

Appendix E.2

Minerals Resource Assessment





Bodelwyddan Solar and Energy Storage

Mineral Resource Assessment Desk Study

On behalf of **Bodelwyddan Solar and Energy Storage Ltd**

Project Ref: 333101605 / 3501 | Version: 01 | Date: July 2025

Registered Office: Stantec House, Kelburn Court, Birchwood, Warrington WA3 6UT
Office Address: Caversham Bridge House, Waterman Place, Reading, Berkshire RG1 8DN11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG
T: +44 (0)118 950 0761 E: Reading.uk@stantec.comNorthampton.uk@stantec.com

Document Control Sheet

Project Name: Bodelwyddan Solar and Energy Storage

Project Ref: 333101605

Report Title: Minerals Resource Assessment Desk Study

Doc Ref: 333101211 - 3501 (Minerals DS) - Revision 01

Date: July 2025

	Name	Position	Signature	Date
Prepared by:	Luke Janett	Principal Engineer		03/12/24
Reviewed by:	Lawrence Truslove	Associate Engineer		03/12/24
Approved by:	Catherine Copping	Technical Director		03/12/24
For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
00	03/12/2024	Issue 01 - Final	LJ	LT	CC
01	04/07/2025	Amended following revisions to red line boundary	NH	GS	GS

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Contents

1	Introduction.....	1
1.1	Brief	1
1.2	Site Location	1
1.3	Background	1
2	Site Setting	3
2.1	Site History	3
2.2	Mining History on Site	3
2.3	Published Geology	3
2.4	Hydrological Setting.....	6
2.5	Hydrogeological Setting	6
3	Mineral Assessment.....	6
3.1	Mineral Planning Policy	7
3.2	BGS Mineral Maps	14
3.3	Sterilisation of Mineral Resources	15
4	Conclusions	17

Appendices

Appendix A – Conwy County Borough Council Land Development Plan - Map 5 East
Appendix B – County Denbighshire – County Key Map
Appendix C – Mineral Resource Map – North Wales
Appendix D – Aggregate Safeguarding Map – North Wales

This page is intentionally blank

1 Introduction

1.1 Brief

- 1.1.1 Stantec UK Ltd. (Stantec) has been commissioned by Bodelwyddan Solar and Energy Storage Ltd (the Client) a Special Purpose Vehicle (SPV) owned by Island Green Power UK Limited, to prepare a qualitative Minerals Resource Assessment Desk Study for the development of a proposed solar photovoltaic (PV) electricity generating system and battery energy storage system (BESS), associated solar arrays, inverters, transformers, cabling, substations, access tracks, landscaping and ecological enhancements, fencing/CCTV and associated ancillary development for 40 years (the Proposed Development) within land predominantly to the north-west of Bodelwyddan and St. Asaph in Conwy and Denbighshire, Wales (the Site).

1.2 Site Location

- 1.2.1 The Site location is presented on **Figure 1**, as shown within the Site Location Plan (Ref 01), which shows the Scheme across the BESS and Solar Site.
- 1.2.2 The land currently being considered for the Scheme, consists of multiple land parcels totalling approximately 183.77 hectares (370 acres) located approximately 3 km to the south-west of Rhyl, between the towns of Towyn, (County Conwy) and Bodelwyddan (County Denbighshire). The Point of Connection (POC) to the national power grid substation is located 2.5 km south-east of Bodelwyddan and approximately 2 km west of St Asaph in County Denbighshire.

1.3 Background

- 1.3.1 The BGS mineral resource map for the area¹ shows that there are a number of mineral resources in the counties of Conwy and Denbighshire.
- 1.3.2 The minerals planning policies covering the Site include the Conwy County Borough Council (CCBC) Local Development Plan², CCBC Replacement Local Development Plan (RLDP)³ and the Denbighshire County Council (DCC)

¹ Mineral Resource Map of North East Wales. Morley, C., Shaw, R.A., Bide, T.P., Humpage, A.J., Davies, J.R. and Lott, G.K. OR/10/022. British Geological Survey. 2010.

² CCBC, 2013, Conwy Local Development Plan 2007-2022. Available online at <https://www.conwy.gov.uk/en/Resident/Planning-Building-Control-and-Conservation/Strategic-Planning-Policy/Adopted-Local-Development-Plan-LDP/Assets-written-proposals-maps/Conwy-Local-Development-Plan-2007-2022.pdf>, accessed October 2024.

³ CCBC, 2023, Replacement Development Local Plan. Available online at <https://www.conwy.gov.uk/en/Resident/Planning-Building-Control-and-Conservation/Replacement-LDP/Stage-5-Preferred-Strategy/assets/documents/Preferred-Strategy-web.pdf>, accessed October 2024.

Adopted Land Development Plan (LDP)⁴.. These policies are based on the Welsh Government Planning Policy, Section 5.14 Minerals⁵.

1.3.3 This report comprises a first stage (qualitative) desktop study. The report describes the geology of the Site and presents an initial assessment of the potential mineral resources and resultant potential sterilisation from development based on a review of the BGS mineral maps for North Wales, the county planning maps and the following reports and information:

- Geological data from the British Geological Survey (BGS), including published mapping^{6,7} historical borehole records and other publications/ data sets in the public domain⁸.
- Review (undertaken in October 2024) of public domain aerial imagery of the Site and surrounding land via the Google Earth and OS Maps.

1.3.4 This report represents the first stage in the assessment of the potential mineral resource. Where the initial desktop study suggests that there are significant mineral resources of potential value that are likely to be sterilised by the Proposed Development, a Site-specific investigation would need to be implemented as a second stage of works to inform a quantitative assessment of the mineral reserves.

⁴ DCC, 2013, Local Development Plan Map 32A – St. Asaph Business Park. Available online at <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/adopted-ldp/adopted-ldp-maps/main-centres/st-asaph-business-park.pdf>, accessed October 2024

⁵ Welsh Government, 2024, Planning Policy Wales Edition 12. Available online at <https://www.gov.wales/planning-policy-wales>, accessed October 2024..

⁶ BGS, 2024, GeoIndex Onshore Map Viewer. Available online at <https://mapapps2.bgs.ac.uk/geoindex/home.html>, accessed October 2024

⁷ BGS, 1971, Geological Survey of Great Britain National Grid Series 1:10560/1:10,000 maps sheet SH97NE. Available online at: <https://webapps.bgs.ac.uk/data/MapsPortal/map.html?id=100120075110120075>, accessed October 2024.

⁸ Including online access to the National Geoscience Data Centre collection of scanned borehole, well and shaft records (through the BGS OpenGeoscience website <https://www.bgs.ac.uk/data/boreholescans/home.html>, accessed October 2024).

2 Site Setting

2.1 Site History

- 2.1.1 The Site lies in a largely rural area and the historical Ordnance Survey (OS) mapping as presented in a Groundsure Insight Report procured as part of the Phase 1 Ground Conditions Assessment indicates that the Site has remained as fields, occasionally crossed by waterways, later trained into drains (early 1900s), and minor roads since the late 1800s.
- 2.1.2 There is evidence in the 1830s-1880s map that a Brick Works was present at the eastern edge of the Site, just north-west of the intersection between St Asaph Avenue and Rhuddlan Road (no longer in place by 1937). In addition, there is a battle site in the northern extent of the Scheme where the Saxons and the Welsh fought in 795.
- 2.1.3 The 1944-1973 OS maps indicate that a Mineral Railway also intersected the main solar development area through the centre (running south-north) from the around the late-1910's to approximately the mid-1960's.

2.2 Mining History on Site

- 2.2.1 A review of the Stantec Cavities Database indicates that there is a mine shaft located within the Solar Site, in the eastern portion of the Site near St Asaph Avenue. However, a review of the Clwyd-Powys Archaeological Trust (CPAT) Historic Environment Records⁹ indicate that the shaft is likely related to the Cefn-yr-Ogof (also known as Gwyrch Castle) Lead Mine (18th-19th century) located 7 km west of the Site. There appears to be an error in the recorded national grid reference which incorrectly plots one of three shafts within the Site.

2.3 Published Geology

- 2.3.1 The bedrock strata present at the Site as mapped and recorded by the BGS is shown in **Extract 2.1** below and described **Table 2.1** and **Table 2.2**.

⁹ CPAT, 2024, CPAT Clwyd Metal Mines Survey – Cefn-yr-Ogof. Available online at <https://www.cpat.org.uk/projects/longer/mines/18038.htm>, accessed October 2024

Extract 2.1: Extract from the BGS Geological Map data for bedrock overlain by the Site boundary.

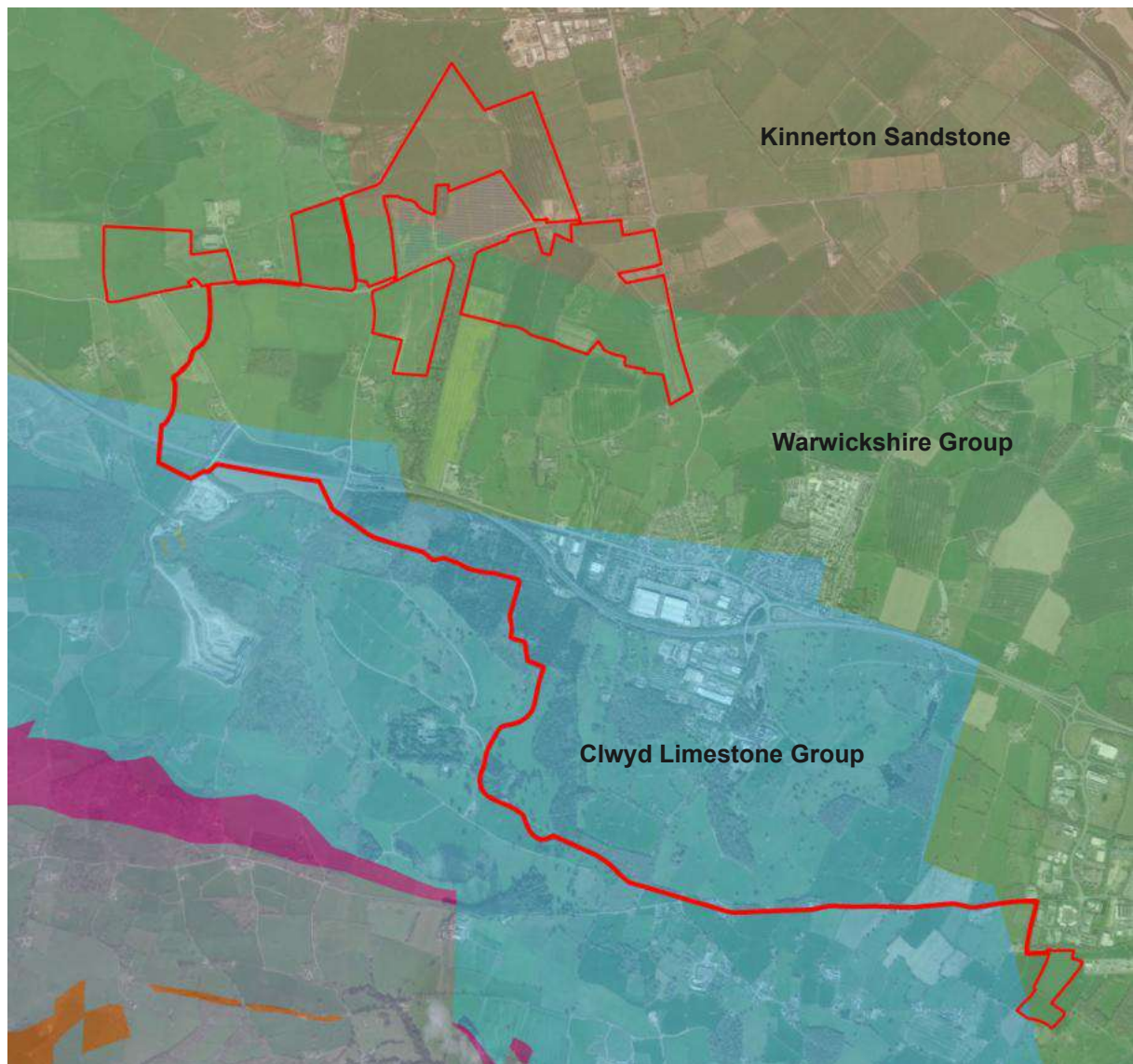


Table 2.1 Bedrock Geology Present on the Site, as Recorded by the BGS.

Stratum	Description	Site Elements
Kinnerton Sandstone Formation Sandstone -	Described by the BGS as: 'Dominantly aeolian... sandstone, red-brown to yellow, generally pebble-free, fine- to medium-grained, cross-stratified'	Underlying the northern half of the Scheme.
Warwickshire Group - Mudstone, Siltstone and Sandstone	Described by the BGS as: 'Predominantly red, brown or purple-grey sandstone, siltstone and mudstone, some grey strata, coals not common, local conglomerates, localised beds of Spirorbis limestone.'	Underlying the southern half of the Scheme, partially underlying the area between the Scheme and BESS and POC where the Cable Corridor may extend and

Stratum	Description	Site Elements
		underlying the majority of the POC.
Clwyd Limestone Group - Limestone	Described by the BGS as: 'A diverse range of limestone facies with subordinate sandstone and mudstone units, and exhibiting local dolomitisation.'	Partially underlying the area where the Cable Corridor may extend and partially underlying the BESS and POC.
*The stratum are listed from youngest to oldest.		

2.3.2 The bedrock strata are overlain over the entire Site and surrounding area by superficial strata. The superficial deposits mapped as present at the Site are described in the table below.

Table 2.2 Superficial Deposits Present On-Site, as Recorded by the BGS

Stratum	Description	Site Elements
Tidal Flat Deposits – Clay, Silt and Sand	Described by the BGS as: “including mud flat and sand flat deposits, form extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit.	Underlying the Scheme and partially underlying the area between the Scheme and BESS and POC where the Cable Corridor may extend.
Till, Devensian – Diamicton	Diamicton is a general term for a sediment that contains a wide range of particle sizes	Partially underlying the area between the Scheme and BESS and POC where the Cable Corridor may extend and underlying the Project Substation and BESS and POC.

2.3.3 The nearest available BGS borehole records are a set of 5 No. boreholes located approximately 300 m from the Site. The boreholes were sunk in the Tidal Flat Deposits to depths of 6 to 16 m bgl (-8 to -12 m OD) with the results generally indicating consistent layering of silty Clay and Sand to the full depth of the investigations.

2.3.4 Around 2 to 4 km south to south-east of the Site, between the Scheme and the BESS and POC (the area where the Cable Corridor may extend), there are a number of boreholes from various historical developments. The boreholes generally indicate that Till is present to variable depths, ranging from 3.5 to 30+ m, with some boreholes recording the bedrock as 'Grey/White Limestone'.

2.4 Hydrological Setting

- 2.4.1 The Site is intersected by a number of artificial drains constructed to drain the groundwater within the Tidal Flat Deposits towards the north-east into the River Clwyd just south of Rhyl.

2.5 Hydrogeological Setting

- 2.5.1 With regard to hydrogeology the Superficial strata underlying the Site are classified as Secondary Undifferentiated (these are aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value) and of low to high groundwater vulnerability.
- 2.5.2 With regard to hydrogeology the Bedrock strata underlying the Site are classified as:
- **Secondary A Aquifer – Warwickshire Group.** Defined as “*permeable strata 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*”.
 - **Principal Aquifer – Kinnerton Sandstone and Clwyd Limestone Group.** Defined as a stratum which exhibits “*high irregular and/or fracture permeability. They usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale*”.
- 2.5.3 The Site is not located within a groundwater Source Protection Zone and no such zones are present within 250 m of the Site (or within the report search radius of 500 m).

3 Mineral Assessment

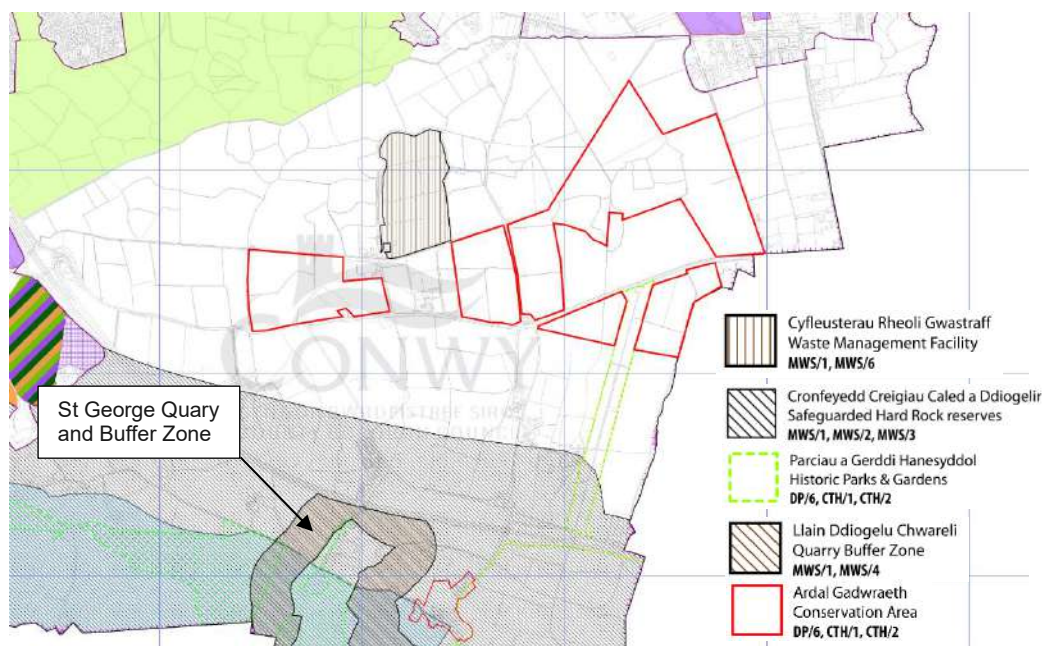
3.1 Mineral Planning Policy

Conwy County Borough Council

Adopted Local Plan

- 3.1.1 **Figure 3.1** below presents an extract from the CCBC Local Development Plan² and shows that whilst the Solar Site is not located within a Mineral Safeguarding Area for any mineral, the proposed Cable Corridor is predominantly located within an area of safeguarded “hard rock reserves”, and also crosses through the St. George’s Quarry buffer zone. The full map (Map 5) is also presented with the Site Boundary overlain in **Appendix A**.

. Figure 3.1 - Extract from the LDP - Map 5 East. The Scheme within CCBC’s administrative area is shown as the approximate red lined area.



- 3.1.2 The LDP (CCBC, 2013) includes the following policies with regard to minerals:

“Strategic Policy MWS/1 – Minerals and Waste

The Council will ensure that there is sufficient provision of mineral resources and waste management facilities, while safeguarding the natural and built environment by:

- a) Safeguarding permitted reserves of hard rock at Penmaenmawr, Raynes (Llysfaen), Llanddulas and St George and additional resources of hard rock as*

identified on the proposals map in line with Policies MWS/2 – ‘Minerals’ and MWS/3 – ‘Safeguarding Hard Rock and Sand and Gravel Resources’;

b) Allowing future extraction of aggregate minerals only where there is a need to maintain stocks of permitted reserves in line with Policy MWS/2;

c) Designating buffer zones around quarries to protect amenity and ensuring that mineral operations are not unduly constrained by other land users in line with Policy MWS/4 – ‘Quarry Buffer Zones’;

d) Safeguarding sand and gravel resources as identified on the proposals map in line with Policy MWS/3”.

“Strategic Policy MWS/2 – Minerals The existing quarries at Penmaenmawr, Raynes (Llysfaen) and St George will provide the Plan Area’s contribution to the regional supply of hard rock.”

“Policy MWS/3 - Safeguarding Hard Rock And Sand And Gravel Resources

1. The following resources and related facilities are included within the Safeguarded Hard Rock or Sand and Gravel designation:

...

d) The permitted reserves at St George Quarry, including processing areas;

e) Additional hard rock as identified on the Proposals Map;

f) Sand and Gravel resources as identified on the Proposals Map.

2. Planning permission will not be granted for any development within the Safeguarded Hard Rock or Sand and Gravel designation which could directly or indirectly harm the long-term viability of working those resources unless:

a) It can be demonstrated that the need for development outweighs the need to protect the mineral resource or;

b) Where such development would not have a significant impact on the viability of the mineral being worked or;

c) Where the mineral is extracted prior to the development.

3. In cases where the quality and depth of safeguarded hard rock or sand and gravel resources has not been proven, other forms of development may be consistent with the safeguarding approach provided that the applicant submits evidence, such as borehole samples, demonstrating that no commercially viable hard rock or sand and gravel resources would be affected”.

“Policy MWS/4 - Quarry Buffer Zones

There will be a presumption against inappropriate development within the quarry buffer zones”.

Emerging Local Plan

- 3.1.3 Whilst a draft text of the emerging Replacement Local Development Plan (RLDP) is not yet publicly available, the Preferred Strategy document, list of candidate sites, and a series of topic papers and background papers have been produced to inform the plan. The relevant documents are described below.

Topic Paper 10: Minerals and Waste

- 3.1.4 The topic papers *“are designed to cover key subject areas currently covered in the adopted LDP and summarise technical data contained within the Background Papers to make the presentation of data more accessible to readers. Topic papers establish a baseline position and identify the key issues facing the County Borough which the RLDP will need to address”.*
- 3.1.5 The aim of this topic paper *“is to interpret the relevant evidence and guidance in relation to the specific topic and identify the key issues that the Plan will need to address as well as possible policy approaches to be incorporated in the Plan”.*
- 3.1.6 The topic paper describes potential changes to the existing minerals policies for the emerging Replacement LDP. On the basis that the Site is located within an area of safeguarded hard rock reserves but is not located within the area of any safeguarded sand and gravel deposits, only policy changes related to hard rock reserves are discussed below.
- Policy MWS/1 – Minerals And Waste
 - No suggested changes
 - Policy MWS/2 – Minerals
 - *“This policy refers to the existing quarries at Penmaenmawr, Llysfaen (Raynes) and St George. It is likely that that a policy similar to this will be retained in the revised Local Development Plan”.*
 - Policy MWS/3 – Safeguarding Hard Rock And Sand And Gravel Resources
 - *“The LDP safeguards sandstone with potential for high specification aggregate, which is identified as a Category 1 mineral within the Aggregate Safeguarding Maps ... Deposits within the County Borough are small, isolated, and in locations where development pressure is likely to be limited to agriculture and wind farm development. The application of a 200m buffer has resulted in relatively large areas being safeguarded which is unnecessary and disproportionate. Given the above, it is*

recommended that this mineral is no longer safeguarded through the LDP”.

Background Paper 37: Minerals

3.1.7 The purpose of this paper is “*to review the evidence base upon which the LDP was developed and to provide any additional evidence*” to support the development of the Replacement LDP. The salient points relevant to the Proposed Development are summarised below.

■ Mineral Supply

- *Limestone is extracted at St George’s Quarry, the planning permission is time limited and extraction is required to cease by 2030. There are extensive reserves remaining and, notwithstanding the time limits attached to the planning permission, alongside the two other extraction sites within the County Borough, at current rates of production they would enable the County Borough to meet identified needs over the Review Plan Period and well beyond. It is considered highly likely that the existing sites will continue to be worked and that applications to extend the lives of the quarries would, in principle, be acceptable.*
- *Policy MWS/2 states that the existing quarries at Penmaenmawr, Raynes and St George will provide the County’s contribution to the regional supply of hard rock and this is considered to remain an appropriate position over the Review period. Both Raynes and St George would need an extension of time during the Review period (2018-2033), though this would not involve any additional landtake and would therefore not require an allocation in the LDP Review.*

■ Buffer Zones

- *“There are buffers around each of the quarries which helps minimise conflict between sensitive development and the quarrying operations. These buffer zones vary in extent due to the proximity of existing sensitive development but in general are 200m, ... It is considered that these buffers are an appropriate means of not only protecting sensitive development but also protecting strategically important quarries and should remain in place”.*

Preferred Strategy

3.1.8 The Preferred Strategy notes that the RLDP will need to set out how it “*ensures resilient locational choices for infrastructure and built development, taking into account water supplies, water quality and reducing, wherever possible, air and noise pollution and environmental risks, such as those posed by flood risk, coastal change, land contamination and instability*”.

3.1.9 The Preferred Strategy states *“Conwy contains high quality Carboniferous limestone running along the coastal strip from Abergele to The Great Orme in Llandudno... Minerals within resource categories 1 (Primary) and 2 (Secondary) which are the best quality resources will be safeguarded. It is not proposed to safeguard category 3 (Tertiary) resources on account of the large distribution of category 1 and 2 resources. The occurrence of sand and gravel is very limited in Conwy, and is either located along the low lying coastal strip and River Conwy valley and Estuary, or in isolated river valleys and pockets of glacial sand in boulder clay located in upland areas. Due to the small scale or narrow nature of many of these deposits, it is proposed to only safeguard deposits which exceed a defined threshold of size, as realistically the majority of such deposits are too small in scale or too isolated to justify safeguarding”.*

3.1.10 In relation to proposed minerals policy, the RLDP ³ states:

“Strategic Policy 33 (SP/33): Minerals

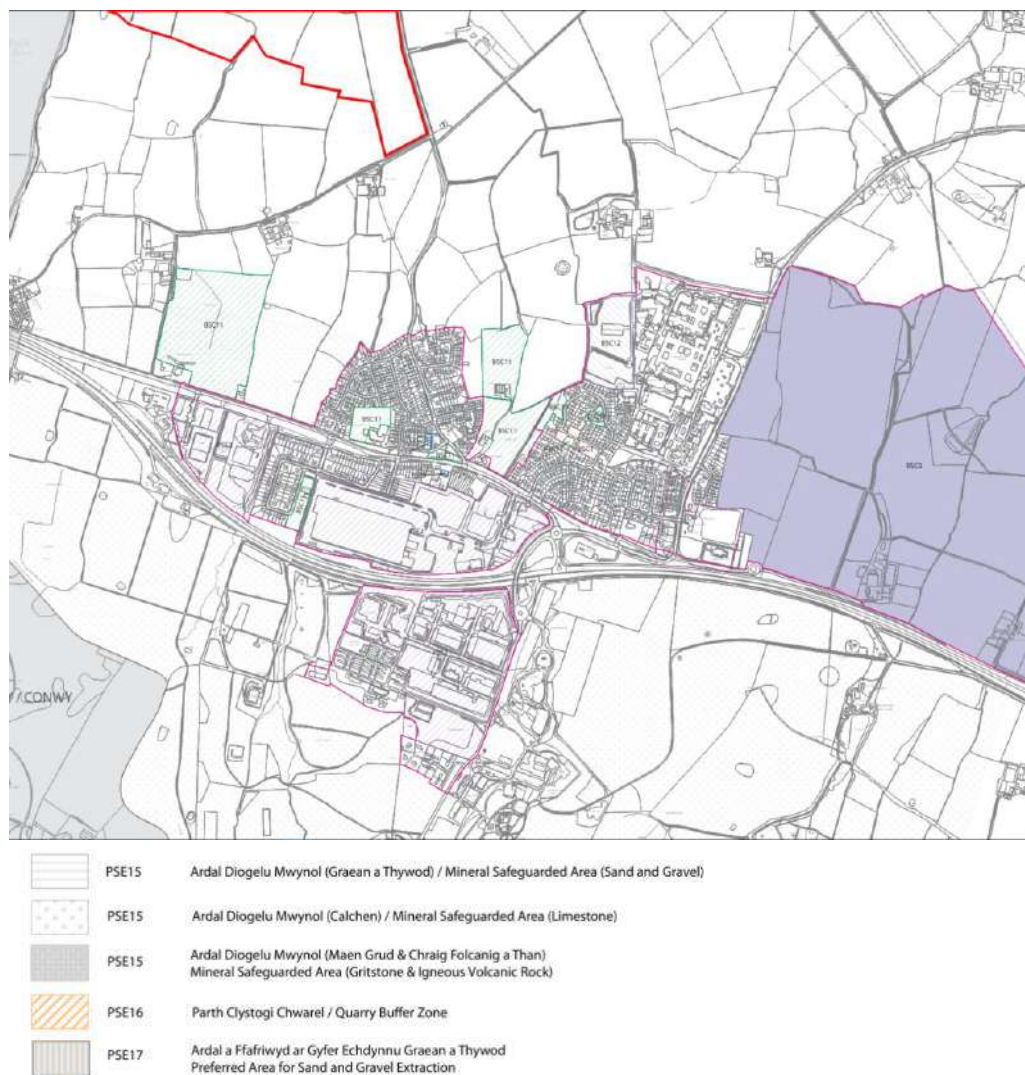
The Council will manage the mineral resources in a sustainable manner which will support the construction economy, whilst safeguarding the natural and built environment by:

- a) Ensuring that there is sufficient provision of permitted reserves of aggregates to meet local and regional supply needs throughout the duration of the Plan.*
- b) Identifying areas for future hard rock working, including potential extensions at existing quarries, and affording necessary long term protection to prevent unnecessary sterilisation of resources which may be required during and beyond the Plan Period.*
- c) Encouraging the efficient and appropriate use of high quality minerals and supporting proposals for the re-use and recycling of suitable materials as an alternative to primary won aggregates.*
- d) Designating buffer zones around quarries to protect amenity and ensuring that mineral operations are not unduly constrained by other land users.*
- e) Safeguarding sand & gravel and hard rock resources as identified on the proposals map and at existing permitted reserves of hard rock at Penmaenmawr, Raynes (Llysfaen) and St George Quarries.*
- f) Ensuring that minerals workings are appropriately restored at the earliest opportunity to enhance environmental, amenity and community benefits”.*

Denbighshire County Council

3.1.11 DCC adopted their Local Plan⁴ in June 2013. **Figures 3.2 and 3.3** (below) present extracts of Maps 40A¹⁰ (Tref Bodelwyddan Town) and 32A¹¹ (St. Asaph Business Park). These maps show that parts of the Cable Corridor and parts of the BESS Site and the POC are located in within a Mineral Safeguarded Area for limestone. These maps are reproduced, with the Site Boundary overlain in **Appendix B**.

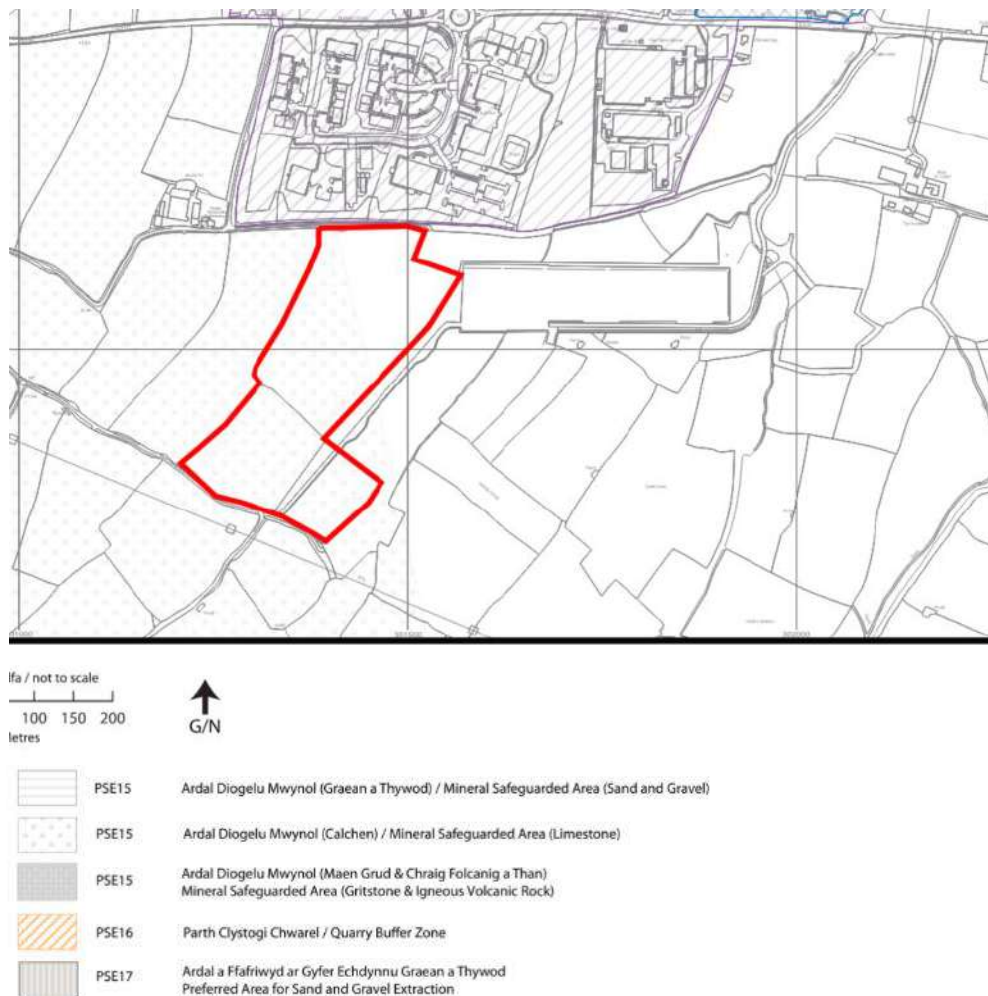
Figure 3.2 - Extract from the DCC LDP Map 40A - Tref Bodelwyddan Town.



¹⁰ DCC, 2013, Local Development Plan Map 40A – Tref Bodelwyddan Town. Available online at <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/adopted-ldp/adopted-ldp-maps/main-centres/bodelwyddan.pdf>, accessed October 2024.

¹¹ DCC, 2013, Local Development Plan Map 32A – St. Asaph Business Park. Available online at <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/adopted-ldp/adopted-ldp-maps/main-centres/st-asaph-business-park.pdf>, accessed October 2024.

Figure 3.3- Extract from DCC LDP Map 32A – St. Asaph Business Park



3.1.12 The DCC LDP⁴ includes the following policies with regard to minerals:

“Policy PSE 15 - Safeguarding Minerals

High quality resources of minerals, including limestone, sand and gravel, Denbigh Gritstones, igneous and volcanic deposits will be safeguarded from development that would result in its permanent loss or hinder future extraction. Development will only be permitted where:

- i. it can be demonstrated that the need for the development outweighs the need to protect the mineral resource; or*
- ii. where such development would not have a significant impact on the viability of that mineral being worked; or*
- iii. where the mineral is extracted prior to the development”.*

“Policy PSE 16 - Mineral Buffer Zones

Sensitive development within buffer zones, as defined on the proposals map, will not be permitted unless it can be demonstrated that working has ceased and will not be resumed.

Extensions to quarries will only be permitted where a suitable buffer can be retained, i.e. where such an extension would not cause other development to become part of a buffer, and where it can be demonstrated that there is no unacceptable impact on the environment or human health”.

Emerging Local Plan

3.1.13 The DCC emerging Replacement Local Development Plan (RLDP) draft preferred strategy document states the objectives of the RLDP but does not include any draft policies in relation to minerals. At the time of writing, the available information relating to the plan principally comprises a register of candidate minerals extraction sites for consideration in the replacement LDP.

3.1.14 A review of the candidate sites shows that the majority are located a significant distance from the Proposed Development. Of the candidate sites located within 1.0 km of the Site:

- Site CS-40E-028 (Bodelwyddan) comprises a parcel of land located approximately 320 m south of the PV array fields and approximately 320 m north-east of the Cable Corridor.
- Site CS-31E-066 (Groesffordd Marli) comprises a parcel of land approximately 400 m south of the Cable Corridor.

3.2 BGS Mineral Maps

3.2.1 The safeguarded areas for “hard rock reserves” within CCBC’s administrative areas and limestone within DCC’s administrative area coincide with the areas of mapped limestone resource on the BGS Minerals Resource Map (**Appendix C**). The hard rock/limestone is specifically the Clwyd Limestone Group which is highlighted as resource on the Aggregates Safeguarding Map (**Appendix D**). The Mineral Resource Map describes the Group as a ‘*Limestone: Other Carboniferous*’. The Aggregates Safeguarding Map describes the Group as ‘*High Specification Aggregate – Carboniferous Limestone*’ but is not denoted as ‘*high purity (>97 CaCO₃)*’.

3.2.2 The BGS GeoRecords Database⁸ includes several historical records from boreholes located near to the BESS and POC that have intercepted the Clwyd Limestone Group. The boreholes generally indicate that the limestone is around 10 to 30+ m BGL reducing to <10 m BGL further south of Bodelwyddan. The logs do not provide descriptions of the mineralogy or aggregate attributes of the limestone.

3.3 Sterilisation of Mineral Resources

3.3.1 There are no minerals or potential aggregates requiring safeguarding underlying the area of the proposed PV arrays.

3.3.2 Parts of the Cable Corridor and POC and BESS will potentially sterilise the underlying Clwyd Limestone resources. However, it is considered that the Proposed Development will have only very limited impacts on mineral resources which should not preclude the Proposed Development from taking place for the following reasons:

- The operational lifespan of the Proposed Development is anticipated to be up to 40 years, after which the Proposed Development would be decommissioned and mineral extraction could then occur, deeming the sterilisation temporary and not permanent.
- It is not considered that construction of the cable within areas of existing road would sterilise mineral resources, as the minerals beneath and in the immediate vicinity of the road would already be considered sterilised. Similarly, minerals beneath areas of existing woodland would not be considered sterilised as the woodland (including areas of designated ancient woodland) would likely prevent the extraction of minerals. Together, these account for approximately 70% of the Cable Corridor within the Minerals Safeguarding Areas.
- Outside of roads and woodlands, construction of the Cable Corridor is only likely to temporarily sterilise a narrow (approximately 10 m wide) corridor along an approximately 8 km length (approximate area of 0.7 hectares). Construction of the BESS and POC.
- The Cable Corridor is only likely to be shallow, typically 2 to 5 m BGL or where trenchless technology is required may be up to 5 to 15 m BGL. Trench excavations are unlikely to encounter Limestone over the majority of the cable length and if encountered from drillshots for trenchless technologies, would only remove negligible volumes of the rock.
- Within the BESS and POC land parcel, approximately 4.6 hectares is within safeguarded areas of limestone. This is only approximately 4% of the land within the line boundary.
- The areas involved are dwarfed by the vast areas of northern Wales underlain by the Clwyd Limestone Group from which adequate quantities of limestone or aggregate could be won in both County Conwy and County Denbighshire. The extant minerals policy documents recognise that the existing quarries provide sufficient resource (subject to extensions of permissions, *"which would, in principle be acceptable"*) to meet the material requirements across the current plan periods.

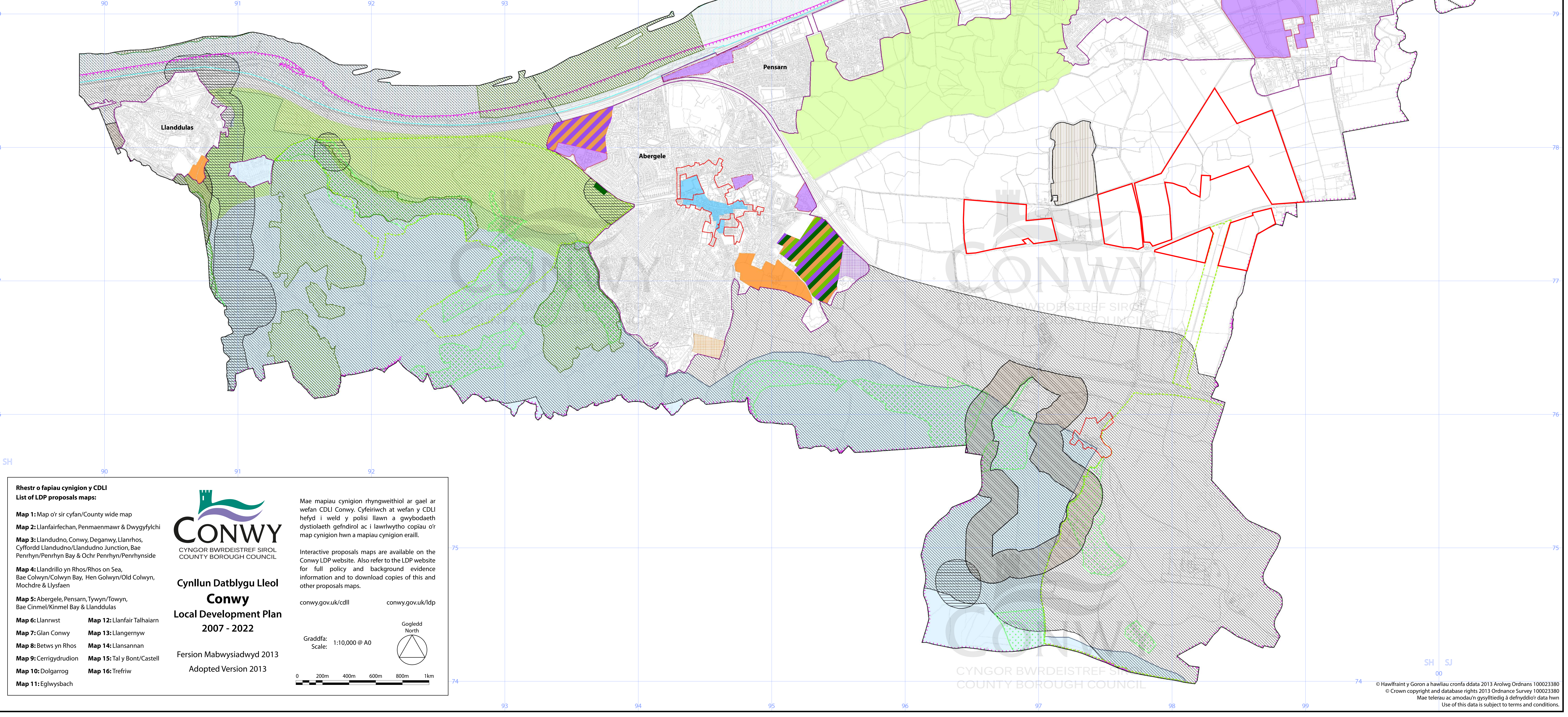
- The development proposals for the Site are considered to be industrial in nature and therefore, unlike residential developments for example, would not suffer from being in proximity to mineral extraction work and the potential associated nuisance, such as traffic, noise and dust. Therefore, should any new mineral workings be proposed in the vicinity of the Site, the development of the Site for the stated end uses should not prevent any off-Site mineral extraction receiving planning permission.

4 Conclusions

- 4.1.1 Parts of the potential Cable Corridor and part of the BESS Site are mapped as being underlain partially by the Clwyd Limestone Group which is considered a 'Limestone' mineral resource and a 'High Specification Aggregate' and is safeguarded under the CCBC and DCC Local Plans. No other safeguarded mineral resources underlie the project area and the area of the proposed PV arrays is not underlain by any safeguarded mineral resources.
- 4.1.2 The construction of the Proposed Development will sterilise minerals on parts of the Site, however, the sterilisation is considered temporary in nature (with the exception of the BESS and POC) and insignificant given the vast extent of the Clwyd Limestone Group across both the Conwy and Denbighshire counties.
- 4.1.3 Construction of the Proposed Development is not considered to sterilise off-Site minerals in the surrounding land because the development would not be affected by off-Site mineral extraction activities and thus would not present a constraint to extraction in the future.
- 4.1.4 This review indicates that no further consideration of mineral resource implications associated with this development is required for this planning application.

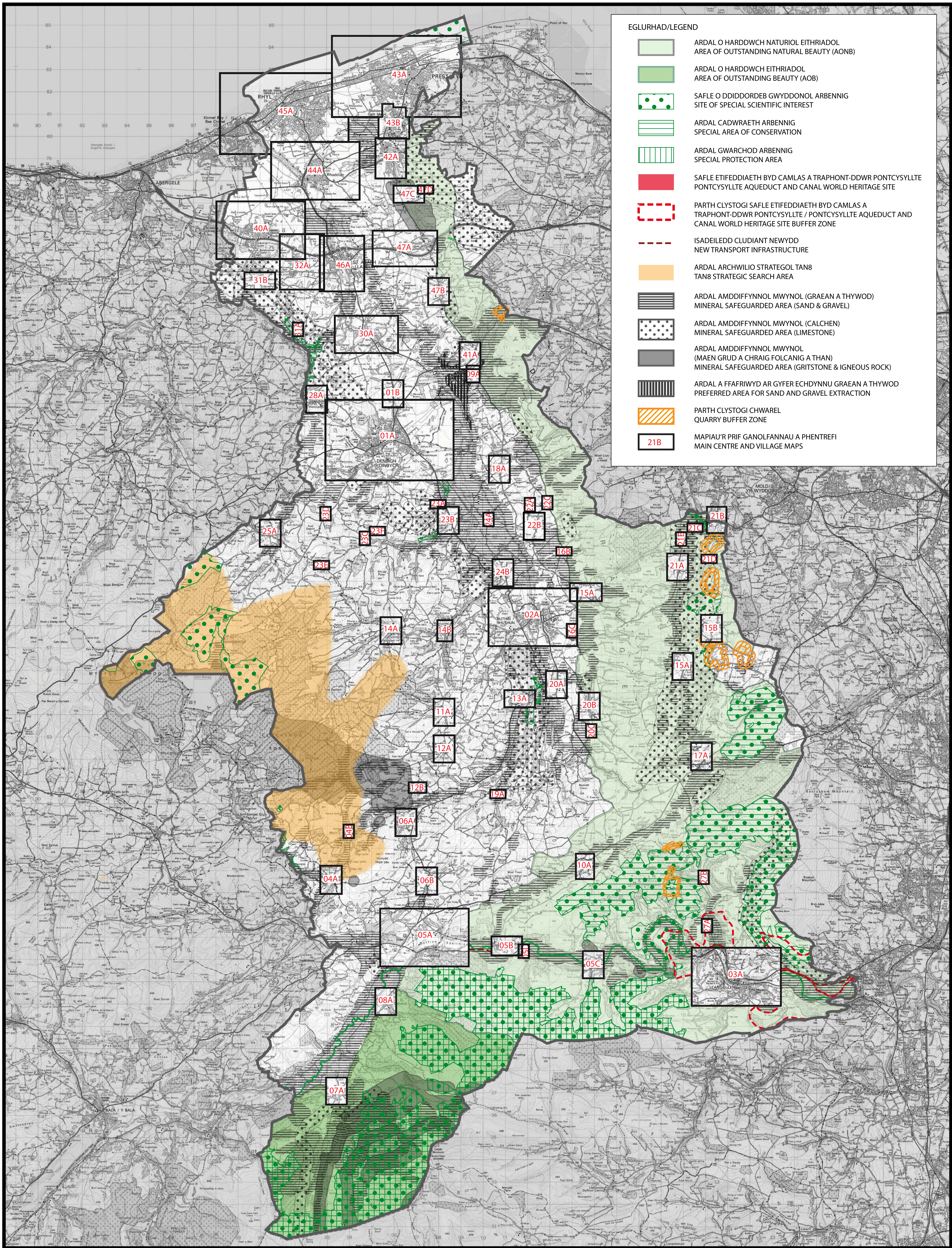
Appendix A – Conwy County Borough Council Land Development Plan - Map 5 East

Abergele, Pensarn, Tywyn/Towyn, Bae Cinmel/Kinmel Bay & Llanddulas

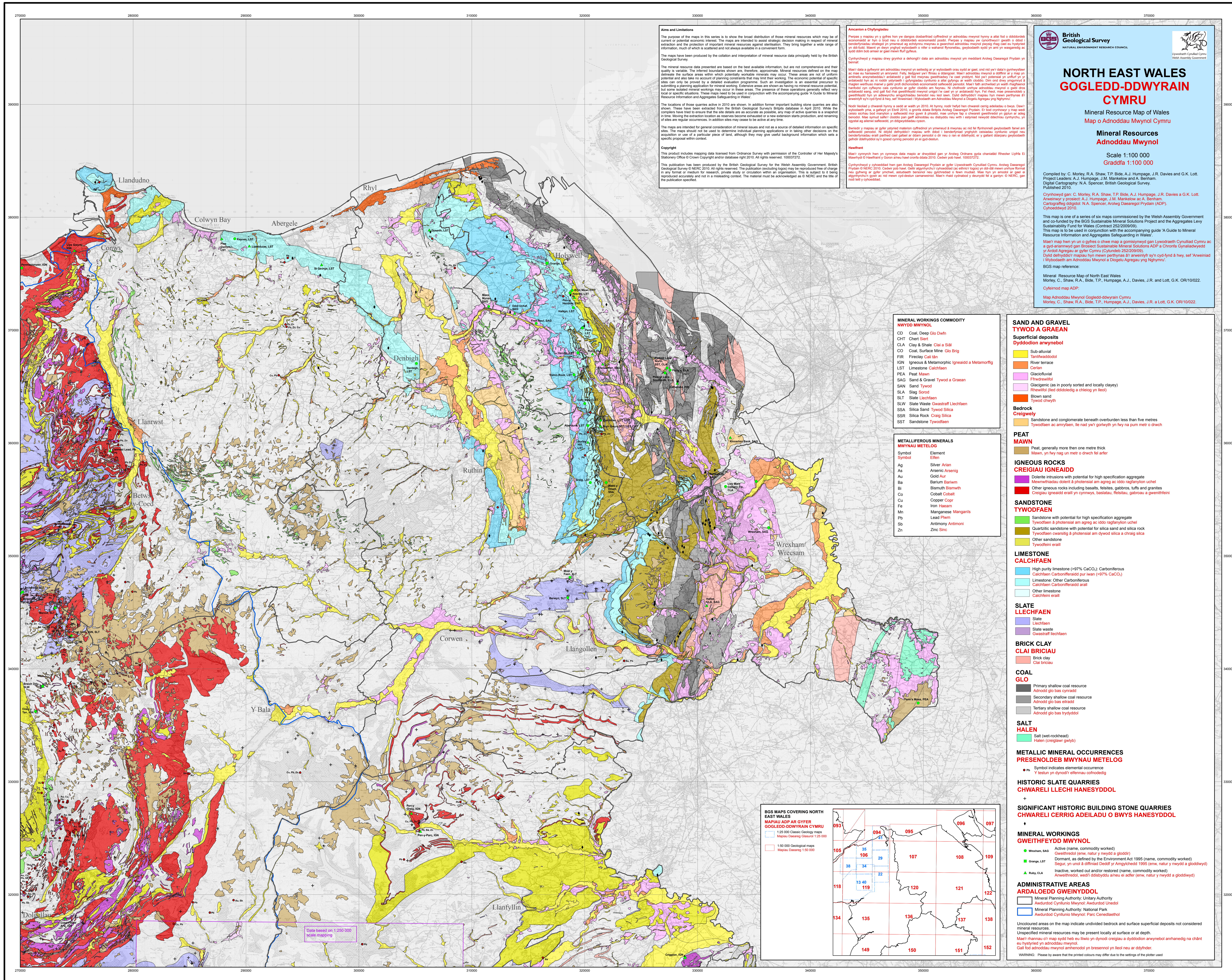


93	94	95	96	97	98	99	Mae telerau ac amodau'n gysylltiedig â defnyddio'r data hwn Use of this data is subject to terms and conditions.
----	----	----	----	----	----	----	---

Appendix B – County Denbighshire – County Key Map



Appendix C – Mineral Resource Map – North Wales



Appendix D – Aggregate Safeguarding Map – North Wales

