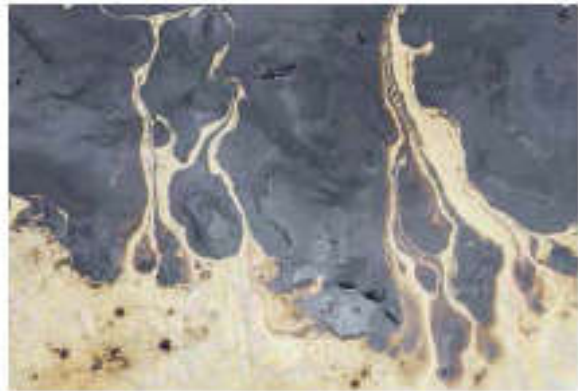
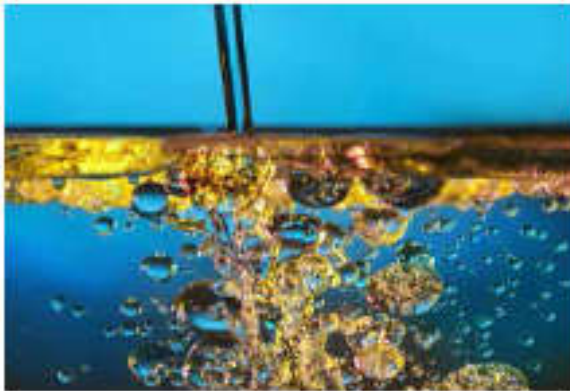


## AGRICULTURAL LAND CLASSIFICATION REPORT



**TANRALLT FARM  
LLANILAR  
ABERYSTWYTH  
SY23 4NS**

**TAIR CHWAER CYF**



**DOCUMENT CONTROL RECORD**

---

**Project Name:** Tanrallt Farm  
**Project Reference:** P252228  
**Report Title:** Agricultural Land Classification  
**Report Reference:** P252228/ALC  
**Prepared For:** Tair Chwaer Cyf  
**Client Reference:** -  
**Site Address:** Tanrallt Farm, Llanilar, Aberystwyth SY23 4NS

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Managing Director

**Signature:** *Jon Burton*

**Version No:** 1  
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## EXECUTIVE SUMMARY

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|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Instruction</b>                      | Oracle Environmental Experts Ltd (OEE) were commissioned by Tair Chwaer Cyf to complete an Agricultural Land Classification (ALC) survey of a single agricultural field at a site known as Tanrallt Farm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Site Information</b>                 | The development site currently comprises a single agricultural field to the west of the village of Llanilar and covers an area of approximately 2.7 ha.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Agricultural Land Classification</b> | <p>The assessment has been carried out in accordance with the Ministry of Agriculture, Fisheries and Food (MAFF) 'Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land', October 1988.</p> <p>The ALC survey has been completed using a combination of desktop assessment of the relevant published information and a detailed site survey comprising 1 no. trial pits and 4 no. hand augers.</p> <p>From the available published information, together with the findings of the detailed soil survey, it has been determined that the majority of the site has been classified as Sub-grade 3b (48.2%) with localised areas of Grade 4 (29.6 %) in the south, and areas of Sub-grade 3a (22.2 %) in the north. The limiting factors are gradient and stoniness based on field observations, gradient mapping and laboratory results.</p> |

**This executive summary is intended to provide an outline of the site assessment and is not intended to provide a definitive analysis of the information obtained.**

## **1.0 INTRODUCTION**

---

### **1.1 Instruction**

- 1.1.1 Oracle Environmental Experts Ltd (OEE) were commissioned by Tair Chwaer Cyf to complete an Agricultural Land Classification (ALC) survey of a single agricultural field at a site known as Tanrallt Farm.
- 1.1.2 The assessment has been made in accordance with the ALC system for England and Wales (see 'Methodology' below).

### **1.2 Limitations**

- 1.2.1 Limitations to the scope of this report are presented in Appendix F.

## **2.0 METHODOLOGY**

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- 2.1 This assessment has been carried out in accordance with the Ministry of Agriculture, Fisheries and Food (MAFF) 'Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land', October 1988.
- 2.2 The ALC system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The ALC system divides agricultural land into 5 no. grades (Grade 1 'Excellent' to Grade 5 'Very Poor'), with Grade 3 subdivided into Subgrade 3a 'Good' and Subgrade 3b 'Moderate'. Agricultural land classified as Grade 1, 2 and Subgrade 3a falls in the 'best and most versatile' category in the National Planning Policy Framework (NPPF) revised in December 2024. Further details of the ALC system and national planning policy implications are set out by Natural England in Technical Information Note 049.
- 2.3 The ALC survey has been completed using a combination of desktop assessment of the relevant published information and a detailed site survey.
- 2.4 The desktop study included the following information:
- Geological Information from British Geological Survey Internet Portal at [https://mapapps2.bgs.ac.uk/geoindex/home.html?\\_ga=2.70761622.707236199.1708507952-901914965.1708507952](https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.70761622.707236199.1708507952-901914965.1708507952)
  - Soil information from LandIS published by Cranfield University and accessed at <https://www.landis.org.uk/soilscapes/>
  - Soil information from the UK Soil Observatory (UKSO) accessed at <https://mapapps2.bgs.ac.uk/ukso/home.html>

- The Met. Office Climatological data for Agricultural Land Classification, January 1989
- DEFRA MAGIC (Multi-Agency Geographic Information for the Countryside) website at [www.magic.defra.gov.uk](http://www.magic.defra.gov.uk)

- 2.5 A detailed soil survey and ALC of the site was carried out on 10 June 2025. The soil survey involved examination of the soil's physical properties with trial pits and hand augers progressed at a sampling density of approximately 1 no. position per 1 ha. The locations of the trial pit and hand augers are shown on Figure 3, Appendix A.
- 2.6 The soil profile at each sample location was described in accordance with the 'Soil Survey Field Handbook: Describing and Sampling Soil Profiles' (Ed. J.M. Hodgson, Cranfield University, 1997). Each soil profile was ascribed an Agricultural Land Classification (ALC) grade following the MAFF ALC Guidelines.

### **3.0 LOCATION, LAND USE, TOPOGRAPHY, CLIMATE AND FLOODING**

---

#### **3.1 Site Location and Land Use**

- 3.1.1 The site currently comprises a single irregular shaped field to the west of the village of Llanilar and covers an area of approximately 2.7 ha., centred at grid reference 261489E, 274929N (SN 614749).
- 3.1.2 The site was accessed through a metal field gate from the south-west via a farm access track associated with Tanrallt Farm.
- 3.1.3 At the time of the survey, the field was surfaced with grass and was being used for cattle grazing.
- 3.1.4 The northern and eastern site boundaries comprise hedgerows with occasional deciduous trees, with the southern and western boundaries comprising the edge of adjacent woodland.
- 3.1.5 There were no notable areas of waterlogged or marshy ground on site, although the survey was completed following a period of dry weather.
- 3.1.6 Outcrops of bedrock comprising mudstone and possible sandstone were present immediately beyond the southern site boundary and along the access track to the south-west of the site.
- 3.1.7 A site location plan is presented as Figure 1 in Appendix A, and a photographic record is presented in Appendix B.

### **3.2 Topography**

- 3.2.1 The topography of the site generally comprised a steep slope from the southern boundary at a height of approximately 56 m AOD, down to the northern site boundary at a height of 38 m AOD. Field observations recorded with an electrical compass clinometer identified slopes of 9° and 10° in the centre of the site and 17° in the south. Photographic records of the clinometer readings are presented in Appendix B.
- 3.2.2 Given the presence of steep slopes on site, a gradient map has been produced using a recently completed topographic survey and is presented in Appendix A. As shown in the gradient map, the southern extent of the site typically exceeds 11° with a few small areas exceeding 18°. A central area of the site extending in a north-west – south-east orientation is typically between 7-11°.
- 3.2.3 As outlined in Table 1 of the MAFF guidelines, slopes with a gradient greater than 7° are limited to Subgrade 3b and greater than 11° are limited to Grade 4. Furthermore, many of these slopes were noted to be at field boundaries which can significantly impact the turning circle of farm machinery.

### **3.3 Flooding**

- 3.3.1 The Natural Resources Wales 'Flood map for planning' service designates the site as being in flood zone 1'. Locations in flood zone 1 have a low probability of flooding. This means in any year, land has a less than 0.1% chance of flooding from rivers or sea.

## **4.0 PUBLISHED GEOLOGICAL, SOIL AND ALC INFORMATION**

---

### **4.1 Geology**

- 4.1.1 According to the British Geological Survey (BGS) Geoindex resource, the majority of the site is underlain by superficial deposits of Till, Devensian – Diamicton.
- 4.1.2 The underlying bedrock geology comprises the Trefechan Formation - Mudstone and Sandstone.

### **4.2 Soils**

- 4.2.1 According to the LandIS information portal, the soils on site are mapped as freely draining slightly acid loamy soils
- 4.2.2 The UK Soil Observatory (UKSO) have mapped the site as loam to clayey loam.

### **4.3 ALC Information**

- 4.3.1 The published information available from the Welsh Government Predictive ALC Map indicates that the site contains areas of ALC Grades 3a, 3b and 4.

## **5.0 AGRICULTURAL LAND CLASSIFICATION**

---

### **5.1 Background**

- 5.1.1 This section of the report sets out the findings of the Agricultural Land Classification (ALC). It is based on a desktop study of relevant published information on climate, topography, geology, and soil, in conjunction with a soil survey of the site.
- 5.1.2 As described in the ALC Guidelines, the main physical factors influencing agricultural land quality are:
- climate;
  - site;
  - soil; and
  - interactive limitations.
- 5.1.3 With regard to the ALC Guidelines, agricultural land quality can also be limited by 1 no. or more of 3 no. main site factors as follows:
- gradient;
  - micro-relief (i.e., complex change in slope angle over short distances); and
  - risk of flooding.

### **5.2 ALC Climate Data**

- 5.2.1 Interpolated climate data have been calculated using the 2 no. closest grid points from the 5 km spacing data set provided in MAFF Climatological Data for ALC, as the site lies between 2 no. data points. The values for these data points are listed in Table 1 below.

| <b>Table 1: ALC Climate Data</b>                                             |                          |                          |
|------------------------------------------------------------------------------|--------------------------|--------------------------|
| Location                                                                     | Grid Point 1<br>SN600700 | Grid Point 2<br>SN650750 |
| Average altitude (m AOD)                                                     | 91                       | 95                       |
| Lapse rate of average annual rainfall (mm/m)                                 | 0.7                      | 1.4                      |
| Average annual rainfall (AAR) (mm) (1941-70)                                 | 1058                     | 1146                     |
| Accumulated temperature above 0°C – Median value (Jan to June 1961-80) (ATO) | 1423                     | 1418                     |
| Moisture Deficit (MD), winter wheat (mm)                                     | 73                       | 67                       |
| Moisture Deficit (MD), potatoes (mm)                                         | 56                       | 50                       |
| Field Capacity Days (FCD)                                                    | 221                      | 235                      |

- 5.2.2 The relevant interpolated values for the proposed development site, which have been adjusted for height and location, are presented in Table 2 below. The calculations for the interpolation process have been completed in line with the MAFF guidelines.

| <b>Table 2: Interpolated Site Climatic Data</b>                              |          |
|------------------------------------------------------------------------------|----------|
| Average altitude (m AOD)                                                     | 50       |
| Average annual rainfall (AAR) (mm) (1941-70)                                 | 1036     |
| Accumulated temperature above 0°C – Median value (Jan to June 1961-80) (ATO) | 1470     |
| Moisture Deficit (MD), winter wheat (mm)                                     | 79       |
| Moisture Deficit (MD), potatoes (mm)                                         | 64       |
| Field Capacity Days (FCD)                                                    | 218      |
| <b>Grade According to Climate</b>                                            | <b>1</b> |

- 5.2.3 With reference to Figure 1 of the MAFF guidelines 'Grade according to climate' in the ALC Guidelines, the site has been designated ALC Sub-grade 1 based on climate.
- 5.2.4 Agricultural land at the site is predicted to be at field capacity (i.e. near saturation point) for 218 Field Capacity Days (FCD) per year, which will be mainly over the late autumn, winter, and early spring. The combination of topsoil texture, drainage status (Wetness Class) of the profile, and number of FCD affects the degree to which agricultural land is limited by soil wetness, assessed further below.

### 5.3 Interactive Limitations

#### 5.3.1 Soil Texture, Structure and Wetness

- 5.3.1.1 A detailed soil survey was undertaken by OEE on 10 June 2025 comprising 1 no. trial pit (TP01) to a maximum depth of 0.65 m and 4 no. hand augered soil bores (SB01-SB04) to a maximum depth of 1.20 m. The achievable depth of intrusive positions was limited across the majority of the site by a weathered surface of the shallow bedrock. As described in Section 3.1, outcrops of bedded mudstone/sandstone were present immediately south and south-west of the site.

5.3.1.2 Topsoil was encountered at depths ranging from 0.16 to 0.32 m and comprised either brown sandy loam or brown sandy clay loam.

5.3.1.3 Given the lack of cohesive material and high stone content in the topsoil, it is considered that a well-developed structure was not present at the locations examined. Given that the field is used for cattle grazing, the soils are likely to have undergone compaction and is unlikely to have been cultivated recently.

5.3.1.4 Particle Size Distribution analysis was completed on a topsoil sample from TP01 to confirm the texture and field observations. The results of this analysis are presented in Appendix E.

5.3.1.5 The texture of the sub-soil was consistent across the site comprising sandy clay with an estimated stone content of 15-20 %.

5.3.1.6 The sub-soils showed slight variation in colour across the site with the majority described as either strong brown or reddish yellow. The sub-soils in SB02, located in the central-northern section of the site, was grey with clear evidence of brown mottling. This was the only location to show mottling, however, given that mottles were not in the ochreous hue range it is considered that this does not represent 'gleying' in accordance with MAFF guidelines.

5.3.1.7 It is considered that the high sand and low clay/silt content of the shallow soils encountered do not constitute a slowly permeable layer it should be noted that whilst the rocky layers observed were highly fractured it is likely that the rock at some point will present permeability issues. However, so that the results of this assessment do not mischaracterise the ground conditions based on assumptions, the sub-subsoils/weathered rock will not be designated as a slowly permeable layer.

5.3.1.8 All intrusive positions were dry with no groundwater strikes encountered.

5.3.1.9 Full details of the soil survey are available in Appendix C.

5.3.1.10 Observations from the on-site soil survey and derived wetness classes and soil grade based on criteria detailed in the MAFF guidelines are outlined in Table 3 below.

| <b>Table 3: ALC Soil survey summary</b>                                                                                                                                                         |                          |                            |                                  |                                          |                             |                              |                                 |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------|----------------------------------|------------------------------------------|-----------------------------|------------------------------|---------------------------------|-----------------------------------------------|
| <b>Position</b>                                                                                                                                                                                 | <b>Topsoil depth (m)</b> | <b>Texture of top 25cm</b> | <b>Stoniness of top 25cm (%)</b> | <b>Depth to slow permeable layer (m)</b> | <b>Depth to gleying (m)</b> | <b>Figure used for class</b> | <b>Estimated wetness class*</b> | <b>Grade according to wetness<sup>#</sup></b> |
| TP01                                                                                                                                                                                            | 0.19                     | SL                         | 37                               | -                                        | -                           | 6                            | I                               | 1                                             |
| SB01                                                                                                                                                                                            | 0.21                     | SL                         | 25                               | -                                        | -                           | 6                            | I                               | 1                                             |
| SB02                                                                                                                                                                                            | 0.21                     | SCL                        | 25                               | -                                        | -                           | 6                            | I                               | 2                                             |
| SB03                                                                                                                                                                                            | 0.16                     | SL                         | 25                               | -                                        | -                           | 6                            | I                               | 1                                             |
| SB04                                                                                                                                                                                            | 0.32                     | SCL                        | 25                               | -                                        | -                           | 6                            | I                               | 2                                             |
| Notes:<br>SL = Sandy loam, SCL = Sandy clay loam<br>* = Derived from Figure 6 of the MAFF guidelines based on an FCD of 218<br># = Derived from Table 6 (mineral soils) of the MAFF guidelines. |                          |                            |                                  |                                          |                             |                              |                                 |                                               |

### 5.3.2 Soil Droughtiness

5.3.2.1 From the ALC Guidelines, a soil droughtiness limitation exists 'in areas with relatively low rainfall or high evapotranspiration, or where the soil holds only small reserves of moisture available to plant roots.' The ALC grade according to soil droughtiness is shown in Table 4 below (based on Table 8 'Grade According to Droughtiness' in the ALC Guidelines). To be eligible for Grades 1 to 3b, the moisture balances (MBs) must be equal to, or exceed, the stated minimum values for both wheat and potatoes. If the MB for either crop is less (i.e. more negative) than that shown for Subgrade 3b, the soil is Grade 4 on droughtiness).

| <b>Table 4: ALC Grade According to Droughtiness</b> |                                |                 |
|-----------------------------------------------------|--------------------------------|-----------------|
| <b>Grade/Subgrade</b>                               | <b>Moisture Balance Limits</b> |                 |
|                                                     | <b>Wheat</b>                   | <b>Potatoes</b> |
| 1                                                   | +30                            | +10             |
| 2                                                   | +5                             | -10             |
| 3a                                                  | -20                            | -30             |
| 3b                                                  | -50                            | -55             |
| 4                                                   | <-50                           | <-55            |

5.3.2.2 The moisture balance (MB) values have been calculated for the soil profile of TP01 with the corresponding ALC grade shown in Table 5 below and calculations presented in Appendix D. Given the high stone content in the shallow soils the available water for each horizon has been adjusted based on the results of the laboratory analysis and conservative estimates where testing was not undertaken.

| <b>Table 5: ALC Grade According to Droughtiness</b> |                                |                 |              |
|-----------------------------------------------------|--------------------------------|-----------------|--------------|
| <b>Position</b>                                     | <b>Moisture Balance Limits</b> |                 | <b>Grade</b> |
|                                                     | <b>Wheat</b>                   | <b>Potatoes</b> |              |
| TP01                                                | 24.85                          | 25.15           | 2            |

### 5.4 ALC Grading

- 5.4.1 From the published information above, together with the findings of the detailed soil survey, it has been determined that the majority of the site has been classified as Sub-grade 3b with smaller areas of Sub-grade 3a and Grade 4. The limiting factors are gradient and stoniness based on field observations, gradient mapping and laboratory results.
- 5.4.2 Despite the high interpolated Field Capacity Days for the site, it is considered that the high sand content of the soils and absence of a definitive slowly permeable layer, have resulted in the soils being designated Grade 1 and 2 for wetness.
- 5.4.3 The site has been zoned based on each positions limiting factor and is shown in Figure 5 Appendix A. The corresponding areas for each Grade/Sub-grade are listed below in Table 6.

| Table 6: ALC Grade Area |           |                          |
|-------------------------|-----------|--------------------------|
| Grade/Sub-grade         | Area (ha) | Percent of site Area (%) |
| 3a                      | 0.6       | 22.2                     |
| 3b                      | 1.3       | 48.2                     |
| 4                       | 0.8       | 29.6                     |

## 6.0 CONCLUSIONS

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6.1 The site covers an area of approximately 2.7 ha and based on this ALC survey, the majority of the site has been classified as Sub-grade 3b (48.2%) with localised areas of Grade 4 (29.6 %) in the south and areas of Sub-grade 3a (22.2 %) in the north. The main limiting factors for the classification are gradient and stoniness.

## 7.0 REFERENCES

---

Hodgson, J.M. (ed.) (1997). Soil Survey Field Handbook. Technical Monograph No. 5. Soil Survey and Land Research Centre, Silsoe.

Ministry of Agriculture, Fisheries and Food (1988) Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

Natural England (December, 2012). 'Agricultural Land Classification: protecting the best and most versatile agricultural land (TIN049)'.

## 8.0 GLOSSARY

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**AAR:** Average Annual Rainfall. AAR is a measure of the total amount of rainfall, falling in a calendar year (observation period 1941-1970). This is different to the duration of wetness throughout a calendar year – see FCD.

**ALC:** Agricultural Land Classification system. This is a robust, scientific system to assess agricultural land quality at a range of mapping scales. The ALC is the only approved system for grading land quality in England and Wales. (See also BMV)

**ATO:** Median Accumulated Temperature above 0°C (January to June). This measures the warmth of an area during a period critical for germination and plant growth. ATO is simply a sum of all temperatures above 0°C, summed daily from January to June. This is used in the assessment of overall climate. April to September values of ATO is used in some background calculations (this is known as ATS, see below).

**ATS:** Median Accumulated Temperature above 0°C (April to September). ATS is a sum of all temperatures above 0°C, summed daily from April to September.

**FCD:** Field Capacity Days. FCD is the number of days per year a soil is at Field Capacity. Field Capacity (FC) is maximum water soil content under gravity, i.e. the soil moisture deficit is 0 and the point at which drainage starts. At Field Capacity, soils are considered too wet for cultivation. FCD is a key criterion in ALC assessment of soil wetness and workability.

**Interactive limitations:** In ALC, these are physical limitations which result from interactions between climate, site and soil. The interactive limitations in ALC are soil wetness, droughtiness and erosion. Interactive limitations allow for similar soils to be assessed differently, in wetter or drier parts of England and Wales. See also Standalone limitations.

**MAFF:** MAFF was the Ministry of Agriculture, Fisheries and Food (now DEFRA)

**MAFF 1988 Guidelines:** The Revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988). This is the extant and only approved system for grading land quality in England and Wales. The guidelines came into force on 1 January 1989 superseding any previous ALC surveys or guidelines (see MAFF Technical Reports: Tech 11 and 11/1)

**Mineral soils:** Mineral soils are soils which are not organic-mineral soil or peaty and have less than 6-10% organic matter. Most lowland arable soils outside Fenland are mineral. See Appendix 2 of the MAFF 1988 Guidelines for definitions.

**Moisture Balance (MB):** Droughtiness limits for grades and subgrades are defined in terms of moisture balances (MB, in mm) for wheat and potatoes which are calculated using the following formulae:

- $MB \text{ (Wheat)} = AP \text{ (Wheat)} - MD \text{ (Wheat)}$
- $MB \text{ (Potatoes)} = AP \text{ (Potatoes)} - MD \text{ (Potatoes)}$

**Moisture Deficit (MD):** The moisture deficit term used in the ALC droughtiness assessment is a crop-related meteorological variable which represents the balance between rainfall and potential evapotranspiration calculated over a critical portion of the growing season.

**Most limiting factor (ALC):** If a combination of limiting factors exists, the most limiting one only is used to determine severity of limitation and hence ALC Grade. See Liebig's law of the minimum.

**Organic-mineral or peaty soils:** Organic mineral soils have between 6-25% organic matter, depending on clay content. Peaty soils have 20-100% organic matter, depending on clay content. See Appendix 2 of the MAFF 1988 Guidelines for definitions.

**Predictive ALC:** The Predictive ALC was introduced in Wales in 2017. It is a web-based model refining ALC grading at an all Wales level. It uses background climate and terrain models, linked to NATMAP soil property data. It then calibrates the data to the ALC system. Predictive ALC Grades (Including Subgrade 3a and 3b) can be viewed, along with all Post Revision field surveys. The Predictive ALC has

superseded the Provisional ALC maps in Wales and is available on the Welsh Government website. It is the primary source of strategic ALC information in Wales. (See Provisional ALC).

**Soil structure:** Soil structure is the aggregation of individual soil particles into discrete units, called peds or structural units. These can be classified into different shapes, sizes etc. Differences between soil structural type and condition can have a large effect on soil water movement. Soil structure is important for soil wetness/workability and droughtiness assessment.

**Soil texture:** Soil texture is defined according to the relative proportions of sand, silt and clay fractions.

**Standalone limitations:** In ALC, these are limitations directly affecting grade independent of soil/climate interactions – e.g. flooding, gradient, topsoil stone content and overall climate.

**Wetness Class:** Wetness Class (WC) measures the amount of the year a soil is wet above certain depths on a scale of I – VI. WC I is driest, WC VI is wettest. WC I to IV are most encountered in ALC. For ALC, WC is assessed using (a) depth to gleyed horizon and depth to slowly permeable layer – measuring how quickly water can move through a soil profile– and (b) the number of Field Capacity Days (FCD) – measuring the duration of climatic wetness. See Appendix 3 of the MAFF 1988 guidelines for a full definition.

**Wet:** In soil wetness class assessment, ‘wet’ means water films are visible on the surfaces of grains or peds. Excavation below a wet horizon will cause water to flow down the exposed face, though flow may be very slow and confined to major pores and fissures. For a full definition see Soil Survey Field Handbook (Hodgson J.M. 1997 – definition as Hodgson J.M. 1976).

## **APPENDIX A - FIGURES**

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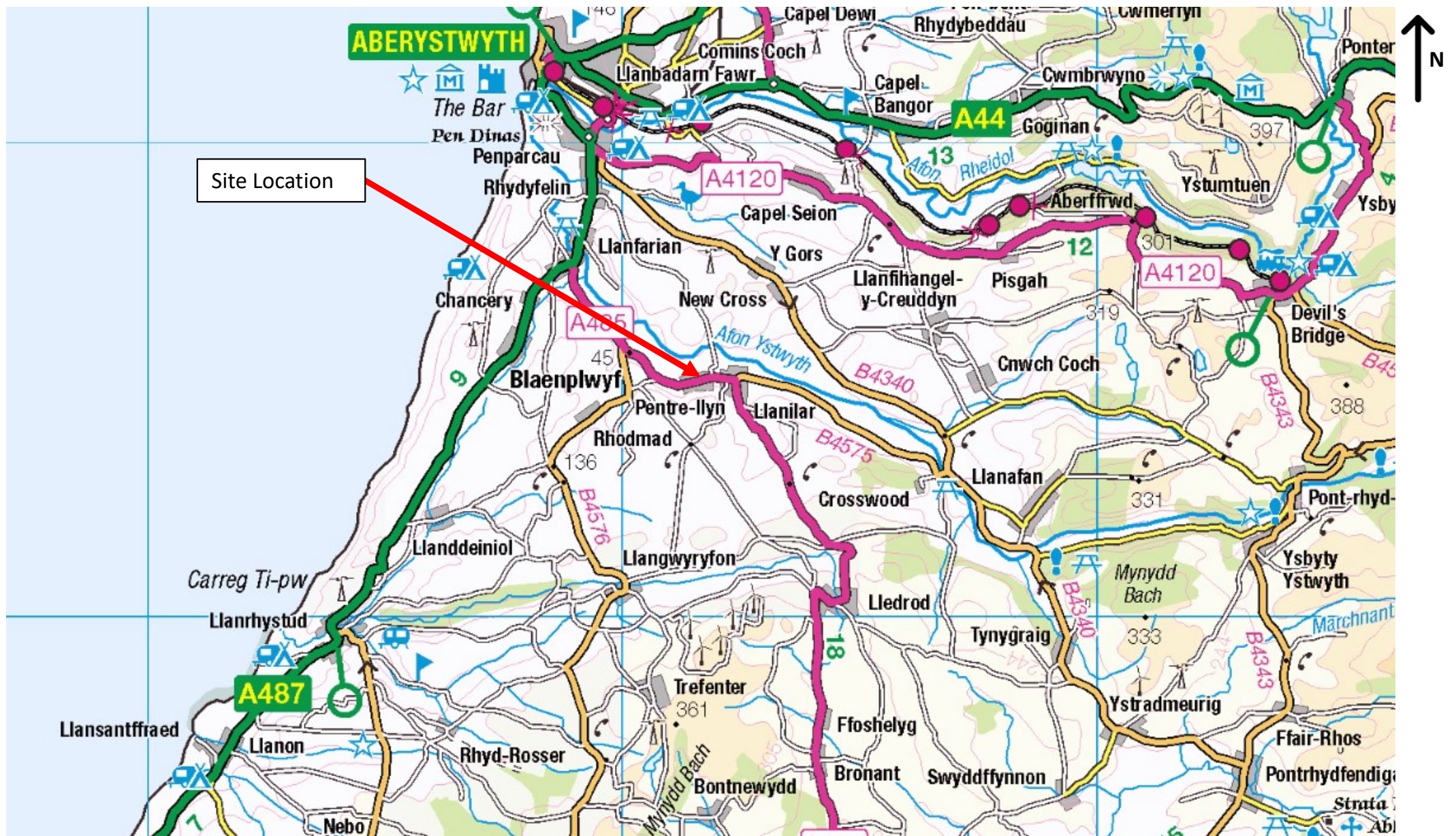
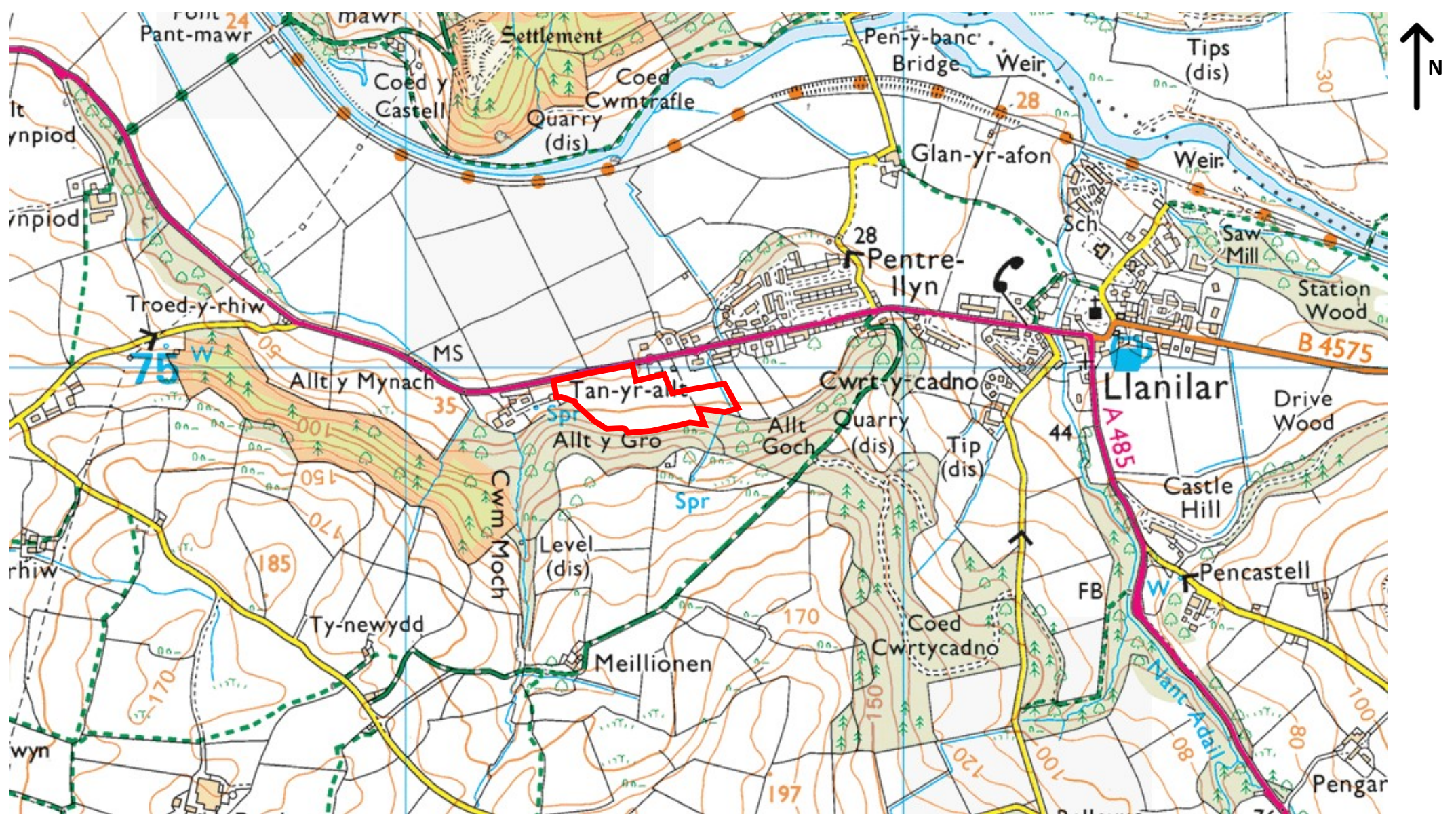


Figure 1 - Site Location Plan

Site ref: P252228/ALC

Site name: Tanrallt Farm



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Figure 2 - Site Boundary Plan

Site ref: P252228/ALC

Site name: Tanrallt Farm

#### Legend

 Site Boundary



Figure 3 - Hole Location Plan

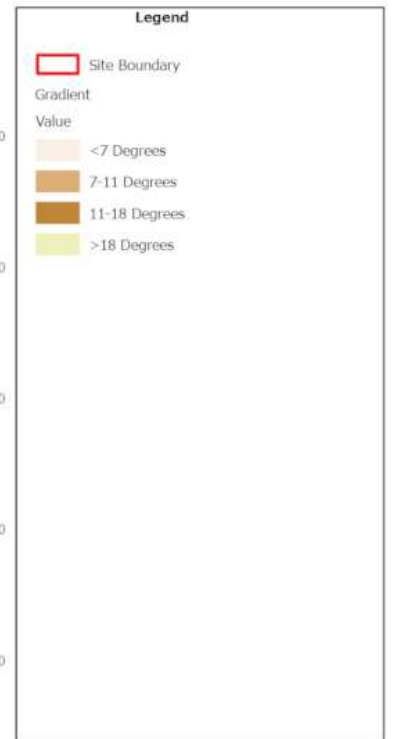
Site ref: P252228 ALC

Site name: Tanrallt Farm

**Legend**

 Trial Pit

 Auger Soil Bore



|                                                                                       |             |
|---------------------------------------------------------------------------------------|-------------|
| Title                                                                                 |             |
| Site Gradient                                                                         |             |
| Project Name                                                                          |             |
| Jenkins, Tanrallt Farm                                                                |             |
| Project Number                                                                        |             |
| P252228                                                                               |             |
| Client                                                                                |             |
| Tair Chwaer Cyf                                                                       |             |
| Date                                                                                  | Version     |
| 01/07/2025                                                                            | 1           |
| Drawn By                                                                              | Approved By |
| SP                                                                                    | AT          |
| Scale                                                                                 |             |
| 1:2,000                                                                               |             |
|  |             |



## **APPENDIX B – PHOTOGRAPHIC RECORD**

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**PHOTOGRAPHIC RECORD**

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**Photo 1:** View south-east from site entrance



**Photo 2:** View east across centre of the site

**PHOTOGRAPHIC RECORD**

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**Photo 3:** View north from centre of the site



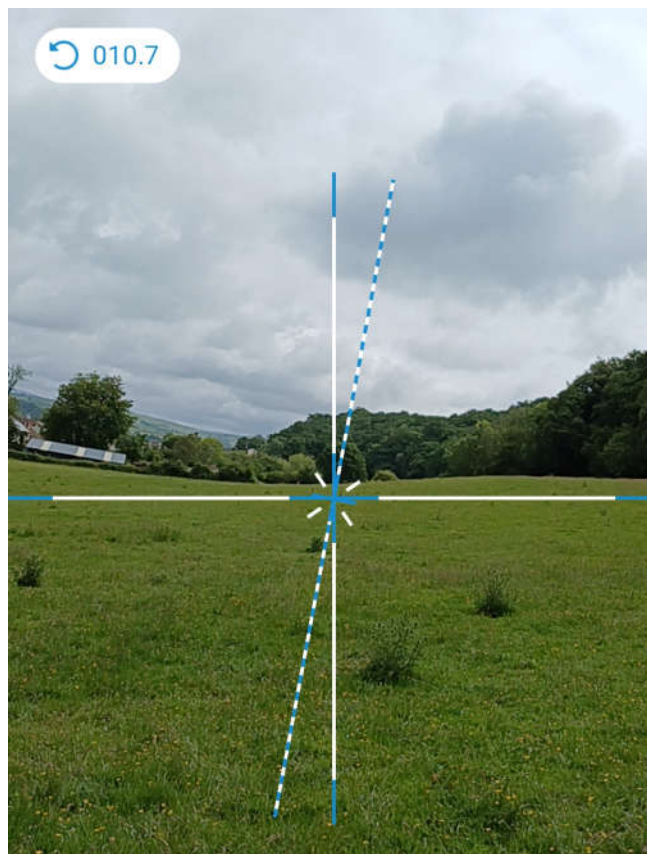
**Photo 4:** View west from south-east of the site

**PHOTOGRAPHIC RECORD**

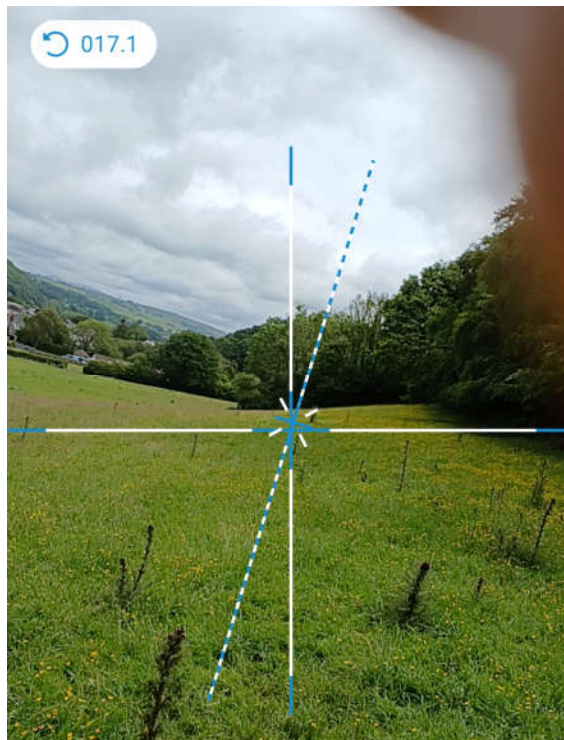
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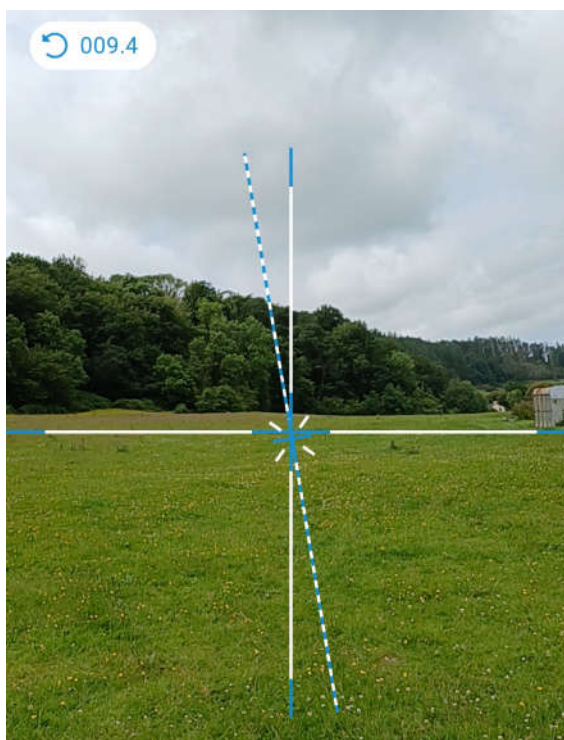
**Photo 5:** Rocky outcrop adjacent to site entrance



**Photo 6:** Compass clinometer reading of central area of the site



**Photo 7:** Compass clinometer reading of south of the site



**Photo 8:** Compass clinometer reading of centre of the site



**Photo 9:** TP01 arisings



**Photo 10:** Base of TP01 refused on cobbles/weathered bedrock surface



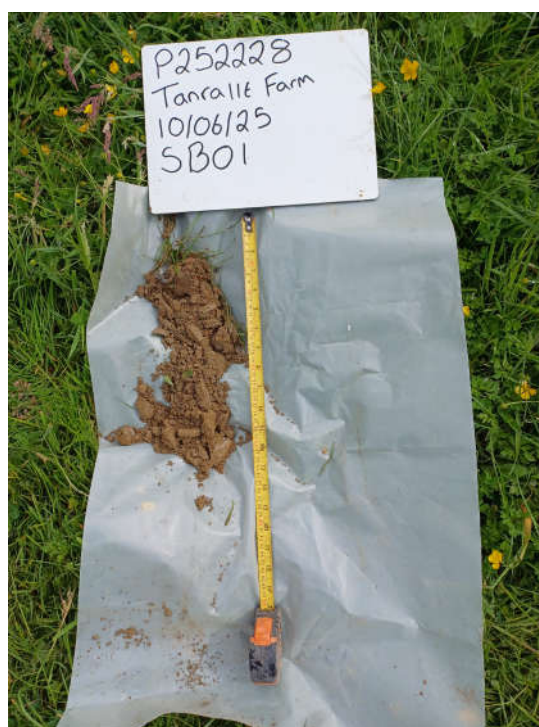
**Photo 11:** TP01



**Photo 12:** TP01 sub-soil



**Photo 13:** TP01 topsoil



**Photo 14:** SB01



Photo 15: SB02



Photo 16: SB03



Photo 17: SB04

## **APPENDIX C – SURVEY DETAILS**

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| Position | Depth (m) | Description                                                              | Munsell Colour |          | Texture | Stoniness - >2cm (%) | Groundwater (m) | Slope (°) | Wetness Class | Grade   |              |           |            |          | Limit |           |
|----------|-----------|--------------------------------------------------------------------------|----------------|----------|---------|----------------------|-----------------|-----------|---------------|---------|--------------|-----------|------------|----------|-------|-----------|
|          |           |                                                                          | 1st            | 2nd      |         |                      |                 |           |               | Wetness | Droughtiness | Stoniness | Soil Depth | Gradient |       | Overall   |
| TP01     | 0.00-0.19 | Firm pale brown very stoney sandy loam.                                  | 10YR6/3        |          | SL      | 37                   | Dry             | <7        | I             | 1       | 2            | 3b        | 1          | 1        | 3b    | Stoniness |
|          | 0.19-0.47 | Firm light yellowish brown stoney sandy clay.                            | 10YR6/4        |          | SC      | 15-20                |                 |           |               |         |              |           |            |          |       |           |
|          | 0.47-0.65 | Stiff reddish yellow very stoney sandy clay with frequent cobbles.       | 7.5YR6/6       |          | SC      | 20+                  |                 |           |               |         |              |           |            |          |       |           |
| SB01     | 0.00-0.21 | Firm brown very stoney sandy loam.                                       | 7.5YR5/4       |          | SL      | 25                   | Dry             | 7-11      | I             | 1       | -            | 3a        | 2          | 3b       | 3b    | Gradient  |
|          | 0.21-0.34 | Firm strong brown stoney sandy clay.                                     | 7.5YR5/6       |          | SC      | 15-20                |                 |           |               |         |              |           |            |          |       |           |
| SB02     | 0.00-0.21 | Soft light brownish grey very stoney sandy clay loam.                    | 10YR6/2        |          | SCL     | 25                   | Dry             | <7        | I             | 2       | -            | 3a        | 1          | 1        | 3a    | Stoniness |
|          | 0.21-1.20 | Firm grey mottled brown stoney sandy clay becoming lithofied with depth. | 7.5YR6/1       | 7.5YR5/4 | SC      | 15-20                |                 |           |               |         |              |           |            |          |       |           |
| SB03     | 0.00-0.16 | Firm brown very stoney sandy loam.                                       | 7.5YR4/4       |          | SL      | 25                   | Dry             | 11-18     | I             | 1       | -            | 3a        | 1          | 4        | 4     | Gradient  |
|          | 0.16-0.63 | Firm strong brown stoney sandy clay.                                     | 7.5YR5/6       |          | SC      | 15-20                |                 |           |               |         |              |           |            |          |       |           |
| SB04     | 0.00-0.32 | Firm brown very stoney sandy loam.                                       | 7.5YR5/4       |          | SCL     | 25                   | Dry             | <7        | I             | 2       | -            | 3a        | 1          | 1        | 3a    | Stoniness |
|          | 0.32-0.91 | Firm strong brown stoney sandy clay.                                     | 7.5YR5/6       |          | SC      | 15-20                |                 |           |               |         |              |           |            |          |       |           |

## **APPENDIX D – DROUGHTINESS CALCULATIONS**

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Droughtiness Calculation

|                    |    |
|--------------------|----|
| Potato             |    |
| Moisture Deficit = | 64 |

|                          |                |               |               |                     |                         |
|--------------------------|----------------|---------------|---------------|---------------------|-------------------------|
| TP01                     |                |               |               |                     |                         |
|                          | Thickness (cm) | Texture Class | Stone Content | Available Water (%) | Thickness x Avail Water |
| Topsoil (TA)             | 19             | SL            | 37            | 9.9                 | 188.1                   |
| Subsoil 1 (TA)           | 28             | SC            | 15            | 13.95               | 390.6                   |
| Subsoil 2 (TA)           | 23             | SC            | 20            | 13.6                | 312.8                   |
|                          |                |               |               |                     |                         |
| Available Water Capacity | 89.15          |               |               |                     |                         |
| Moisture Balance         | 25.15          |               |               |                     |                         |

|                    |    |
|--------------------|----|
| Winter Wheat       |    |
| Moisture Deficit = | 79 |

|                          |                |               |               |                     |                         |
|--------------------------|----------------|---------------|---------------|---------------------|-------------------------|
| TP01                     |                |               |               |                     |                         |
|                          | Thickness (cm) | Texture Class | Stone Content | Available Water (%) | Thickness x Avail Water |
| Topsoil (TA)             | 19             | 37            | 37            | 9.9                 | 188.1                   |
| Subsoil 1 (TA)           | 28             | 15            | 15            | 13.95               | 390.6                   |
| Subsoil 2 (TA)           | 3              | 20            | 15            | 13.6                | 40.8                    |
| Subsoil 2 (EA)           | 15             | 20            | 20            | 9.6                 | 144                     |
| Subsoil/bedrock 3 (EA)   | 55             | Mudstone      | -             | 5                   | 275                     |
|                          |                |               |               |                     |                         |
| Available Water Capacity | 103.85         |               |               |                     |                         |
| Moisture Balance         | 24.85          |               |               |                     |                         |

## **APPENDIX E – LABORATORY ANALYSIS RESULTS**

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# Laboratory Report



## Contract Number: 79296

Client Ref: **P252228**

Client PO: **PO-20601**

Date Received: **16-06-2025**

Date Completed: **27-06-2025**

Report Date: **27-06-2025**

Client: **Oracle Enviromental Experts LTD**

This report has been checked and approved by:

Contract Title: **Tranrallt Farm**

For the attention of: **Alan Taylor**

**Darren Bourne**

Quality Senior Technician

Description

Qty

### Particle Size Distribution

1

BS EN ISO 17892-4 : 5.1 - \* UKAS

**Notes:** Observations and Interpretations are outside the UKAS Accreditation

\* - denotes test included in laboratory scope of accreditation

# - denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

#### Approved Signatories:

Brendan Evans (Senior Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (HR & HSE Manager)

**PARTICLE SIZE DISTRIBUTION**  
**BS EN ISO 17892-4:2016**  
**Wet Sieve, Clause 5.2**

Contract Number

**79296**

Borehole/Pit No.

**TP01**

Project Name

**Tanrallt Farm**

Sample No.

Sample Description

Brown silty/clay fine to coarse sandy fine to coarse GRAVEL shale with rootlets

Depth Top

**0.00**

Depth Base

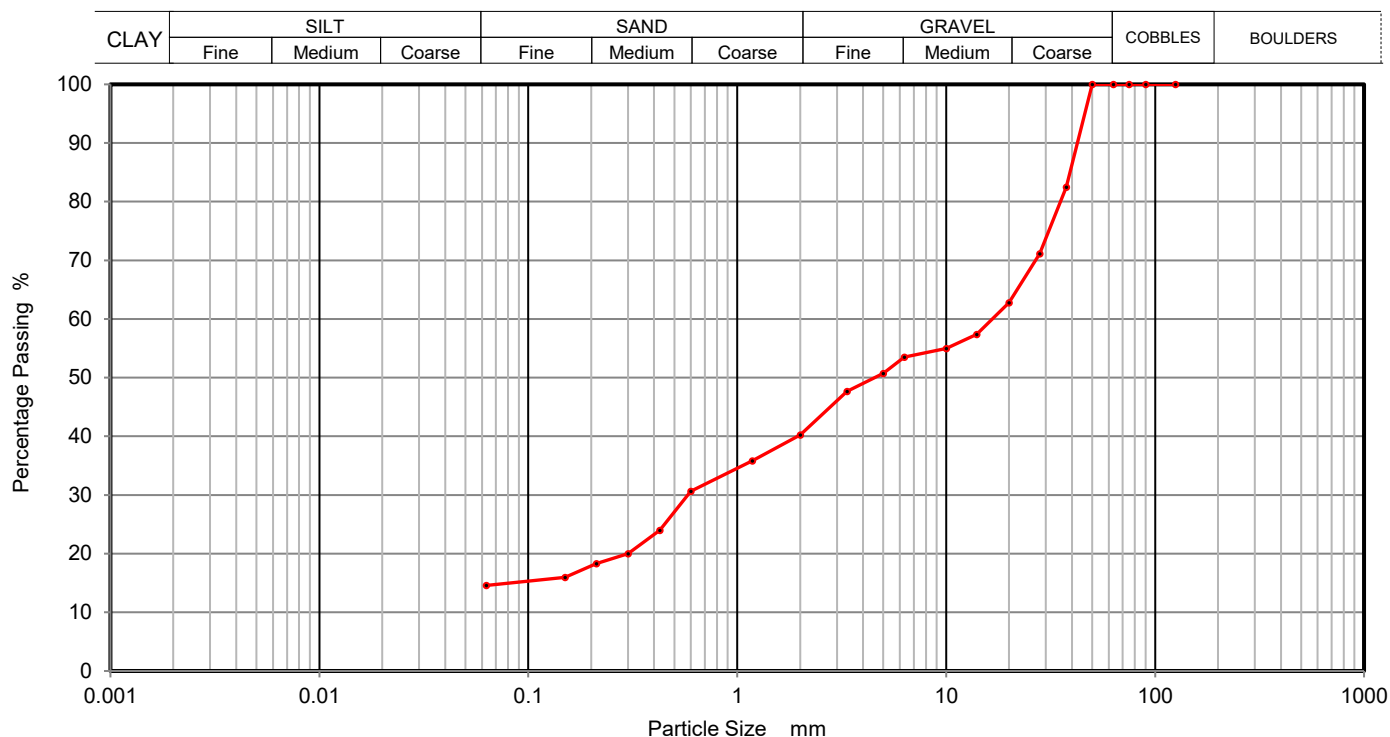
**0.19**

Date Tested

26/06/2025

Sample Type

**B**



| Sieving             |           | Sedimentation       |           |
|---------------------|-----------|---------------------|-----------|
| Particle Size<br>mm | % Passing | Particle Size<br>mm | % Passing |
| 125                 | 100       |                     |           |
| 90                  | 100       |                     |           |
| 75                  | 100       |                     |           |
| 63                  | 100       |                     |           |
| 50                  | 100       |                     |           |
| 37.5                | 82        |                     |           |
| 28                  | 71        |                     |           |
| 20                  | 63        |                     |           |
| 14                  | 57        |                     |           |
| 10                  | 55        |                     |           |
| 6.3                 | 54        |                     |           |
| 5                   | 51        |                     |           |
| 3.35                | 48        |                     |           |
| 2                   | 40        |                     |           |
| 1.18                | 36        |                     |           |
| 0.63                | 31        |                     |           |
| 0.425               | 24        |                     |           |
| 0.30                | 20        |                     |           |
| 0.20                | 18        |                     |           |
| 0.15                | 16        |                     |           |
| 0.063               | 15        |                     |           |

| Sample Proportions | % dry mass |
|--------------------|------------|
| Cobbles            | 0          |
| Gravel             | 60         |
| Sand               | 25         |
| Silt and Clay      | 15         |
|                    |            |
|                    |            |

**Remarks**

Preparation and testing in accordance with BS17892 unless noted below

Operator

Cameron Thomas

Oracle Environmental Experts Limited (OEE) has prepared this report with all reasonable skill, care and diligence in accordance with the instructions from the Client.

OEE has prepared this report for the sole use of the Client and those parties an assignment agreed by OEE in writing. Any third parties who wish to rely upon the contents of this report must seek written approval from OEE and a charge may be levied for such approval. OEE accept no responsibility or liability for the consequences of the contents of this report being used for any other purpose other than which it was commissioned or by any third party with whom an assignment has not been granted.

OEE retain intellectual copyright of the contents of this report and grant exclusive use of the material contained herein to the Client. No unauthorised distribution shall be made to any third parties without the prior written consent of both OEE and the Client.

Subject to the specific instructions from the Client and the agreed scope of works, the intrusive site investigation works will have been carried out to provide sufficient information regarding the type, nature and extent of the contamination of the soil, groundwater and surface waters and air, to enable a reasonable assessment of risks to human health, the environment and building structures and services.

The investigation of the site will have been limited to those areas of the site that were accessible by exploratory equipment and were clear of buried services and ordinance (if present).

A more comprehensive investigation of the site may be required should the site be developed or used for a more sensitive land use than that indicated in this report.

The investigations of the exploratory holes undertaken can only provide an indication of the site conditions owing to the small volume of the ground represented by the exploratory holes in relation to the remainder of the site. The number and distribution of sampling locations and the methods of sampling and testing used does not preclude the presence of localised 'hotspots' of contamination where concentrations of contaminants may be higher than those encountered. Reasonable care must be taken in the interpretation of the findings of this investigation and in accordance with standard practice, no liability can be accepted by OEE for localised contamination 'hot-spots' not identified by the site investigation.

The soil, surface water, groundwater and air conditions reported herein are based on observations and testing completed at the time of the site investigation. The soil, surface water, groundwater and air conditions will change over time (e.g. owing to seasonal groundwater level fluctuations, weather related effects etc).

The risk assessment and associated opinions provided herein are based on currently available guidance relating to acceptable contaminant concentrations and the relevant land use scenarios associated with the proposed development of the site and the current land use of the adjacent sites.

OEE accepts no liability for the retrospective effects associated with any future changes or amendments to published assessment criteria, models or associated guidance. Should the proposed use of the site change from that detailed herein further investigation and/or assessment may be required.