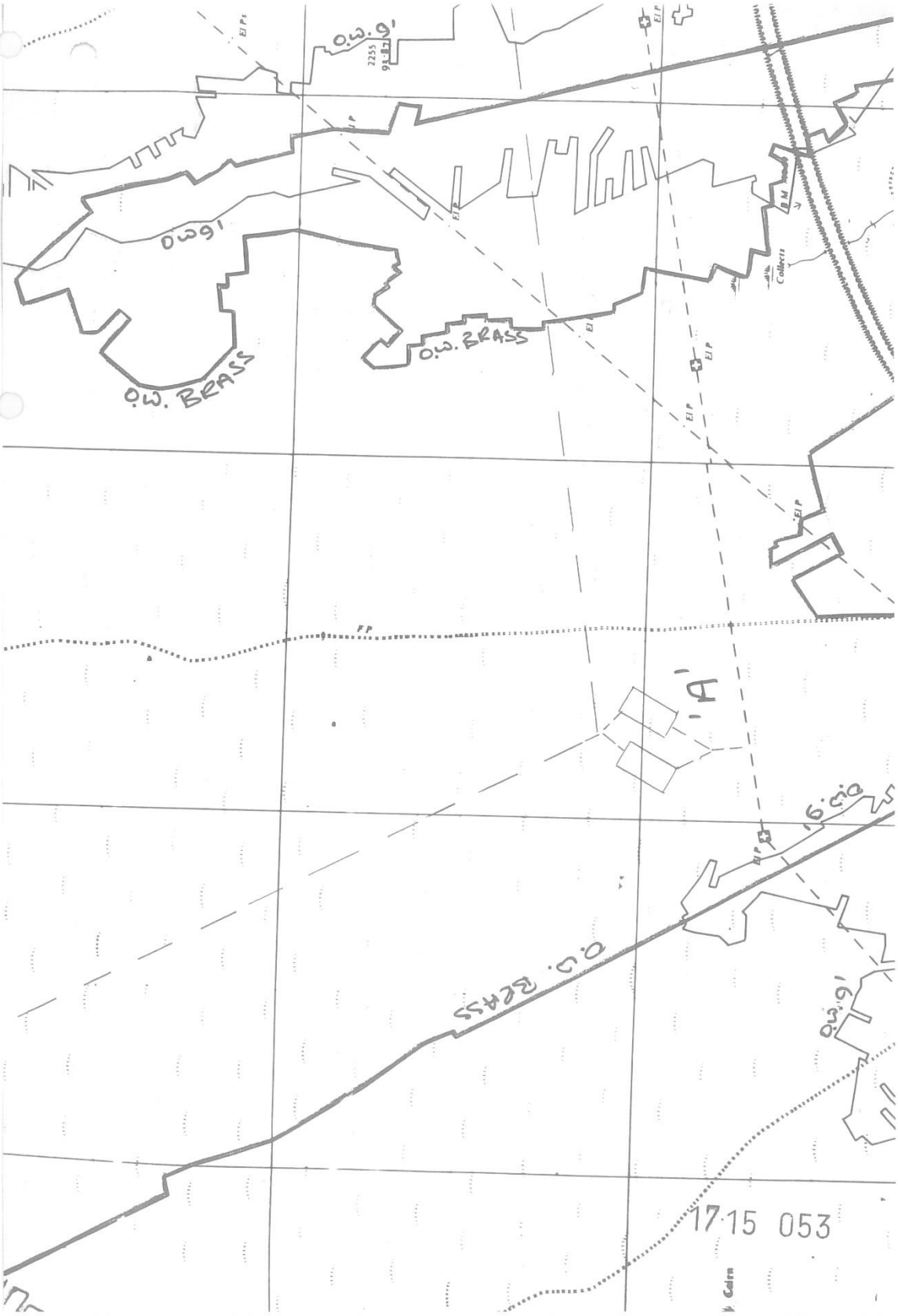
Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-feb11-2019

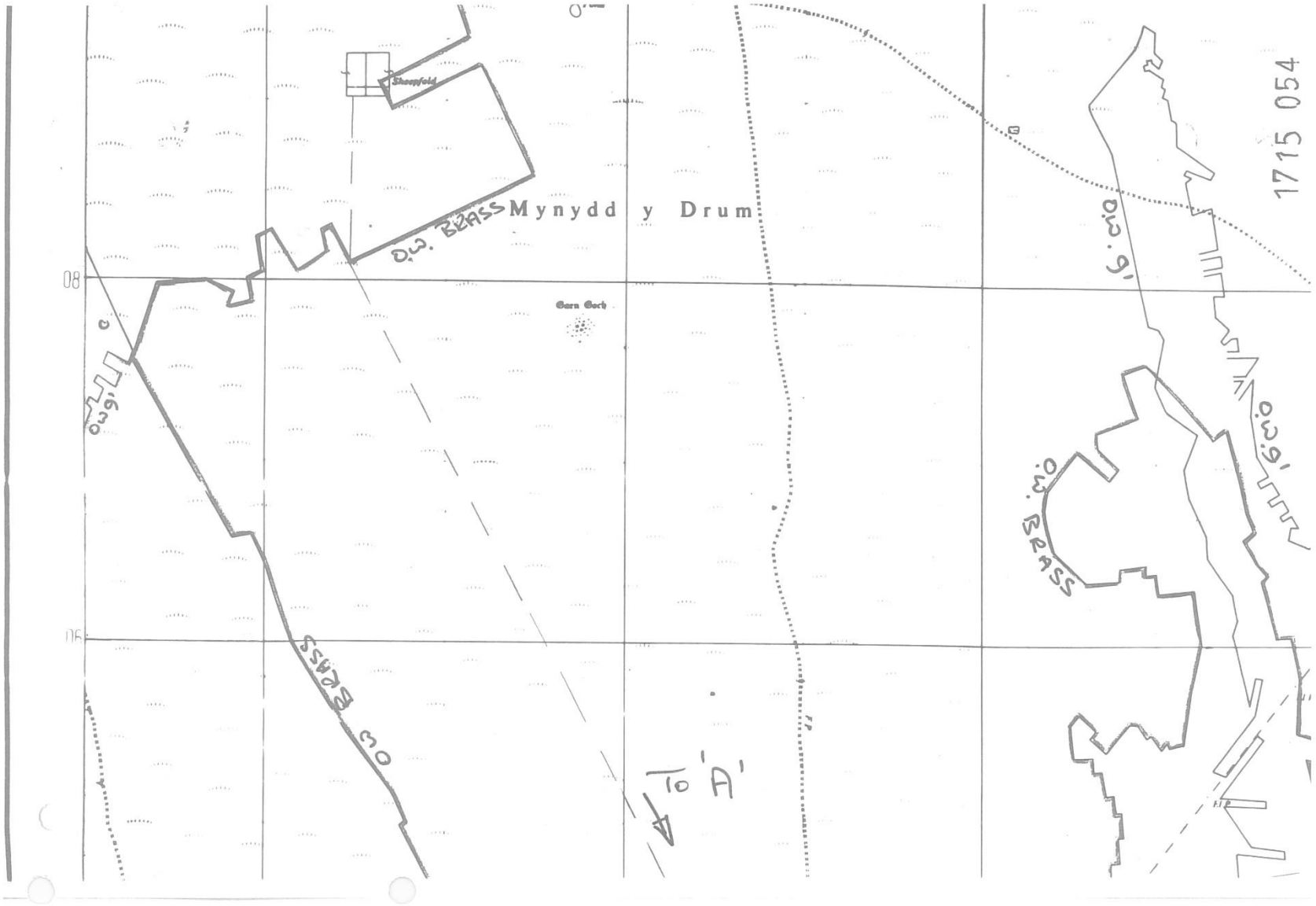
Appendix F

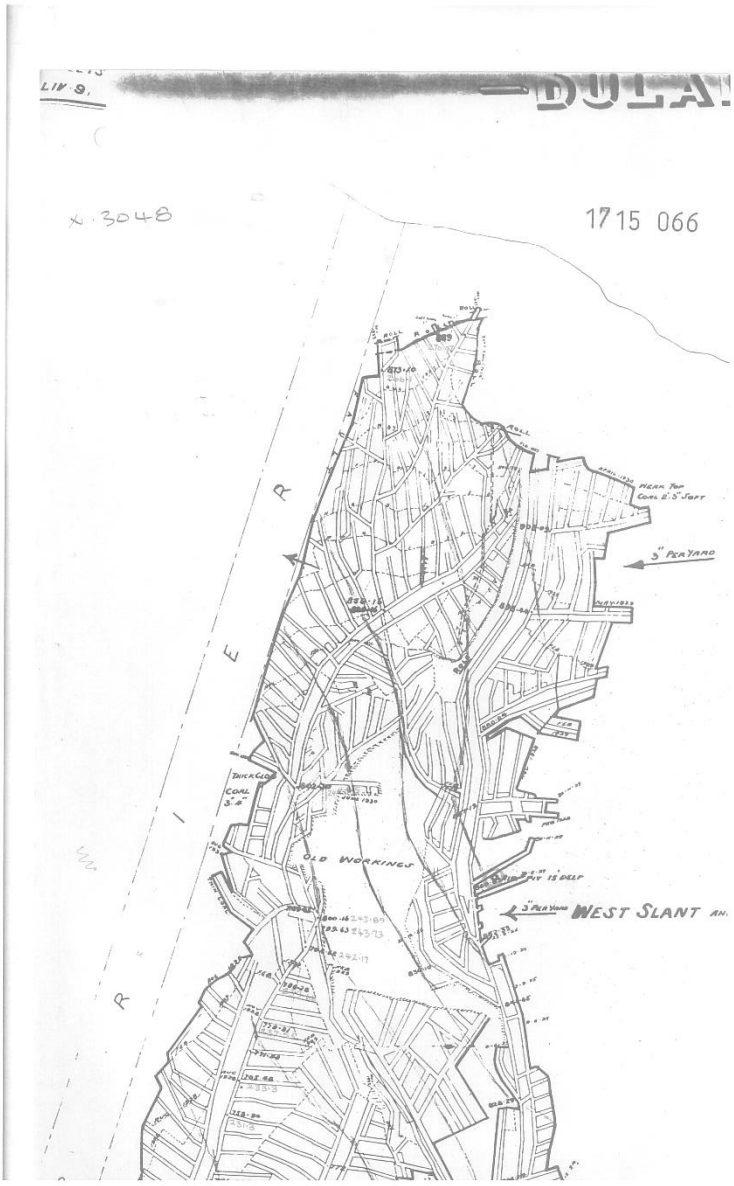
Nant Helen Underground Workings - Celtic Energy

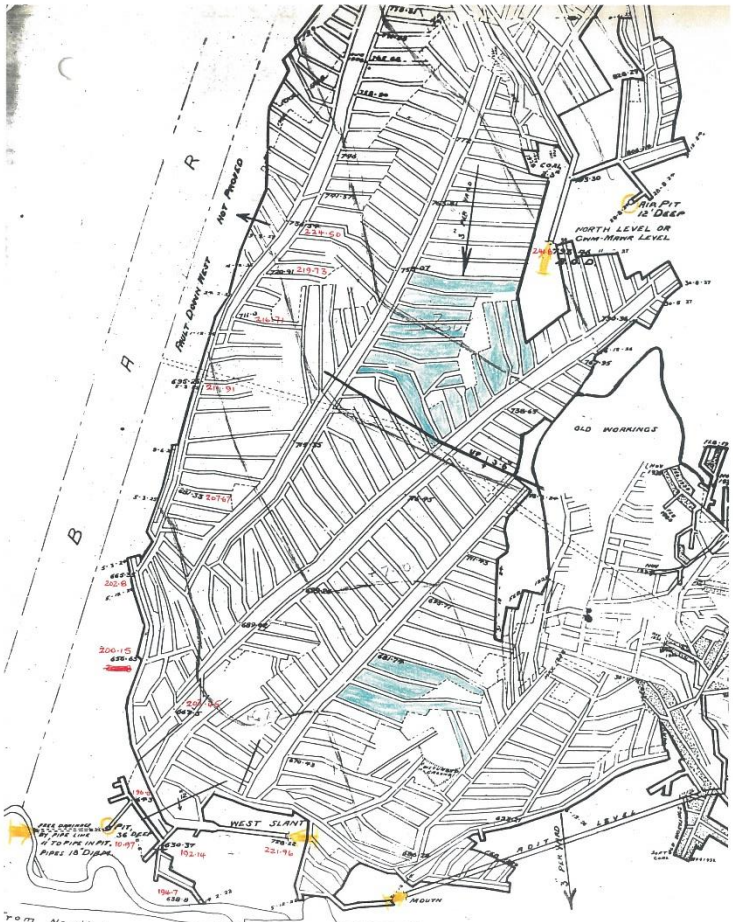

BARRIER
DOWN
COAL 2' TO 2'.5"
FEB 1932
COAL 2'.3"
AUG 1933
DIP OF STRATA
PEACOCK SEAM
ROLL
538.64
793.46
NORTH LEVEL
506.71
504.79
No COAL
FEB 1933
LEVEL 800.00
FULL DIP 3½" PER YARD
501.37
500.09
483.18
AUG 1929
STRUCK COAL 15"
12" UPTHROW FAULT
AUG 1929
SOFT COAL IN OVERLAP 16"
MAY 1933
MOUTH OF LEVEL. BIG VEIN
805.00
804
806
809
800
757.7
1.2.25
483.36
478.32
470.58
749
731
WEST PEACOCK SLANT 721.19

1715 032


O.W.
O.W. BRASS
O.W. BRASS
O.W.
O.W. BRASS
O.W.
17 15 053


Mynydd y Drum
Sheepfold
Garn Goch
O.W. BRASS
O.W. BRASS
O.W. BRASS
O.W. BRASS
O.W. BRASS
08
06
To 'A'
1715 054


LIV 9.
DULA
x 3048
1715 066
R I E R
WEAK TOP COAL 2'.5" SOFT
3" PER YARD
THICK CLOS COAL 3'.0"
OLD WORKINGS
PIT 15 DEEP
3" PER YARD
WEST SLANT AN

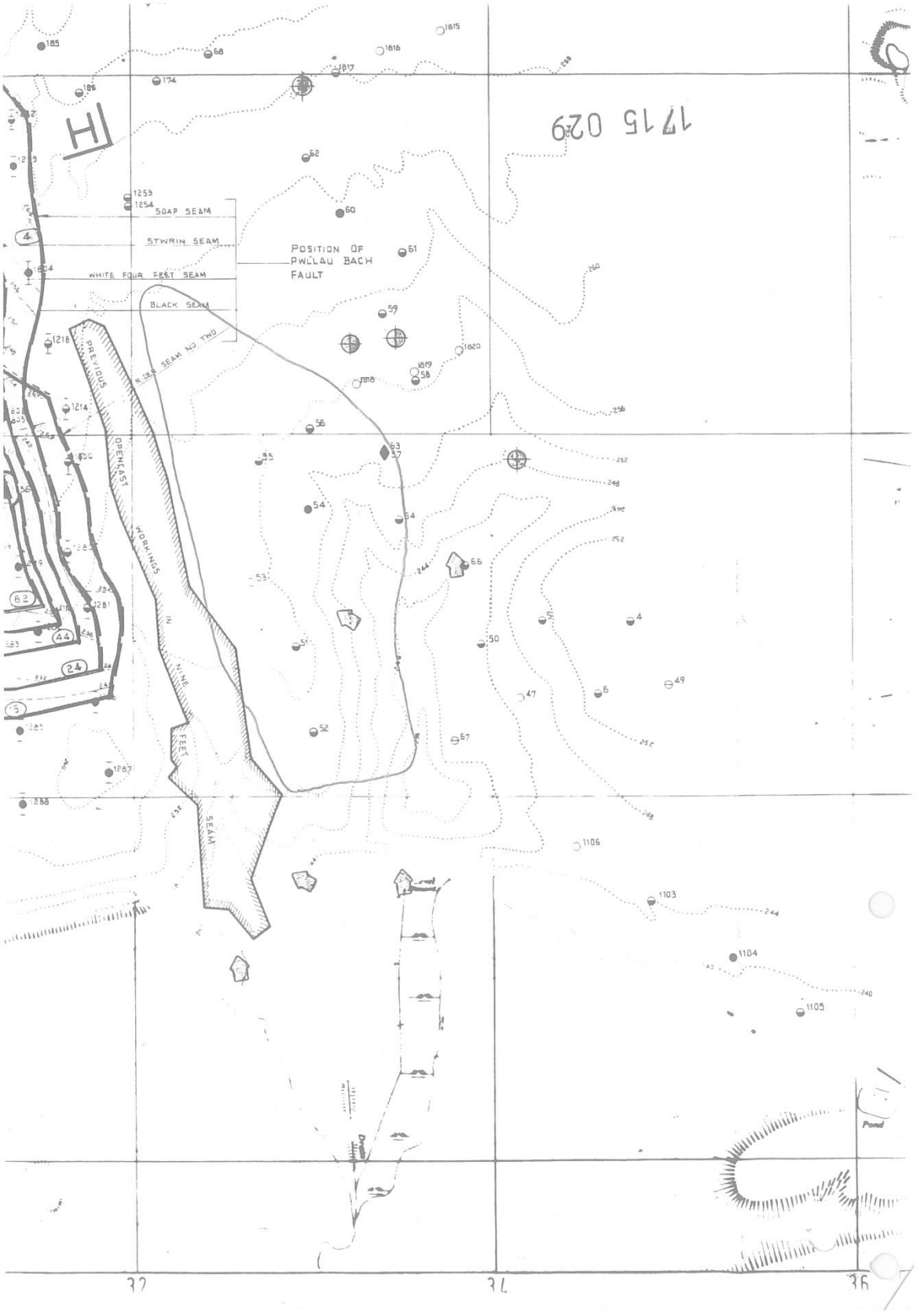


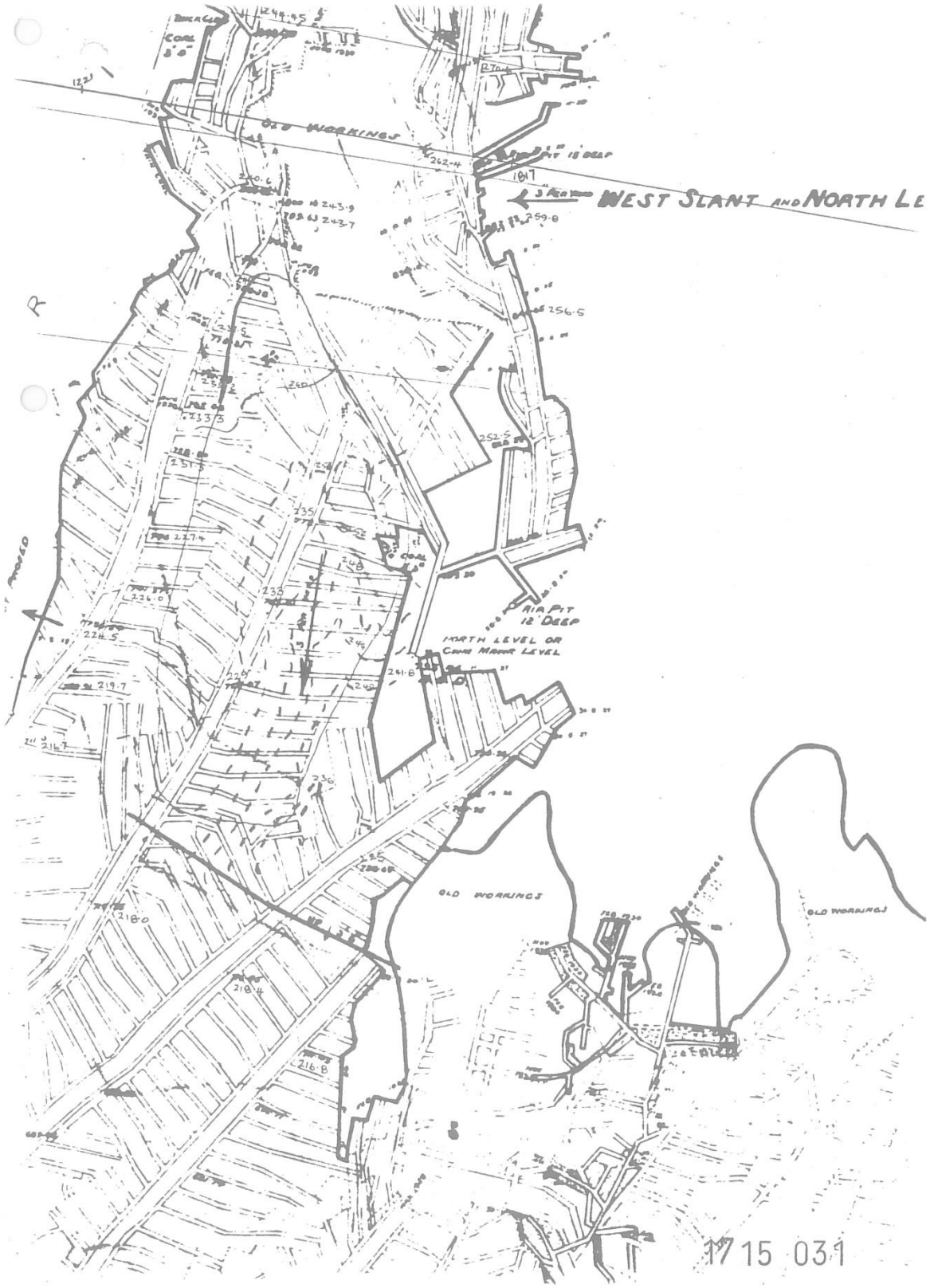
"THIS PLAN IS A TRUE COPY OF THE WORKING PLAN OF THE MINE AS COMPLETED UP TO 10TH FEBRUARY 1934, AND I CERTIFY AFTER THOROUGH EXAMINATION AND INQUIRY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF IT IS AN ACCURATE PLAN OF THE MINE"

H. Burnell
Mining Engineer
Llanelly
29/5/34

Certificate No 1502

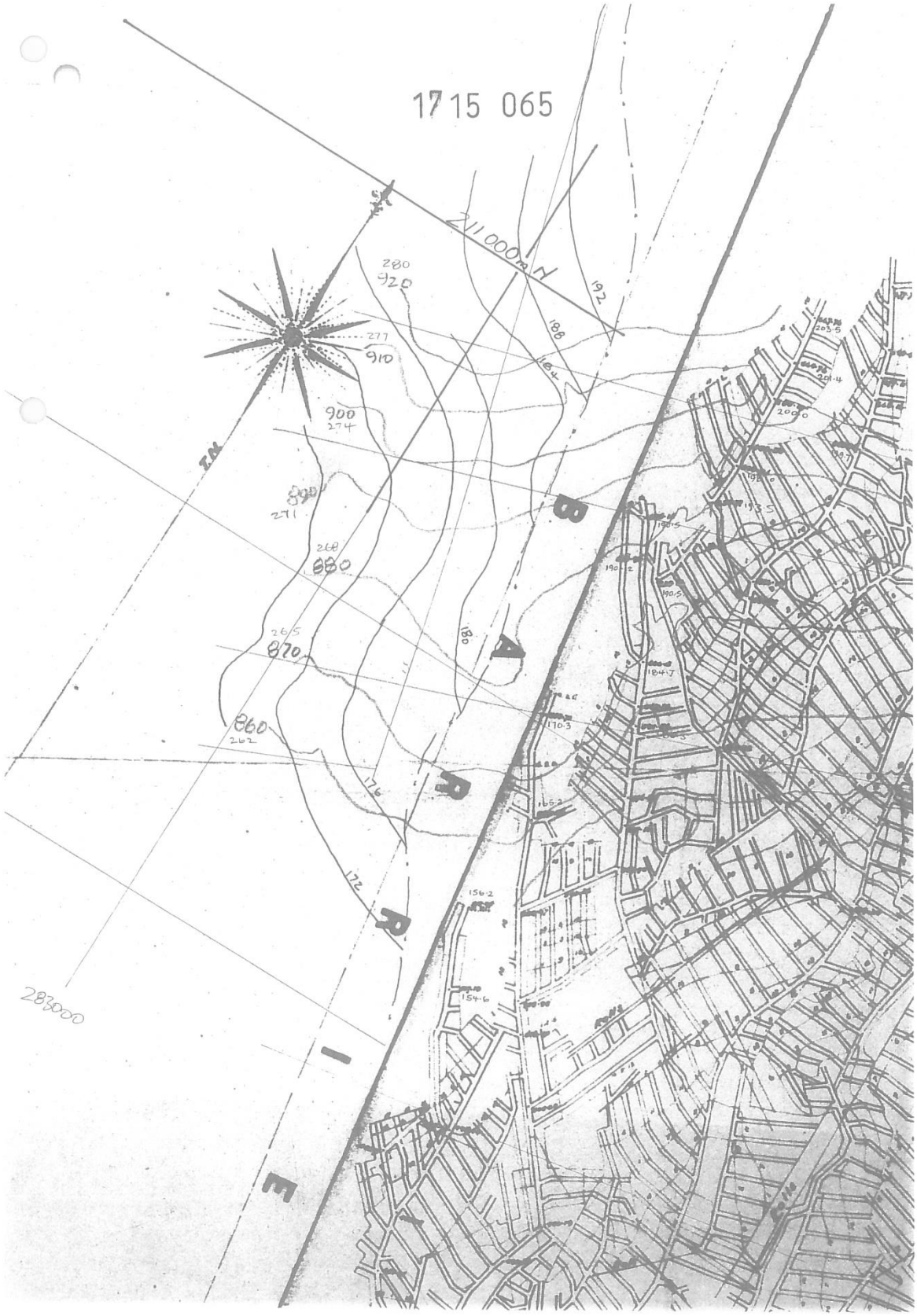
SCALE 2 CHAINS TO ONE INCH
1:2500


1715 029
SOAP SEAM
STWRIN SEAM
WHITE FOUR FEET SEAM
BLACK SEAM
POSITION OF PWLLAU BACH FAULT
PREVIOUS OPENCAST WORKINGS IN NINE FEET SEAM
R.I.P. SEAM NO TWO
37
36


OLD WORKINGS
WEST SLANT AND NORTH LE
AIR PIT 18' DEEP
NORTH LEVEL OR CROSS MAIN LEVEL
OLD WORKINGS
OLD WORKINGS

1715 031

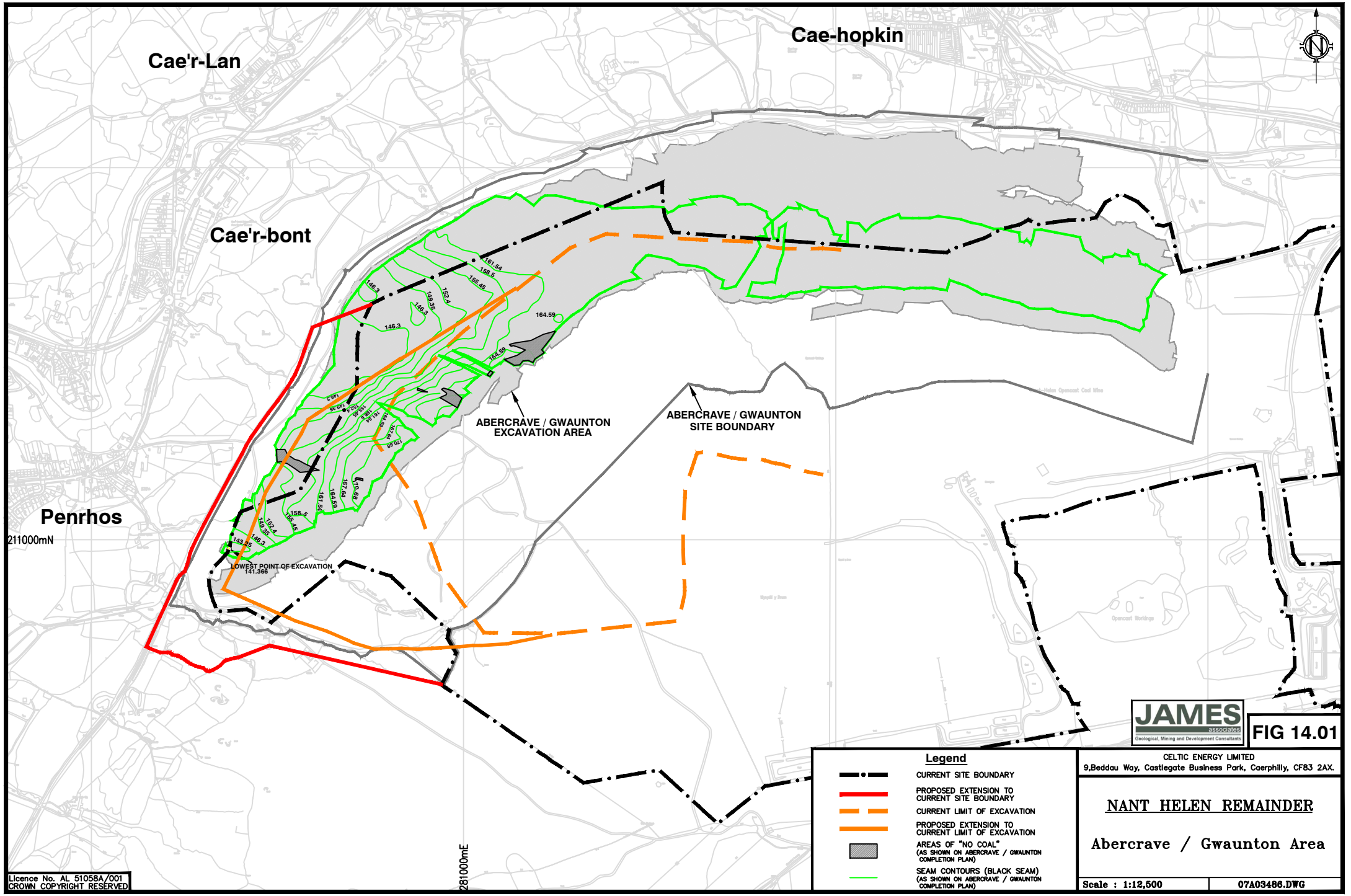
1715 065

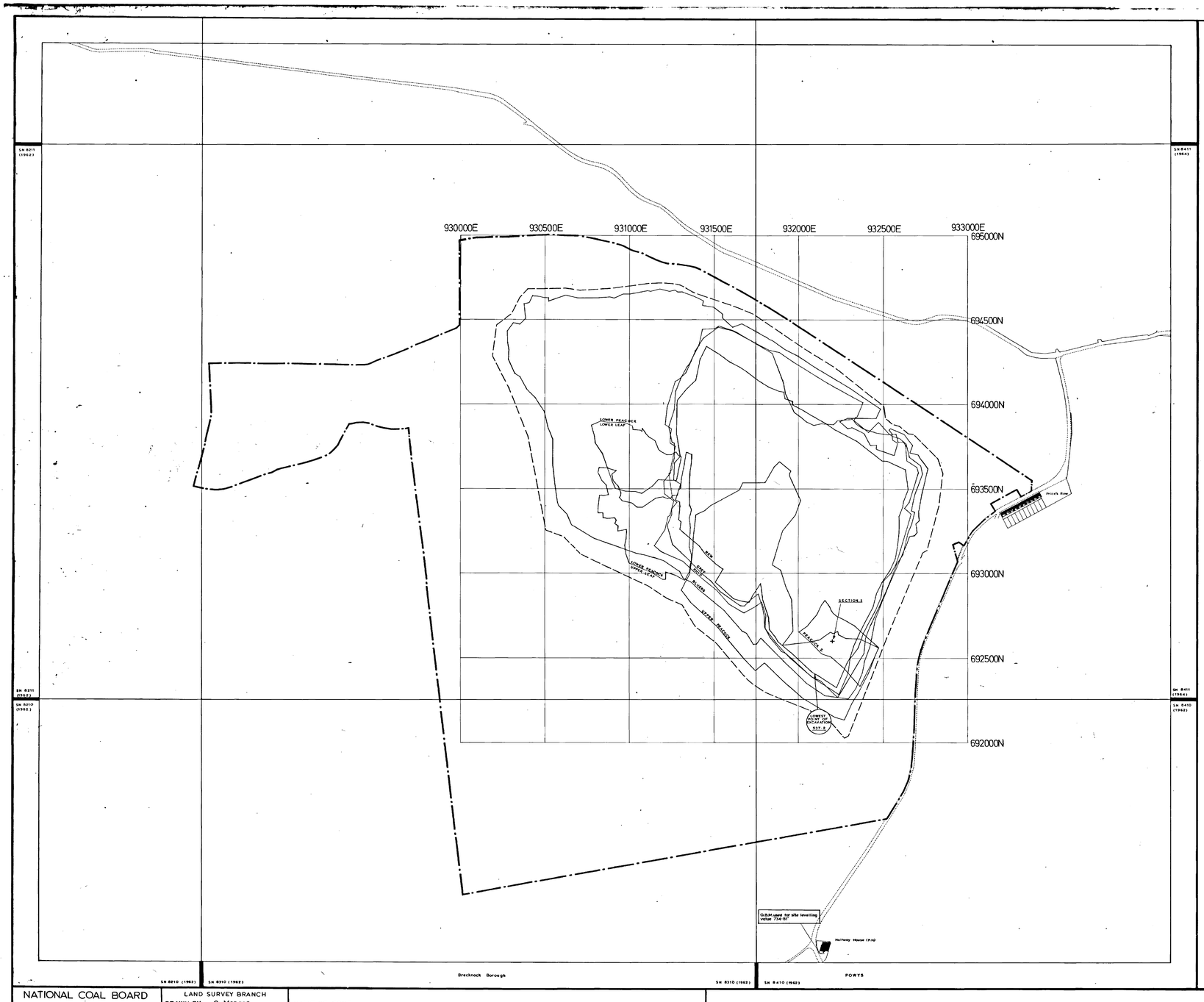


211000mN
280
920
277
910
900
274
890
271
268
880
265
870
860
262
192
188
184
180
176
172
283000
B
A
R
R
I
E

Appendix G

Opencast Completion Plans - Celtic Energy


Cae'r-Lan
Cae-hopkin
Cae'r-bont
Penrhos
211000mN
281000mE
ABERCRAVE / GWAUNTON EXCAVATION AREA
ABERCRAVE / GWAUNTON SITE BOUNDARY
LOWEST POINT OF EXCAVATION 141.366
Legend
CURRENT SITE BOUNDARY
PROPOSED EXTENSION TO CURRENT SITE BOUNDARY
CURRENT LIMIT OF EXCAVATION
PROPOSED EXTENSION TO CURRENT LIMIT OF EXCAVATION
AREAS OF "NO COAL" (AS SHOWN ON ABERCRAVE / GWAUNTON COMPLETION PLAN)
SEAM CONTOURS (BLACK SEAM) (AS SHOWN ON ABERCRAVE / GWAUNTON COMPLETION PLAN)
JAMES associates
Geological, Mining and Development Consultants
FIG 14.01
CELTIC ENERGY LIMITED
9,Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX.
NANT HELEN REMAINDER
Abercrave / Gwaunton Area
Scale : 1:12,500
07A03486.DWG
Licence No. AL 51058A/001
CROWN COPYRIGHT RESERVED



LEGEND

LOCATION

1:2500 SCALE ORDNANCE SHEET REFERENCE	SN 8310: 8311: 8410: 8411
DATE OF ORDNANCE SHEET	1962: 1962: 1962: 1964
NAME OF SITE	ONLLWYN
LOCATION OF SITE	2mi N.E. Seven Sisters, 1·5 mi S.E. Abercrave
COUNTY	POWYS
DISTRICT	BRECKNOCK
COMMUNITY	YSTRADGYNLAIS HIGHER

QUANTITIES WORKED

TOTAL AREA ACQUIRED 258 ACRES SHEWN

TOTAL AREA WORKED EXCUDING BATTERS 81.22 ACRES

TOTAL COAL RECOVERED FROM ABOVE 1,224,740 TONS

NAMES OF SEAMS WORKED FOR ABOVE TONNAGE (SEAMS NAMES FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)	UPPER PEACOCK	PEACOCK 2.	LOWER PEACOCK	BLUERS	RHYD	GREY	NEW
AREA OF COAL SEAM WORKED COLOUR EDGE (SQUARE YARDS) (SEAMS COLOURED FROM LEFT TO RIGHT IN GEOLOGICAL DESCENDING ORDER)	82,122	11,636	32,229	399,302	227,349	225,962	187,380
TOTAL OLD WORKING VOIDS IN COAL SEAM IN CUBIC YDS.	—	—	—	—	—	—	—
AREA OF SEAM WHERE OLD WORKING VOIDS WERE LOCATED	NIL	NIL	NIL	NIL	NIL	NIL	NIL
DIP AND DIRECTION OF EACH SEAM SHEWN BY CONTOURS	830	760	819	702	650	638	605
REDUCED LEVELS TO ORDNANCE DATUM SHEWN GROUND LEVEL (RELATIVE TO NEWLYN)	OL 813·5	OL 803·3	OL 866·1	OL 802·7	OL 801·7	OL 802·6	OL 804·8
BOTTOM OF COAL	BC 797·3	BC 756·7	BC 780·7	BC 655·4	BC 630·4	BC 606·8	BC 552·8
FAULTS SHEWN WITH THROW IN FEET ON DOWNTHROW SIDE							
EXCAVATION ONLY							

GENERAL DESCRIPTION

TYPE OF LAND: Grazing

NATURE OF OVERBURDEN: Boulder Clay & Mudstones with some Shales & Sandstones.

NATURE OF COAL: Anthracite

SPECIAL REMARKS:

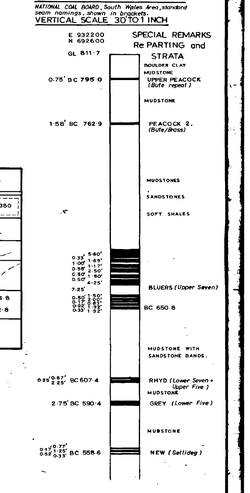
OPERATIONAL DATES

ACQUIRED	August 1972
COMMENCEMENT OF COALING	October 1973
COMPLETION OF COALING	May 1982
COMPLETION OF RESOILING	
HANDED OVER TO MINISTRY OF AGRICULTURE F&F	
FINALLY RELINQUISHED	

COPY SENT TO	DATE	INITIAL
Mining Records (2)		
N.C.B. (1)		
Geological Survey (1)		

VERTICAL SECTION (S)

NATIONAL COAL BOARD, South Wales Area, standard seam namings, shown in brackets.
VERTICAL SCALE 30 TO 1 INCH

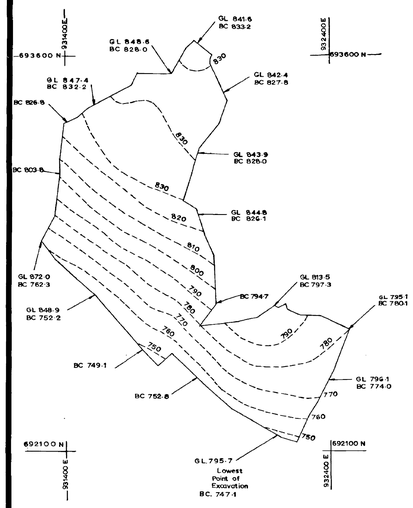


1 of 2

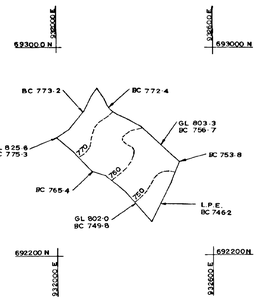
163A

NATIONAL COAL BOARD OPENCAST EXECUTIVE 200 LICHFIELD LANE, BERRY HILL MANSFIELD, NOTTS.	LAND SURVEY BRANCH DRAWN BY: C. Morgan DATE: September 1983 CHECKED BY: B. Evans DATE: December 1983 SCALE: 1:2500	NAME OF ZONE OR CONTRACT	NAME OF SITE. **ONLLWYN**	SITE REFERENCE NUMBER 070402 OPERATIONAL CONTRACT NUMBER 5066	DRAWING NUMBER OE/COMP/0 /

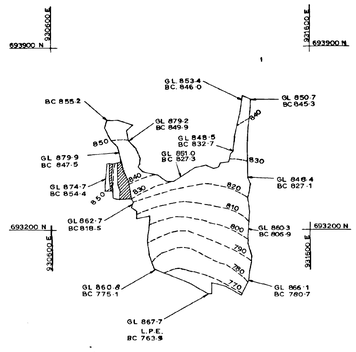
07A04247.DWG
(Scale 1:2500)



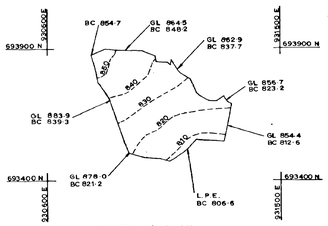
UPPER PEACOCK.



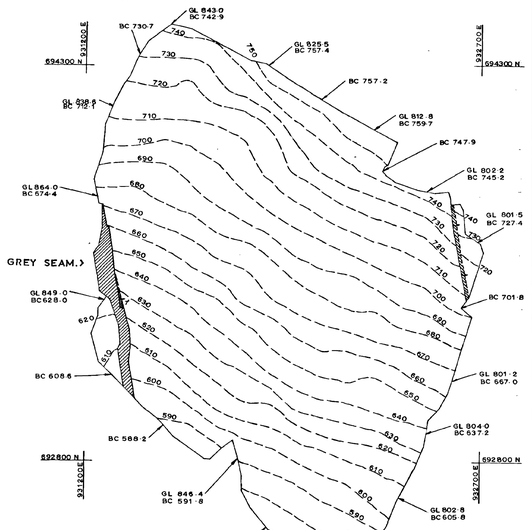
PEACOCK 2.

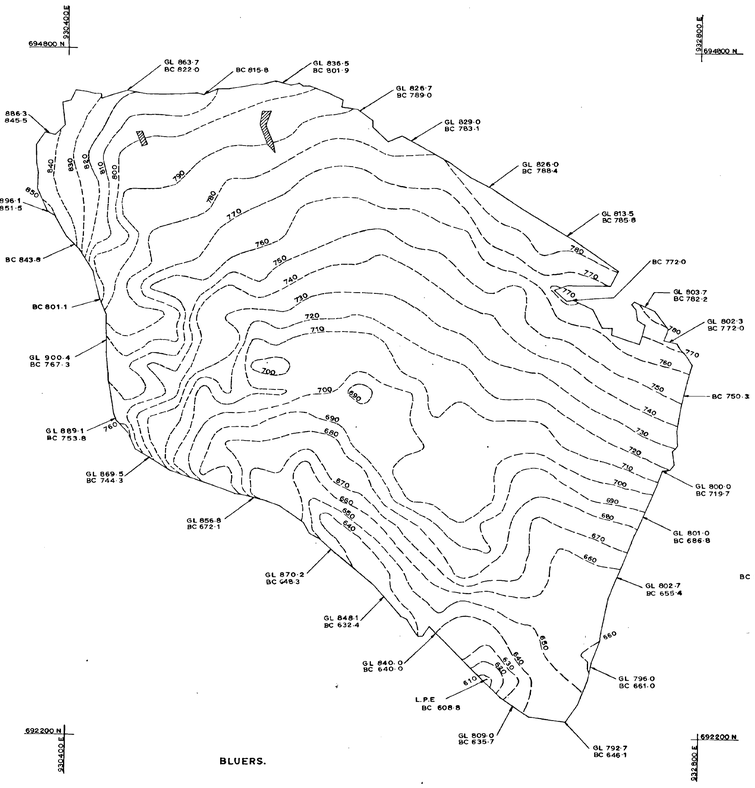


LOWER PEACOCK.
Upper Leaf.

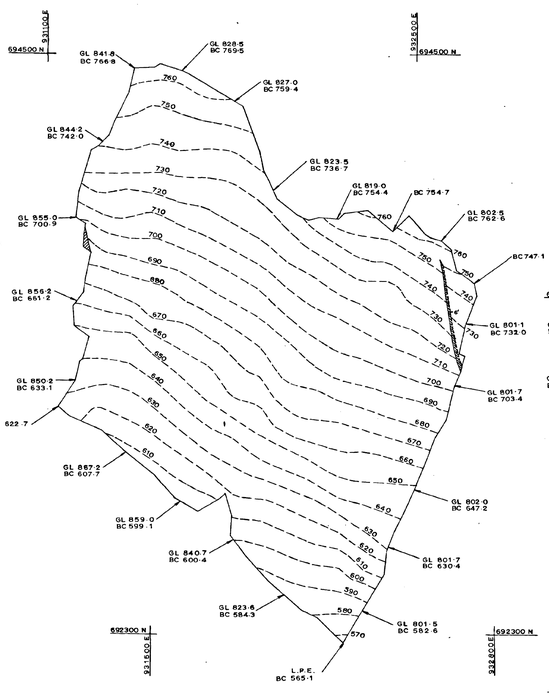


LOWER PEACOCK.
Lower Leaf.

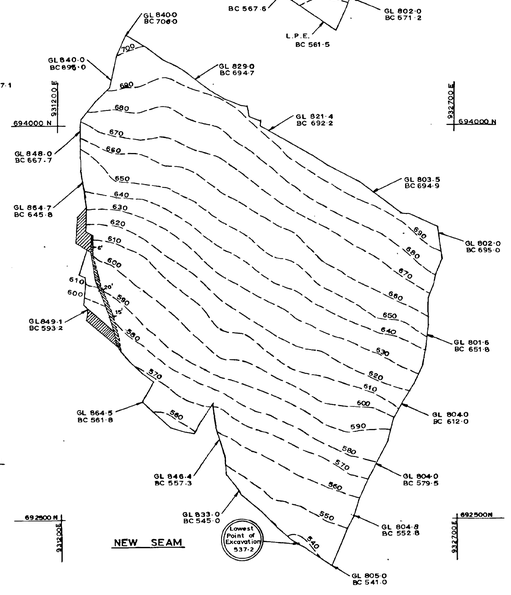




BLUERS.



RHYD SEAM.

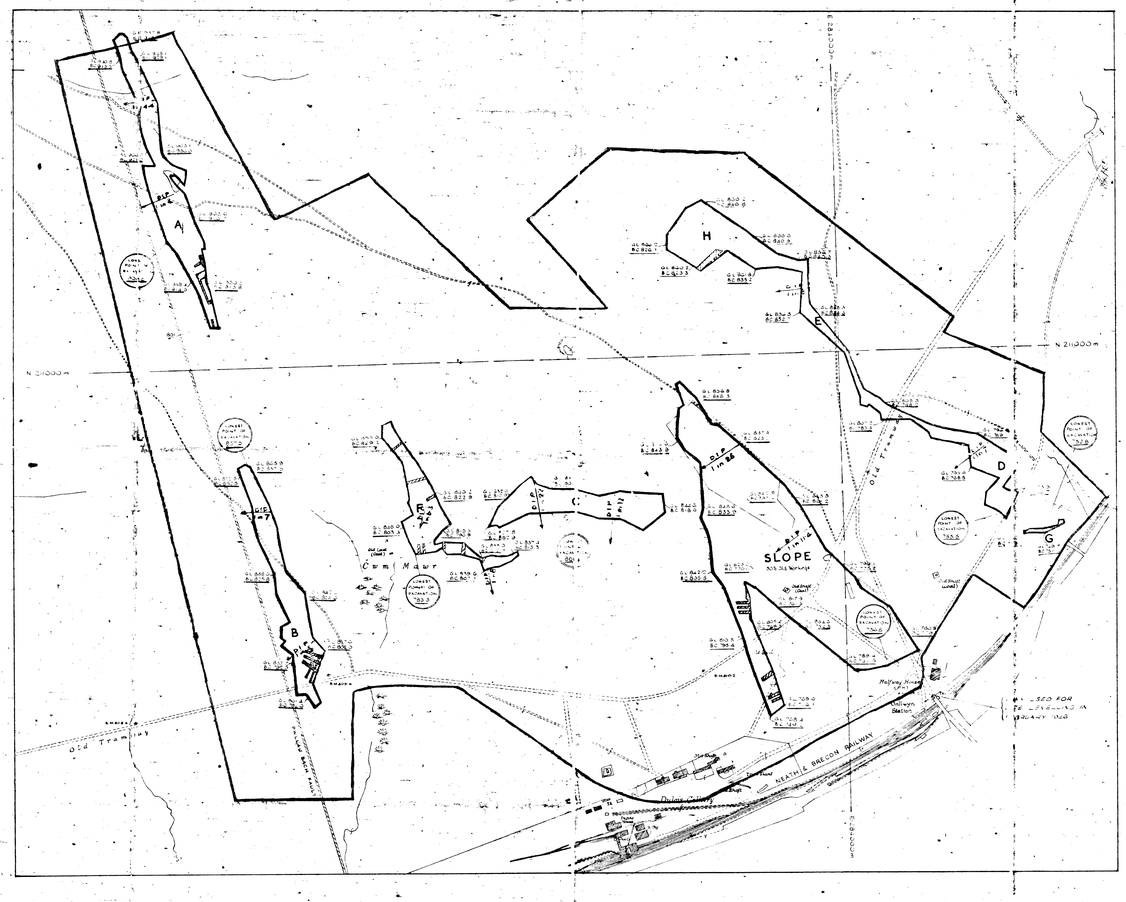


NEW SEAM

2 of 2

ONLLWYN 163B

07A04247/A.DWG
(Scale 1:2500)


A
B
C
D
E
F
G
H
SLOPE
N 211000 m
Old Tram Road
Mayfield Nursery
Mayfield Station
DEATH'S BREDIN RAILWAY
Duke's Pond
Old Tram Road
Cwm Mawr
Cwm Mawr Reservoir
Cwm Mawr Reservoir No 2
Cwm Mawr Reservoir No 3
Cwm Mawr Reservoir No 4
Cwm Mawr Reservoir No 5
Cwm Mawr Reservoir No 6
Cwm Mawr Reservoir No 7
Cwm Mawr Reservoir No 8
Cwm Mawr Reservoir No 9
Cwm Mawr Reservoir No



Legend

- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
- POSITION OF KNOWN OR SUSPECTED ADIT
- 13 — FAULT (Throw in Metres, Seam Colour)
- WASHOUT
- AREA OF NO COAL
- OLD WORKINGS (Seam Colour)
- 122 — BOTTOM COAL CONTOUR (Seam Colour)
- G.L. 125.6 / B.C. 124.3 — GROUND LEVEL (Metres) / BOTTOM OF COAL LEVEL (Metres) (Relative to Newlyn Datum)

AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

- Soap Rider
- Soap
- Penny Pieces
- Stwrin
- White Four Feet
- Lower Block Upper Leaf
- Lower Block Lower Leaf
- Cornish
- Hamlo
- 9 Feet Rider
- 9 Feet
- Brass

NOTES

Shafts (S1 etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS Rough Pasture

AFTER RESTORATION Rough Pasture

DETAILS OF OVERBURDEN Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL

NATURE OF COAL Anthrocite

OPERATIONAL DATES

AUTHORISED September 1986

COALING COMMENCED June 1987

COALING COMPLETED March 1999

PLANS ISSUED

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

Drawn by H. Davies Date 2-08-99
Checked by Date
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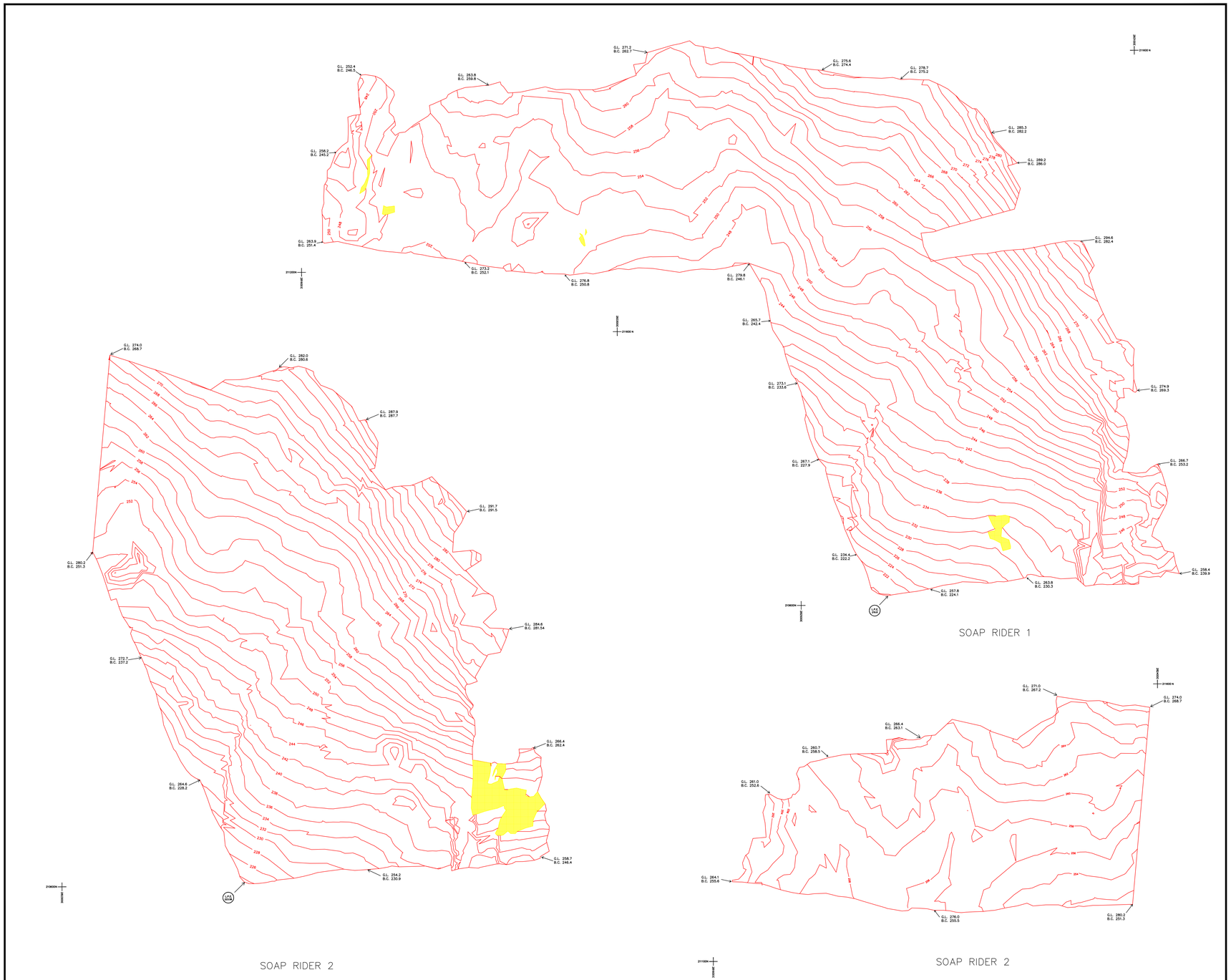
Drawing No. 7SN0413
Contract Drawing No. 07A04306



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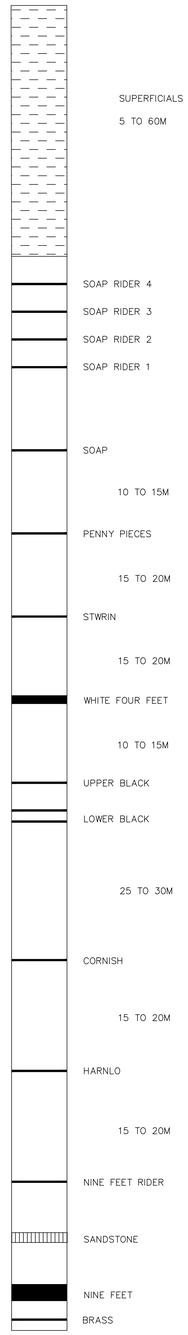

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- PERIMETER OF BATTER
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- POSITION OF KNOWN OR SUSPECTED ADIT
- 13 — FAULT (Throw in Metres, Seam Colour)
- WASHOUT
- AREA OF NO COAL
- OLD WORKINGS (Seam Colour)
- 122 — BOTTOM COAL CONTOUR (Seam Colour)
- G.L. 125.6 / B.C. 124.3 — GROUND LEVEL (Metres) / BOTTOM OF COAL LEVEL (Metres) (Relative to Newlyn Datum)

AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

Soap Rider	9 Feet Rider
Soap	9 Feet
Penny Pieces	Brass
Stwrin	
White Four Feet	
Lower Block Upper Leaf	
Lower Block Lower Leaf	
Cornish	
Harnlo	

NOTES

Shafts (St etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS Rough Pasture

AFTER RESTORATION Rough Pasture

DETAILS OF OVERBURDEN Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL

NATURE OF COAL Anthracite

OPERATIONAL DATES

AUTHORISED September 1986

COALING COMMENCED June 1987

COALING COMPLETED March 1999

PLANS ISSUED

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

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Checked by	Date
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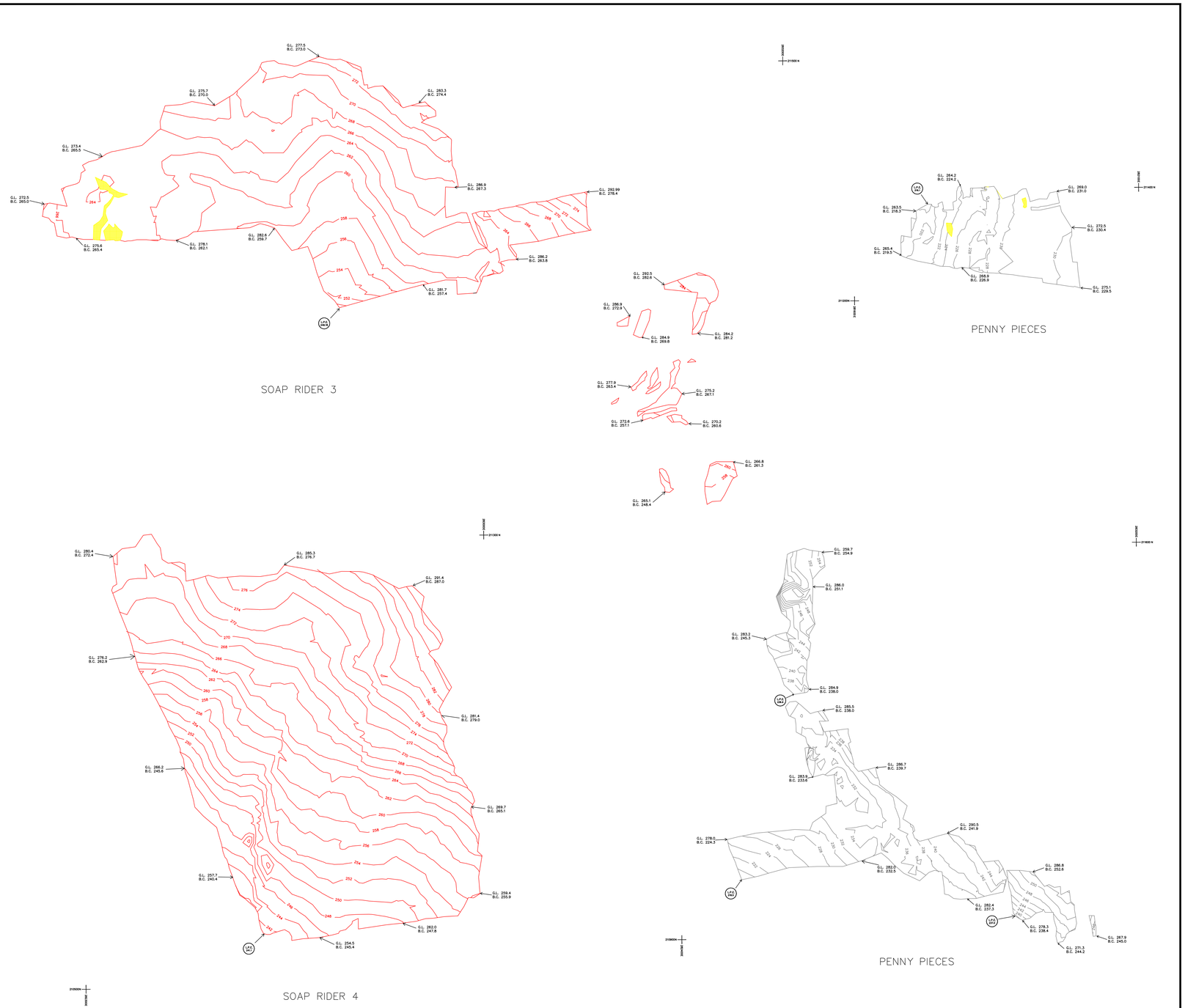
Drawing No. 7SN0407	Contract Drawing No. 07A04306/A



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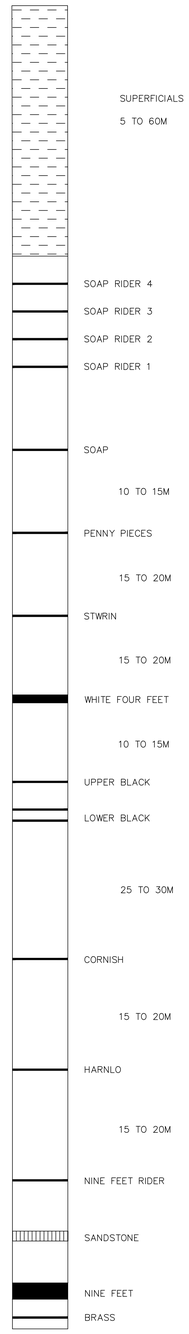

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- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
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- POSITION OF KNOWN OR SUSPECTED ADIT
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- WASHOUT
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AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

Soap Rider	9 Feet Rider
Soap	9 Feet
Penny Pieces	Brass
Stwrin	
White Four Feet	
Lower Black Upper Leaf	
Lower Black Lower Leaf	
Cornish	
Harnlo	

NOTES

Shafts (St etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS: Rough Pasture

AFTER RESTORATION: Rough Pasture

DETAILS OF OVERBURDEN: Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL:

NATURE OF COAL: Anthracite

OPERATIONAL DATES

AUTHORISED: September 1986

COALING COMMENCED: June 1987

COALING COMPLETED: March 1999

PLANS ISSUED:

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

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Checked by	Date
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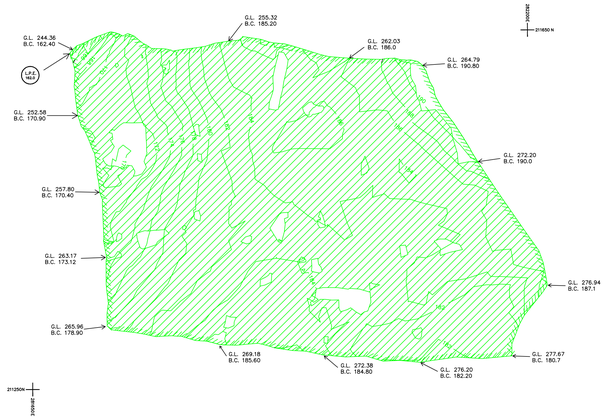

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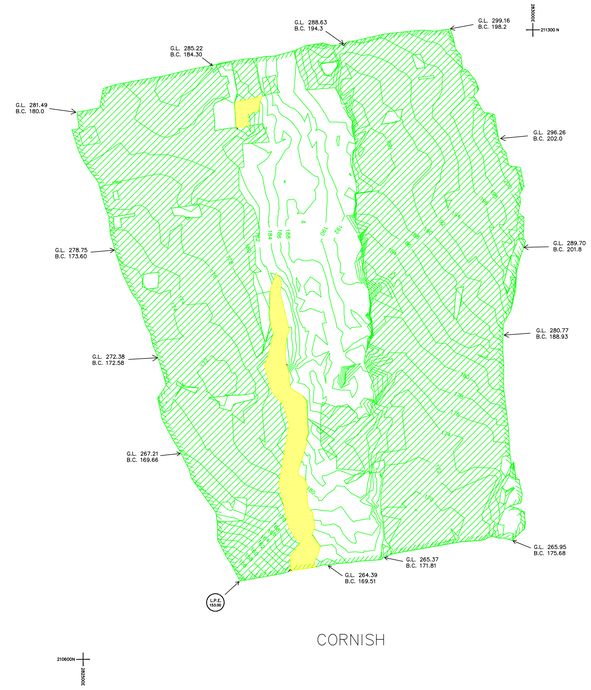

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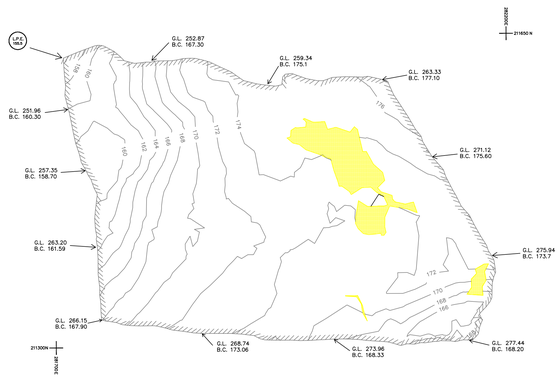
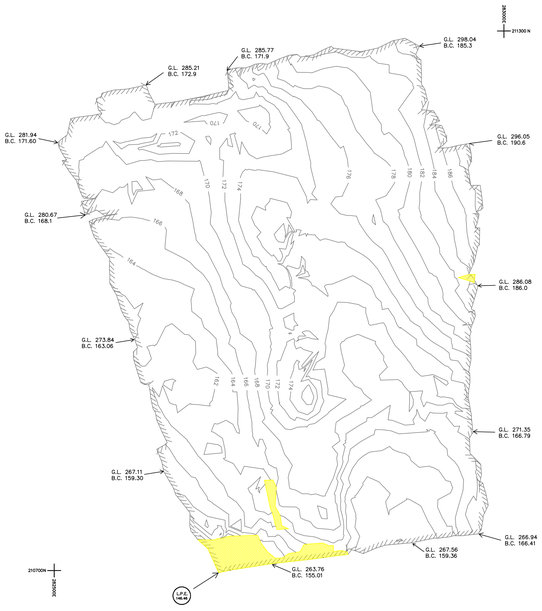


HARNLO



HARNLO

Legend

- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
- POSITION OF KNOWN OR SUSPECTED ADIT
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- G.L. 125.6 / B.C. 124.3 — GROUND LEVEL (Metres) / BOTTOM OF COAL LEVEL (Metres) (Relative to Newlyn Datum)

AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

- Soap Rider
- Soap
- Penny Pieces
- Stwrin
- White Four
- Lower Block Upper Leaf
- Lower Block Lower Leaf
- Cornish
- Hamlo
- 9 Feet Rider
- 9 Feet
- Brass

NOTES

Shafts (S1 etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS Rough Pasture

AFTER RESTORATION Rough Pasture

DETAILS OF OVERBURDEN Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL

NATURE OF COAL Anthracite

OPERATIONAL DATES

AUTHORISED September 1986

COALING COMMENCED June 1987

COALING COMPLETED March 1999

PLANS ISSUED

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

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Checked by Date	
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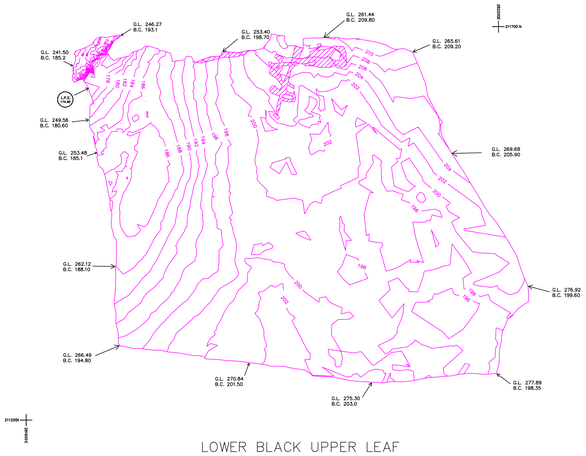
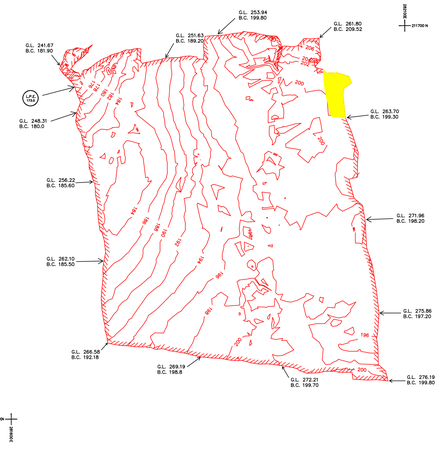


LOWER BLACK UPPER LEAF



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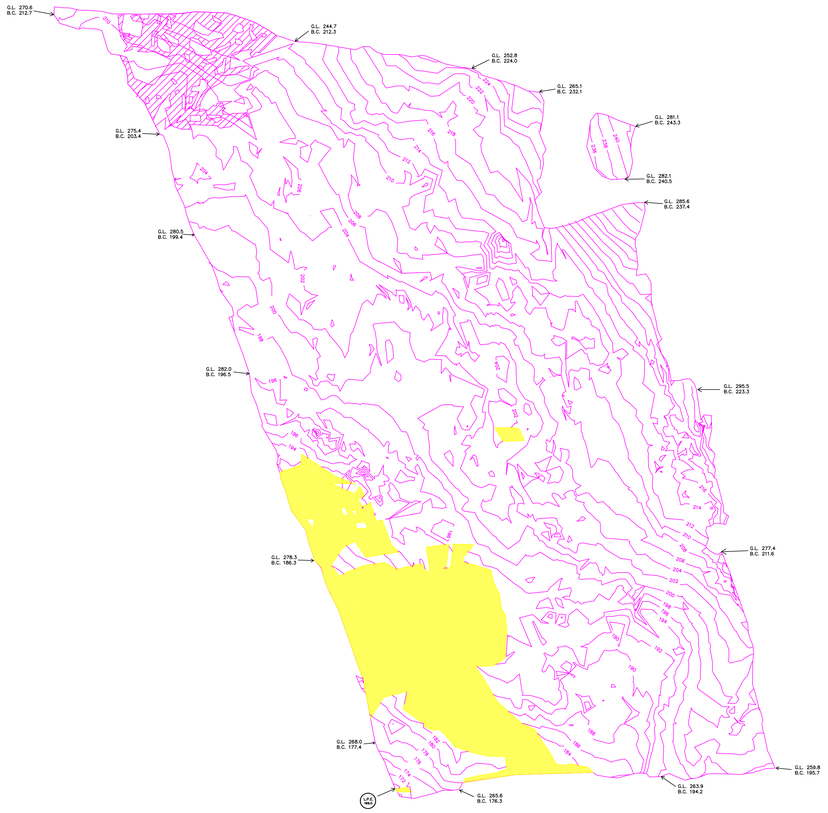

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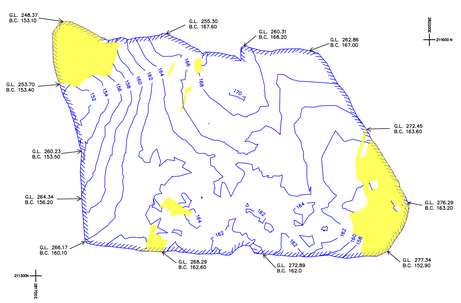

NINE FEET RIDER

Vertical Sections



Legend

- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
- POSITION OF KNOWN OR SUSPECTED ADIT
- 13 — FAULT (Throw in Metres, Seam Colour)
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- OLD WORKINGS (Seam Colour)
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- G.L. 125.6 / B.C. 124.3 — GROUND LEVEL (Metres) / BOTTOM OF COAL LEVEL (Metres) (Relative to Newlyn Datum)

AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

Soap Rider	9 Feet Rider
Soap	9 Feet
Penny Pieces	Brass
Stwrin	
White Four Feet	
Lower Black Upper Leaf	
Lower Black Lower Leaf	
Cornish	
Harnlo	

NOTES

Shafts (S1 etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS Rough Pasture

AFTER RESTORATION Rough Pasture

DETAILS OF OVERBURDEN Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL

NATURE OF COAL Anthracite

OPERATIONAL DATES

AUTHORISED September 1986

COALING COMMENCED June 1987

COALING COMPLETED March 1999

PLANS ISSUED

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

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Checked by	Date
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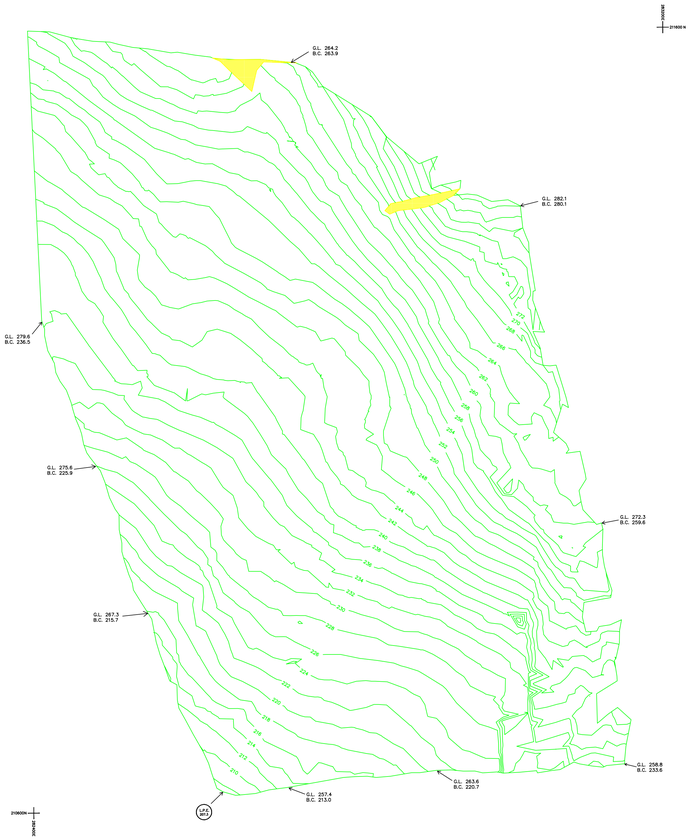
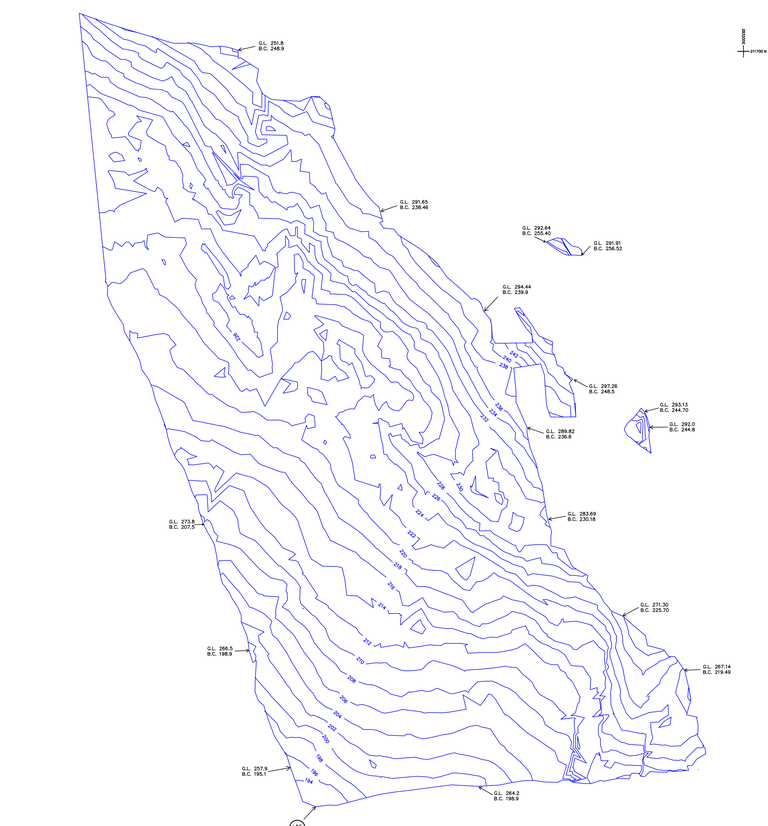
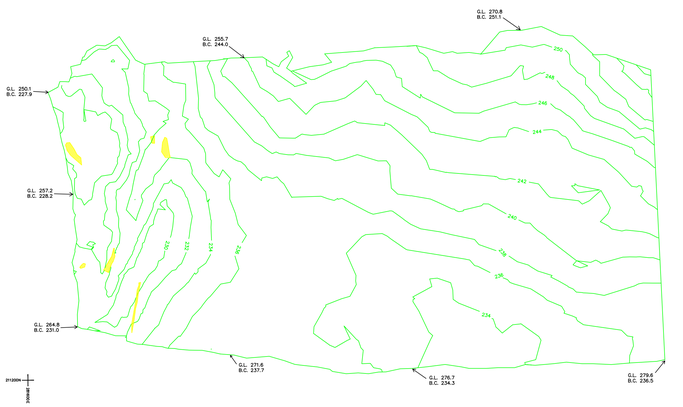
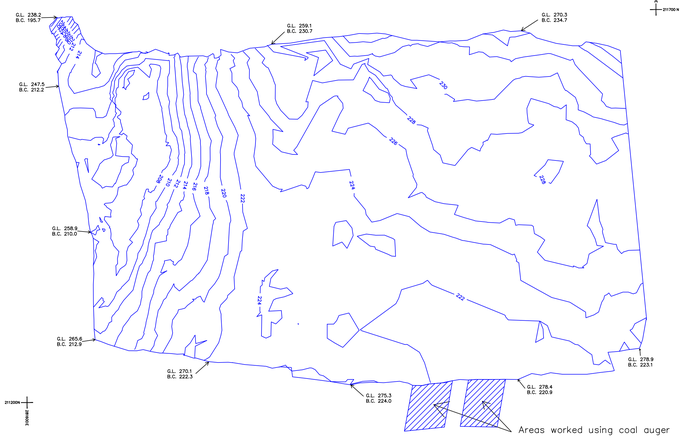
Drawing No. 7SN0410	Contract Drawing No. 07A04306/D









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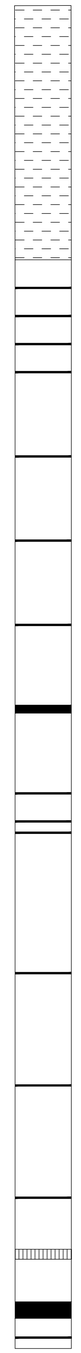

Legend

- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
- POSITION OF KNOWN OR SUSPECTED ADIT
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- G.L. 125.6 / B.C. 124.3 — GROUND LEVEL (Metres) / BOTTOM OF COAL LEVEL (Metres) (Relative to Newlyn Datum)

AREA OF SEAM WORKED (with seam code) IN GEOLOGICAL DESCENDING ORDER

Soap Rider	9 Feet Rider
Soap	9 Feet
Penny Pieces	Brass
Stwrin	
White Four Feet	
Lower Block Upper Leaf	
Lower Block Lower Leaf	
Cornish	
Harnlo	

NOTES

Shafts (S1 etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS: Rough Pasture

AFTER RESTORATION: Rough Pasture

DETAILS OF OVERBURDEN: Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL:

NATURE OF COAL: Anthracite

OPERATIONAL DATES

AUTHORISED: September 1986

COALING COMMENCED: June 1987

COALING COMPLETED: March 1999

PLANS ISSUED:

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

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Checked by	Date
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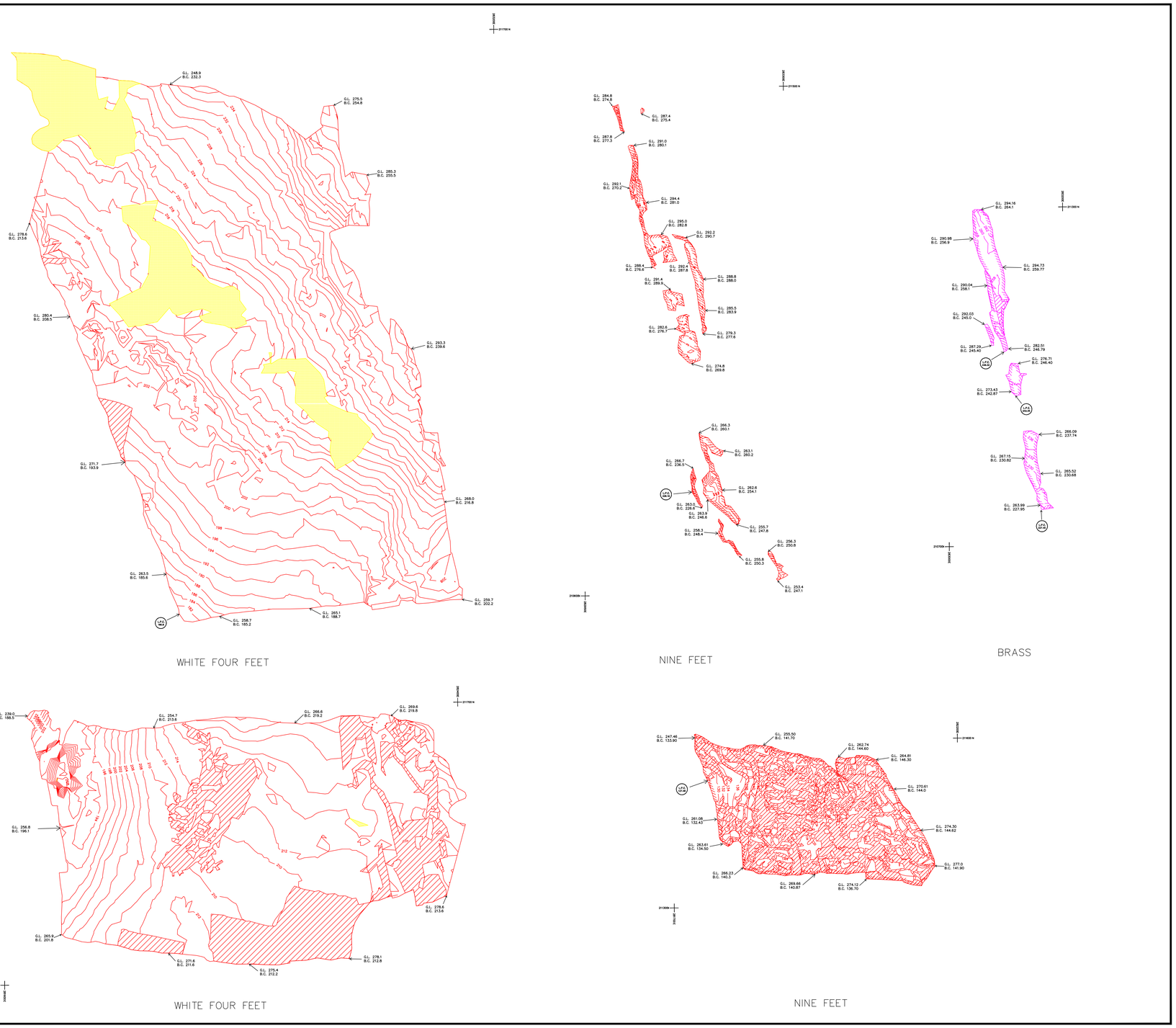
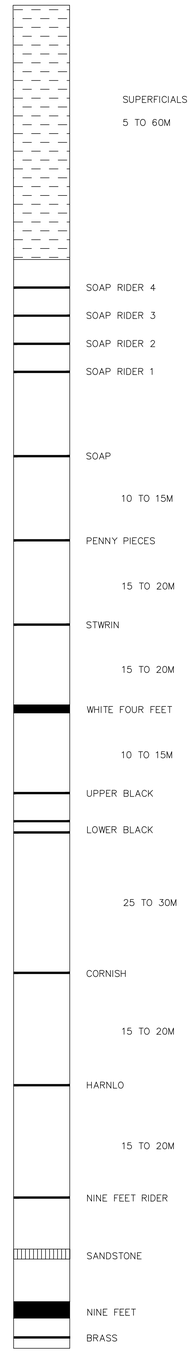


Vertical Sections



Legend

- SITE BOUNDARY (Centre of symbol to be taken as boundary of site)
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
- POSITION OF KNOWN OR SUSPECTED ADIT
- 1.3 — FAULT (Throw in Metres, Seam Colour)
- WASHOUT
- AREA OF NO COAL
- OLD WORKINGS (Seam Colour)
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Penny Pieces	Brass
Stwrin	
White Four Feet	
Lower Block Upper Leaf	
Lower Block Lower Leaf	
Cornish	
Harnlo	

NOTES

Shafts (S1 etc.) Refer to Shaft Register

Site Bench Mark	E	N	L
	284236	210268	242.50

LAND TYPE AND USAGE

BEFORE OPERATIONS Rough Pasture

AFTER RESTORATION Rough Pasture

DETAILS OF OVERBURDEN Glacial Drift,Mudstone,Siltstone, Sandstone.

DETAILS OF BACKFILL

NATURE OF COAL Anthracite

OPERATIONAL DATES

AUTHORISED September 1986

COALING COMMENCED June 1987

COALING COMPLETED March 1999

PLANS ISSUED

CELTIC ENERGY LIMITED
Heol Ty Aberaman, Aberaman, Aberdare, Mid Glam CF44 6LX.

SITE NAME

NANT HELEN

TITLE

COMPLETION PLAN

COUNTY	DISTRICT	CIVIL PARISH
POWYS	POWYS	

LOCATION

Drawn by H. Davies	Date 2-08-99	
Checked by	Date	
Scale 1:2500	Sheet 6 of 7	
Drawing No. 7SN0412	Contract Drawing No. 07A04306/F	

Appendix H

2011 Nant Helen Extension Environmental Statement extracts - Celtic Energy

14 HYDROGEOLOGY

14.1 Background

14.1.1 The existing Nant Helen Extension OCCS involves the excavation of coal seams extending between the Soap Rider 2 and Nine Feet seams in a series of north-west/south-east orientated panels. The site is progressing in a south-westerly direction.

14.1.2 The proposed extension will involve the excavation of the same sequence of strata as in the current site and continue to intersect previous surface mine workings in the Abercrave/Gwaunton site (within which excavation extended to the Upper Black seam), and abandoned underground workings in the Cornish and Nine Feet seam.

14.1.3 The proposed site will be operated in the same manner as the existing site and would form a contiguous extension to it.

14.2 Site Location

14.2.1 The proposed site is located immediately to the west of the existing site and extends in a westerly direction by up to 500 metres as shown in Figure 14.01.

14.3 Topography and Surface Features

14.3.1 The land within the proposed excavation area is generally inclined towards the north-west and, with the exception of a very minor area at the south-eastern extremity of the site (which is open moorland), is currently covered by a coniferous plantation.

14.3.2 To the south-east and south of the site boundary, the land rises and comprises open moorland which similarly falls towards the north-west, see Figure 14.02.

14.3.3 The western boundary of the site is defined by a stand-off from a disused railway line which is now used as a public cycleway. To the west of the cycleway the forestry is replaced by open fields which gently sweep down to the River Tawe.

14.4 Hydrology (see also Chapter 13)

14.4.1 The principal water feature in the general area is the River Tawe which at its closest lies approximately 370 metres to the north-west of the site boundary and generally flows in a south-westerly direction. The existing site and proposed extension both lie within the catchment of the River Tawe and are located on its south-eastern valley side.

14.4.2 Two small north westerly flowing watercourses flow through the proposed extension area. The northernmost watercourse, i.e. Nant Pen-Rhos, has been affected by both the earlier Abercrave/Gwaunton and current sites. The more southerly of the two routes (the former Nant Gyrlais) lies within the proposed extension area and has not so far been affected by the current operations, but does lie on a restored route across the Abercrave/Gwaunton OCCS.

14.4.3 Lying immediately outside of the southern boundary of the excavation, is the diverted watercourse now known as the Nant Gyrlais. This is fed by surface run-off and groundwater emergences from higher ground to the east.

14.4.4 Details on surface hydrology are contained within the report compiled by Merebrook Consulting (see Chapter 13).

14.5 Water Features

14.5.1 As noted, almost the entire proposed extension area is covered by dense coniferous plantation within which there are very limited surface water features present.

14.5.2 Details of identified surface water features within 500 metres of the proposed excavation are contained within Appendix I1 of this report.

14.5.3 There will be no impacts of any significance on any of the identified features.

14.6 Excavation Sequence

14.6.1 Surface deposits which will be intersected during operations include glacial drift and old surface mine backfill associated with the Abercrave/Gwaunton OCCS, details of which are shown in Figure 14.01. Beneath the surface deposits Coal Measures extending downwards to the Nine Feet seam will be excavated

Glacial Drift Deposits

14.6.2 It is expected that glacial drift deposits will be encountered within the proposed excavation area.

14.6.3 No detailed information exists which defines the precise sedimentological make-up of the deposit. However, it is likely that the deposits will be broadly similar to those intersected in the present site and exposed in the existing western excavation faces. The deposits can be observed to comprise dark grey brown, stiff, sandy clay with scattered sub-angular boulders and occasional minor discontinuous sandier horizons which contain insignificant amounts of groundwater.

Head

14.6.4 No head deposits have been identified and are considered unlikely to be present.

Previous Surface Mine Deposits

14.6.5 Previous surface mine deposits associated with the Abercrave/Gwaunton site, within which seams extending from the Soap Rider 2 down to the Upper Black seam were excavated, will continue to be intersected, exposed along the northern and western sidewalls. The deposits will comprise a mix of Coal Measures, mudstones, sandstones, siltstones and seatearths and may contain minor discontinuous water-bearing pockets.

14.6.6 The area of previous surface coal mining operations associated with the Abercrave/Gwaunton site is shown in Figure 14.01.

14.6.7 The thickness of the deposits will vary between 40 to 60 metres at their thickest, tapering westwards towards the incrop position of the Lower Black seam - see cross sections in Figures 14.03 and 14.04.

Solid Measures

14.6.8 The solid Coal Measures strata will consist of a number of cyclic sequences (cyclothems) principally comprising mudstones/siltstones with coal seams, seatearths and sub-ordinate sandstone horizons, the thickest of which occurs above the Nine Feet seam. The sequence is classified by the Environment Agency Wales as a secondary aquifer of no significance with respect to groundwater resources but with potential local importance.

14.6.9 Potential for the occurrence of minor perched aquifers exists within some of the coal seams and minor sandstone/siltstone horizons though during the operation of the current site no horizons of note have been identified. If any strata water is encountered, it is likely (due to the structurally disturbed nature of the site), to be discontinuous and with low volumes.

14.7 Structural Geology

14.7.1 Within the general area the principal structural features are north-north-west/south-south-east orientated normal faults such as the Pwllau Bach which is located approximately 2 kms to the east.

14.7.2 The macroscopic structure is relatively simple comprising strata which dip towards the west and south-west at a gentle gradient of 1 in 7 to 1 in 10.

14.7.3 At a smaller scale, the existing site is significantly disturbed by low angle thrust faulting and monoclinal, isoclinal and recumbent folding with a north-east/south-west axial trend.

14.8 Sequence of Measures

14.8.1 The proposed excavation sequence with separation intervals is shown in Table 14.1 below. The base of the proposed excavation is represented by the Nine Feet seam, seam contour details for which are shown in Figure 14.05.

Table 14.1 Seam sequence and intervals

Seam	Approximate Interval
Soap Rider 2	
	8-10 metres
Soap Rider 1	
	15 metres
Soap	
	20-25 metres
Stwrin	
	10-12 metres
White Four Feet	
	10 metres
Upper Black	
	15-17 metres
Cornish	
	10-12 metres
Harnlo	
	10 metres
Nine Feet Rider	
	20 metres
Nine Feet	

14.9 Previous Mineworkings

14.9.1 The proposed excavation area has been affected by previous surface and underground coal mining operations, none of which are now operational, but may have a localised impact upon stability and seam working.

14.9.2 Significant mining operations for other minerals, i.e. ironstone, are not recorded in the immediate area, though do occur in the Coal Measures sequence within the wider geographical area.

Underground Mineworkings

14.9.3 Within the proposed excavation area previous underground mineworkings at the Nine Feet seam horizon associated with the Ynyscedwyn Colliery will be intersected in the area indicated in Figure 14.06. Currently these workings are isolated from those being worked through in the existing site by an in-situ underground barrier which comprises an un-worked block of solid strata. In addition, areas of previous underground mineworkings at a higher level in the Cornish seam will be intersected.

14.9.4 Previous mineworkings in the Brass seam, which lies approximately 15 to 18 metres below the Nine Feet, occur but will not be intersected by the proposed operations.

14.9.5 There are three drainage adits in the general area, which control the outflow of underground mineworkings water, the locations of which are shown in Figure 14.06.

14.9.6 To the north is the Yard Adit which is located at a level of approximately 122.5 metres AOD (associated with the International colliery). In the central area (and of relevance to the current operating site) is the Gwaun Clawdd Adit, which is located at a level of 106.1 metres AOD and associated with the Gwaun Clawdd colliery. The southernmost adit is the Cwm Du Adit which is located at a level of approximately 93.6 metres AOD and associated with the Ynyscedwen colliery. All three of the above adits drain into the River Tawe.

14.9.7 The current operation requires sump pumping to be undertaken with all water flowing through the site water treatment facility and then to the north-north-west and into the River Tawe. There is potential for natural drainage from the site due to the disposition of the Nine Feet contours which are favourably orientated in the north-eastern part of the site. Any natural flow from the site would be via the Gwaun Clawdd drift, a cross-measures decline drift which accesses the Nine Feet seam workings.

14.9.8 The current site is in the process of removing the in-situ barrier at Nine Feet seam level between the Gwaun Clawdd and Ynyscedwen workings. The removal of this barrier is likely to result in an increase in the discharge volume from the Cwm Du adit which is located at a lower elevation than the Gwaun Clawdd adit, i.e. 93.6m AOD versus 106.1m AOD respectively.

14.9.9 Whilst underground barriers between the various sets of workings isolated the individual collieries, within the mining blocks there is clear evidence of the inter-connection between mineworkings at various seam horizons, specifically between the Brass and Nine Feet. The implications of this are that below the lowest level at which Nine Feet workings are intersected in the proposed excavation the Brass seam workings will be flooded. In addition, all water entering the Brass workings located to the east and at a higher level than the lowest intercept point in the Nine Feet workings will flow into the base of the excavation void.

Surface Workings

14.9.10 The current operating site has been progressively working through old surface mine backfill deposits associated with the Abercrave/Gwaunton site. The proposed extension will similarly involve the re-excavation of old surface mine backfill associated with the same site.

14.9.11 The previous level of excavation was down to the pavement of the Upper Black seam which lies approximately 60 metres above the Nine Feet.

14.9.12 No significant groundwater is expected to be intersected in the backfill deposits. Groundwater, if any is encountered, is likely to be of limited volume and will almost certainly occur in isolated discontinuous zones, as is commonly the 'norm' for such deposits.

14.10 Site Investigation

14.10.1 Exploratory drilling over the south-western and south-eastern parts of the site was undertaken by British Coal leaving a significant central section with no exploration boreholes within it. Nevertheless, the working of the Abercrave/Gwaunton site confirmed the borehole data relevant to that site.

14.10.2 The area with no borehole cover is that within which the backfill deposits associated with the Abercrave/Gwaunton site occur. Strike water levels were noted in the boreholes and give an indication of the impact of the underground mineworkings barriers between the various mines on minewater. Boreholes are shown in Figure 14.07.

14.11 Piezometer and adit drainage data

Piezometers

14.11.1 Information for two piezometers (installed in the late 1990s with monitoring data extending back to 2003) located in Boreholes 3091 and 3092 indicates average water levels of 108.15 and 98.75 metres AOD respectively with a variation of between 109.04 and 101.96 in BH 3091, and 102.56 and 98.8 in BH 3092.

14.11.2 Borehole 3091 is located in the Gwaun Clawdd colliery workings, at Brass seam level, and Borehole 3092 in the Ynyscedwen colliery workings, at the Nine Feet level. The locations of both boreholes are shown in Figure 14.07 and are located along the bed of the dis-used railway line beyond the western site boundary.

14.11.3 Underground mineworkings abandonment plan information indicates linkage between the Brass and Nine Feet workings, the implications of which are indicated in section 14.9.

14.11.4 Monitoring data extending from March 2003 to November 2010 are shown in Appendix I2, Table No. 2.

14.11.5 The data show a reasonable consistency in the level recorded in the piezometer located in Borehole 3092 - varying between approximately 102 and 99 metres AOD, which shows a correlation with water level in the operating void sump.

14.11.6 A similar level of consistency can be seen in the piezometer located in Borehole 3091. A future potential drop in level may occur and would be of significance as it is

likely to correspond with the underground barrier between abandoned mineworkings in the Nine Feet seam in Gwaun Clawdd and Ynyscedwen collieries being breached by the current surface mining operations.

Drainage Adits

14.11.7 The discharge of water from three adits, the Yard, Gwaun Clawdd and Cwm Du, has been regularly monitored, data for which are shown in Appendix I2, Table No.2. The locations of the three adits are shown in Figures 14.06 and 14.08-10.

14.11.8 Field observations indicate that a noticeable reduction in flow rate from the Yard Adit has occurred from June 2010 and is likely to be related to pumping activity in the active site. For the Gwaun Clawdd Adit, significant reductions in the recorded flow rates from this adit have been recorded since November 2007, and since May 2010 minimal flow volumes have been noted. This reduction in flow corresponds with the current site's pumping operations whereby the water levels in the site have been at 95 to 110 metres AOD. The level at the Gwaun Clawdd outflow is 106.1 metres AOD. There is, therefore, direct linkage between the outflow and excavation activity at the Nine Feet horizon in the active site. For Cwm Du Adit, flow rates have remained reasonably consistent, allowing for normal acyclic trends. It is anticipated that with the breach of the underground barrier between the Gwaun Clawdd and Ynyscedwyn workings that flow will increase from the Cwm Du adit.

14.12 Hydrogeological characteristics of site deposits

14.12.1 The site lies in an area of high rainfall which over the past 3 years has seen an increase from 1.78 metres in 2007 to 2.28 metres in 2009, as of the end of November the total was 1.46metres. The rainfall commonly occurs in high intensity episodic events.

14.12.2 Due to a history of previous surface and underground mineworkings (and current surface workings) the site hydrogeology has been fundamentally altered and complicated. Within the proposed extension area there are potentially three distinct units, each of which is likely to have its own distinct hydrogeological character. They are:

- Un-disturbed superficial glacial deposits;
- Old surface mine backfill, and
- Coal Measures strata

Glacial Deposits

14.12.3 Good exposures of glacial deposits are available along the western advance face in the currently operating site and based upon experience within the site no significant variations have been recorded. Generally the deposits comprise a stiff, sandy clay with cobbles, boulders and fine gravel primarily consisting of sandstone clasts.

14.12.4 Minor discontinuous water-bearing sandy lenses and bands occur. No significant water-makes are evident though occasional discontinuous 'damp' patches can be observed along with minor scour failure cones around sandy horizons.

Old Surface Mine Backfill

14.12.5 The deposits can be clearly observed in the current operating site and are seen as typical surface mine backfill deposits comprising an irregular inhomogeneous mass of angular clasts of variable size of varying materials set in a moderately cohesive matrix.

14.12.6 Again, no significant water-makes / inflows from the deposits can be observed, though occasional minor seepages have been noted in the past. It is possible that some surface water infiltration into the deposits occurs, quantities of which may eventually emerge at lower levels as the ground falls away towards the north-west.

Coal Measures Strata

14.12.7 The Coal Measures strata are defined as a minor aquifer with the sequence containing a number of horizons which may potentially contain perched water. Generally such aquifers have low storativity and transmissivity. This is in contrast to the significant volumes of water and highly transmissive nature of the network of underground mineworkings at the various seam horizons, i.e. Cornish, Nine Feet and Brass.

14.12.8 Whilst in general terms the Coal Measures sequence is classified as an aquifer of no significance, where disturbed by underground mineworkings activity its water bearing potential can be radically changed. The collapse of the strata above mineworkings can give rise to enhanced fragmentation which may result in a significant increase in the strata's water-bearing capacity.

14.12.9 As noted in Section 14.1, the various Nant Helen sites which have progressed from north-east to south-west along seam incrops have intersected a series of abandoned underground mineworkings associated with the International, Gwaun Clawdd and Ynyscedwen collieries. The surface coal mine sites have been contiguous and as a result involved the breaching of underground in-situ barriers between the collieries leading to connection.

14.12.10 An assessment of borehole standing water levels as recorded (1997) in the above colliery blocks recorded 124.44m in International workings, 108.17m in Gwaun Clawdd workings and 100.52m AOD in Ynyscedwyn workings, i.e. decreasing levels, as followed to the south-west.

14.13 Comments on the validity of the previous Hydrogeological Model

14.13.1 A detailed hydrogeological assessment was undertaken as supportive documentation to the planning application associated with the current site. The key controlling element in the model was identified as the abandoned underground mineworkings which, prior to surface mining operations removing in-situ barriers, were hydraulically isolated from one another (other than the possibility of minor leakage occurring). The current site is working through the barrier between the Gwaun Clawdd and Ynyscedwyn workings.

14.13.2 It is expected that once the underground barrier is breached that there could be a drop in the recorded water level in piezometer 3091 which is located in Nine Feet workings associated with Gwaun Clawdd workings. Figures 14.08 to 14.10 which are associated with the application documentation for the current site, show existing conditions, conditions during the operational phase and conditions post-restoration respectively. The plans are based upon an assessment of underground mineworkings

barriers, seam contours, horizon interconnection and the influence of existing drainage adits.

14.13.3 From the plans it can be seen that the breaching of the underground barriers will result in a change in the flow pattern involving a larger element of water flowing towards the Cwm Du adit. It is considered likely that the model will hold true for the proposed site. The principal change, i.e. breach of mineworkings barrier, will occur in association with the currently consented site.

14.13.4 The monitoring of flow rates at the three drainage adits will continue during the life of the proposed extension site and its is expected that a trend towards an increased flow through the Cwm Du adit and potential reduction in the Gwaun Clawdd adit will occur. A test of the validity of the model has yet to occur but with the breach of the barrier between the Gwaun Clawdd and Ynyscedwen workings, resulting from the mining advance programmed for early 2011, the original hydrogeological assessment for the site can be validated.

14.13.5 It should be noted that there has been a recent flow of water into the void from the Nine Feet horizon along the western and north western sides of the site which may be confirmation of the validity of the anticipated hydrogeological model as shown in Figure 14.09 i.e. Hydrogeological Model – Operational Phase. Conditions will be continually monitored as the site develops.

14.14 Protected rights search

14.14.1 The Environment Agency Wales has been consulted for information with respect to licensed abstractions within a 1.5 kilometres search radius of the site centre. Details are contained in Appendix I3.

14.14.2 In summary, the only licensed feature within close proximity to the site is the reservoir at Gwaunclawdd Farm, Caerlan (water feature number 23). The feature is likely to have been formed on glacial boulder clay and therefore will not be affected by the proposed operation. Other licensed features occur at some distance to the north west of the site and are not likely to be affected by the proposed operation. There is one de-regulated which is a an abstraction from a spring ,the water from which flows into the river Tawe, and the others comprise a farm abstraction, a pond, a reservoir and abstractions from a tributary to the River Tawe. The features lie closer to the currently operating site and there are no reports of them having been affected by it.

14.14.3 In addition, under the Private Water Supplies Regulations 1992, the local authority has been consulted for details of exempt private water supplies in the area. There are no records of any interests in close proximity of the site.

14.15 Likely impacts of proposed operations on groundwater

14.15.1 As noted in Section 14.6, a number of material types with potentially very different hydrogeological characteristics and groundwater regimes contained within occur.

14.15.2 Within the superficial and old surface mine backfill deposits it is highly unlikely that there will be any groundwater systems of significance. Groundwater, if intersected, is likely to be low volume and without any appreciable flow rate, other than potentially an initial flow which reduces rapidly as pockets are de-watered, a phenomenon which has often been observed in working areas within the operating sites.

14.15.3 Within a 500 metres zone (an assumed zone beyond which it is highly un-likely that there could be any potential impacts associated with the proposed operation) extending beyond the proposed limit of excavation at surface minor diffuse seepages are evident from the rising moorland areas to the east and south-east of the site, and are thought likely to represent the outcrop position of minor sand horizons contained within the Glacial Drift. These features will not be affected by the proposed extension as their re-charge areas lie to the east and south of the emergence points.

14.15.4 There is no known hydrogeological connection between the operations at the site and any area of statutory protection.

14.15.5 Within the solid measures, and based upon experience in the currently operating site, it is unlikely that any significant strata inflows will occur. The major source of water inflow will be via the system of previous underground mineworkings roadways, extraction cavities and broken strata which overlie the worked areas.

14.15.6 The principal consequence associated with mining through the various areas of previous underground mineworkings in the extension area will be no different from within the currently consented operation.

14.15.7 It is possible that with the breach of the underground in-situ barrier at the Nine Feet seam horizon there will be an increase, during the operational phase, in the outflow from the Cwm Du adit with a decrease in the Gwaun Clawdd. The possible increase in outflow rate cannot be easily predicted though will be monitored during the operational phase of the site.

Post-Restoration rebound

14.15.8 Following the completion of coaling operation the final void will be infilled with overburden and the site restored to the consented restoration landform.

14.15.9 Infiltration into the backfill deposits to a greater or lesser extent may occur and therefore the deposits may or may not contain groundwater which may be affected by drainage via the Cwm Du adit. The lowest projected level of excavation at Nine Feet level in the proposed extension will be approximately 76 metres AOD which is approximately 17 metres below the level of the Cwm Du adit (93.6m AOD). If there is significant infiltration into the backfill, there will potentially be saturation below 93.6 metres AOD. It is likely therefore that upon restoration and groundwater re-bound in the backfill, some increased outflow from the Cwm Du adit will occur.

14.15.10 Due to the character of surface mine backfill with respect to its ability to contain and allow the passage of water, it is not possible to predict accurately whether there will be a significant build up of water level above that of the Cwm Du adit (93.6m AOD). It is possible that water levels could build up against the excavation sidewall along the western site boundary leading to infiltration into the strata which form the wall.

14.15.11 However, any seepage through the sidewall is likely to be via coal seam horizons in the excavation sequence and possibly sandy horizons contained within the overlying glacial drift deposits.

14.15.12 A programme of groundwater monitoring will be proposed 12 months before the completion of operations at the site. It is possible that this may involve the installation of a number of standpipe piezometers within areas of backfill.

14.15.13 The potential consequences of a re-bound in groundwater levels may be a re-activation of original spring-lines or the formation of new points of groundwater emergence.

14.15.14 As a part of the scheme it will be necessary to undertake a programme of post-restoration monitoring to identify any incidences of groundwater rebound and emergence at surface, and implement control measures as required.

Acid Rock Drainage Potential (ARD)

14.15.15 Within Coal measures strata varying quantities of pyrites (iron sulphide) can occur, typically associated with carbonaceous shales and coal seam horizons. Upon exposure to air the sulphide oxidises and converts into a water soluble oxide which in contact with water goes into solution with the effect of acidifying the water. The effects of the acidifying property of pyrites can be counter-balanced by the presence of carbonate rich minerals.

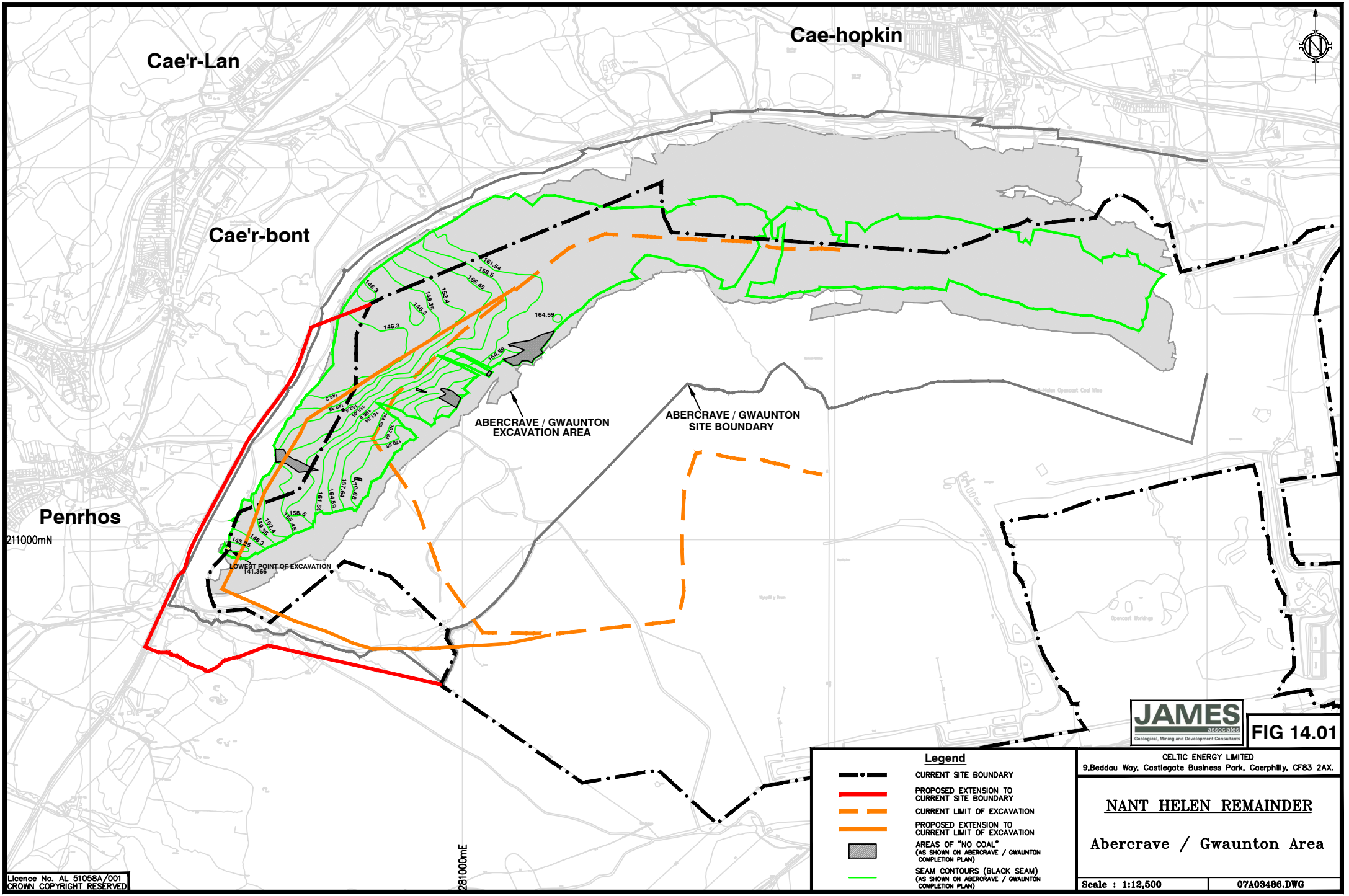
14.15.16 The excavation sequence in the proposed extension site is the same as that which is extracted in both the current and previous sites, associated with which there have been no recorded problems relating to acid rock drainage, primarily due to the presence of acid neutralising carbonate rich minerals contained within the sedimentary sequence. It is therefore anticipated that there will be no ARD problems arising as a consequence of the proposed operation.

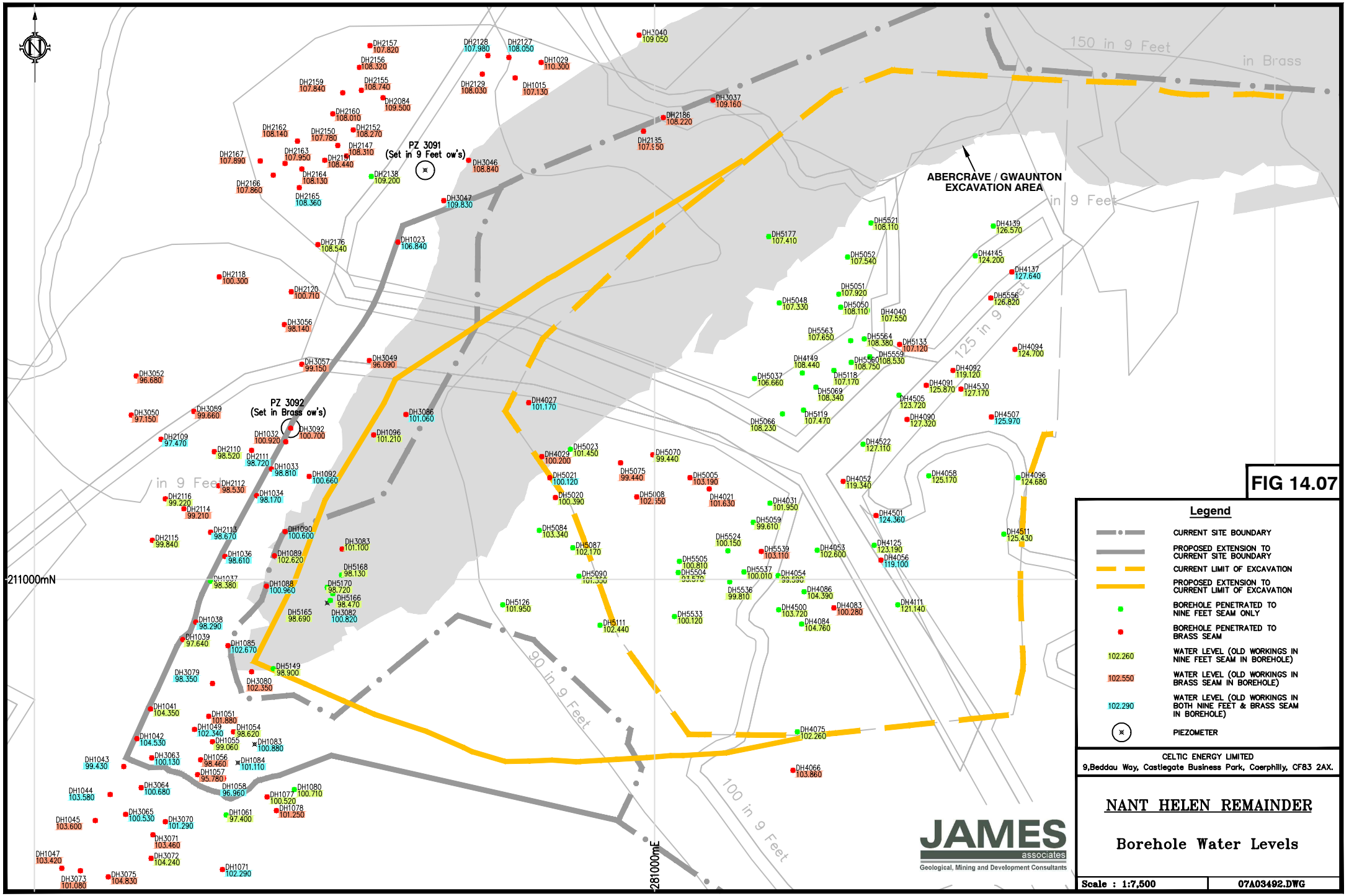
14.16 Monitoring.

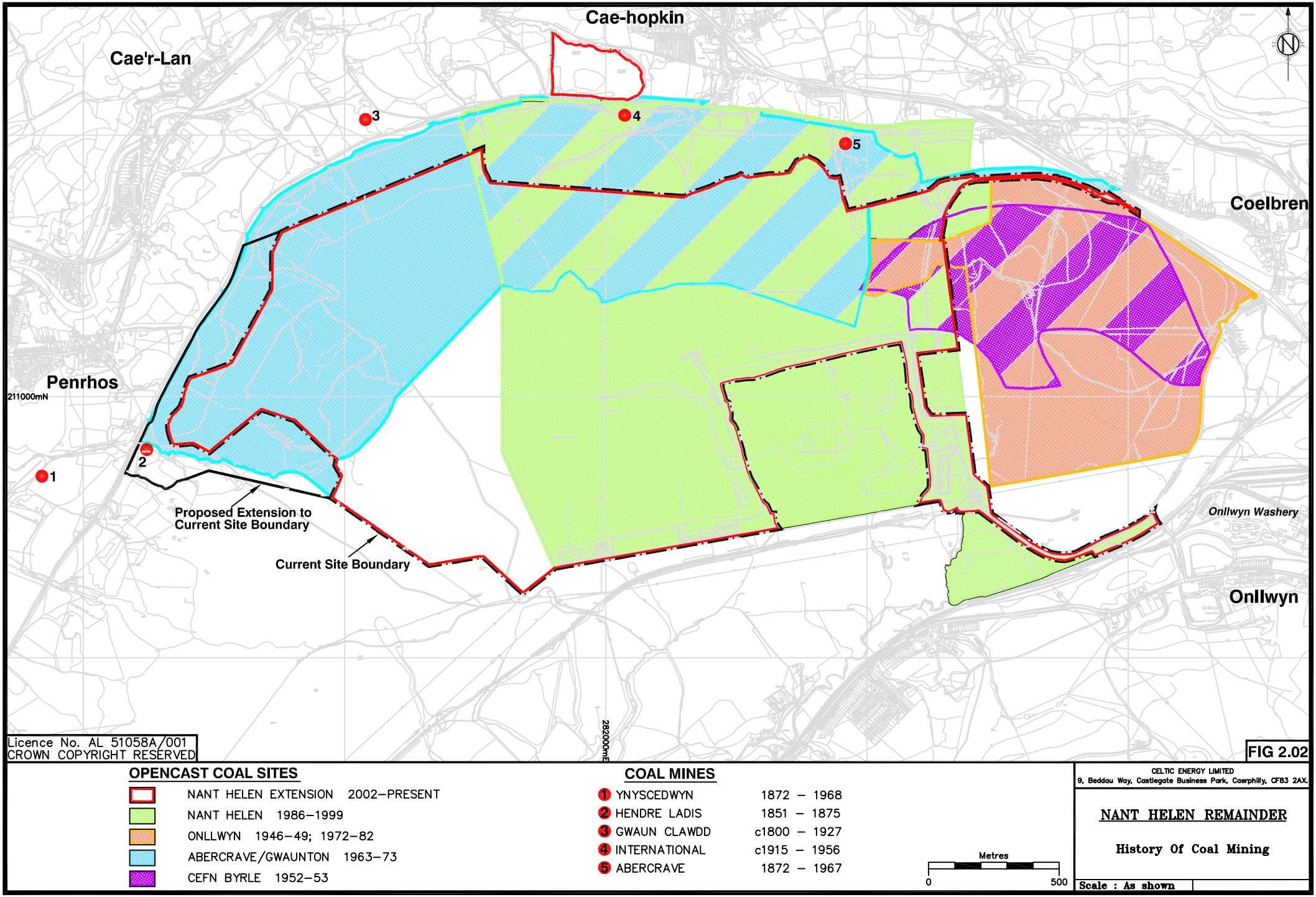
14.16.1 A scheme of monitoring will be agreed with the Environment Agency Wales no later than 12 months before the completion of coaling on the site. In the interim routine monitoring of piezometers and the three drainage adits will be undertaken and results submitted to the EAW on an annual basis or whatever frequency is reasonably requested.

14.17 Conclusions

14.17.1 On the basis of the above assessment of hydrogeology, it is concluded that the proposed Nant Helen Remainder site will not cause any additional impact than that predicted for the current site. Old underground mine workings will control the drainage from the site and upon restoration.


Cae'r-Lan
Cae-hopkin
Cae'r-bont
Penrhos
211000mN
281000mE
ABERCRAVE / GWAUNTON EXCAVATION AREA
ABERCRAVE / GWAUNTON SITE BOUNDARY
LOWEST POINT OF EXCAVATION 141.366
Legend
CURRENT SITE BOUNDARY
PROPOSED EXTENSION TO CURRENT SITE BOUNDARY
CURRENT LIMIT OF EXCAVATION
PROPOSED EXTENSION TO CURRENT LIMIT OF EXCAVATION
AREAS OF "NO COAL" (AS SHOWN ON ABERCRAVE / GWAUNTON COMPLETION PLAN)
SEAM CONTOURS (BLACK SEAM) (AS SHOWN ON ABERCRAVE / GWAUNTON COMPLETION PLAN)
JAMES associates
Geological, Mining and Development Consultants
FIG 14.01
CELTIC ENERGY LIMITED
9,Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX.
NANT HELEN REMAINDER
Abercrave / Gwaunton Area
Scale : 1:12,500
07A03486.DWG
Licence No. AL 51058A/001
CROWN COPYRIGHT RESERVED


PZ 3091
(Set in 9 Feet ow's)
PZ 3092
(Set in Brass ow's)
ABERCRAVE / GWAUNTON
EXCAVATION AREA
150 in 9 Feet
in Brass
in 9 Feet
125 in 9 Feet
90 in 9 Feet
100 in 9 Feet
211000mN
281000mE
FIG 14.07
Legend
CURRENT SITE BOUNDARY
PROPOSED EXTENSION TO CURRENT SITE BOUNDARY
CURRENT LIMIT OF EXCAVATION
PROPOSED EXTENSION TO CURRENT LIMIT OF EXCAVATION
BOREHOLE PENETRATED TO NINE FEET SEAM ONLY
BOREHOLE PENETRATED TO BRASS SEAM
102.260 WATER LEVEL (OLD WORKINGS IN NINE FEET SEAM IN BOREHOLE)
102.550 WATER LEVEL (OLD WORKINGS IN BRASS SEAM IN BOREHOLE)
102.290 WATER LEVEL (OLD WORKINGS IN BOTH NINE FEET & BRASS SEAM IN BOREHOLE)
PIEZOMETER
CELTIC ENERGY LIMITED
9,Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX.
NANT HELEN REMAINDER
Borehole Water Levels
JAMES associates
Geological, Mining and Development Consultants
Scale : 1:7,500
07A03492.DWG


Cae-hopkin
Cae'r-Lan
Coelbren
Penrhos
211000mN
Onllwyn
Onllwyn Washery
1
2
3
4
5
Proposed Extension to Current Site Boundary
Current Site Boundary
282000mE
Licence No. AL 51058A/001
CROWN COPYRIGHT RESERVED
FIG 2.02
OPENCAST COAL SITES
NANT HELEN EXTENSION 2002–PRESENT
NANT HELEN 1986–1999
ONLLWYN 1946–49; 1972–82
ABERCRAVE/GWAUNTON 1963–73
CEFN BYRLE 1952–53
COAL MINES
1 YNYSCEDWYN 1872 – 1968
2 HENDRE LADIS 1851 – 1875
3 GWAUN CLAWDD c1800 – 1927
4 INTERNATIONAL c1915 – 1956
5 ABERCRAVE 1872 – 1967
Metres
0
500
CELTIC ENERGY LIMITED
9, Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX.
NANT HELEN REMAINDER
History Of Coal Mining
Scale : As shown

0 200 400 600 800m

N

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Abercrave
Cae'r-Lan
Cae'r-bont
Cae-Hopkin
Coelbren
Penrhos
Onllwyn
Seven Sisters
BRECON BEACONS NATIONAL PARK
Afon Tawe
A4067
A4221
B4599
A4109
Nant Llech
Sustrans Cycle Track
POWYS
NEATH PORT TALBOT
Dulais
Restored Derelict Land (2010)
Restored Land (1993 - 1998)
Restored Land (1980 - 1990)
Restored Land (1995 - 2000)
Restored Land ('95 - '00)
Overburden Storage Area
Existing Void
Surcharge Mound
Soil Mound
Soil Mounds
Plant Maintenance Area
Coal Stocking Area
Main Site Access
Site Access (Coal traffic)
Onllwyn Washery
Managed Land
COAL HAUL ROUTE
WATER TREATMENT AREA
Air shaft (Listed building & Scheduled Monument)

Key

- Site boundary
- Proposed extraction void
- Brecon Beacons National Park boundary
- Unitary Authority boundary
- Site contours @ 4m intervals
- Surrounding contours @10m intervals
- Steep slopes within extension site
- Existing footpath
- Existing bridleway
- Suspended footpaths within site
- Existing SUSTRANS cycle route
- Proposed SUSTRANS cycle route
- Existing CROW Open Access Land
- Broadleaved Woodland
- Coniferous Woodland
- Scrub
- Unimproved Grassland
- Natural Wetland: Bog, Fen & Swamp
- Improved Agricultural Grassland
- Upland Grazing Grassland
- Tips
- Playing Fields and Outdoor Sports Facilities
- Amenity Greenspace
- Domestic Gardens
- Cemeteries & Churchyards
- Rivers, Streams and Ponds

CELTIC ENERGY LIMITED
9, Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

Project:

Nant Helen Remainder

Drawing Title:

Site Context

Drawing No.	Drawn by TP	Date December 2010
10.02	Scale @ A3 1:14,000	Revision -

wyg.

CELTIC ENERGY