

## **AGRICULTURAL LAND CLASSIFICATION REPORT**

GOLDBOROUGH ROAD BATTERY ENERGY STORAGE SYSTEM  
LAND SOUTH OF GOLDBOROUGH ROAD, HUNDLETON, PEMBROKE, NEAR SA71 5SH  
P16-01-ALC JANUARY 2024

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## **1. EXECUTIVE SUMMARY**

- 1.1 This report assesses the Agricultural Land Classification (ALC) grading of 5.3 Ha, of agricultural land to the north of Wallaston Green approximately 3 miles west of Pembroke.
- 1.2 The limiting factor found to be soil wetness, a combination of the climatic regime, soil water regime and texture of the top 25cm of the soil on most of the site and droughtiness on a small area to the southeast of the site.
- 1.3 The land is graded as follows:

Grade 3b:                      5.3 Ha

## 2. INTRODUCTION

- 2.1 Amet Property Ltd have been instructed by Pembroke Green Ltd to produce an Agricultural Land Classification (ALC) report on a 5.3-hectare site on land north of Wallaston Green, west of Pembroke. The ALC report is being prepared to accompany a planning application to be submitted for a battery energy storage scheme with associated infrastructure.
- 2.2 The report's author is James Fulton BSc (Hons) MRICS FAAV who has worked as a chartered surveyor, agricultural valuer, and agricultural consultant since 2004, has a degree in agriculture which included modules on soils and over 10 years' experience in advising farmers on soil structure and cultivation methods and in producing agricultural land classification reports. Additional information on authors experience is found at **appendix 1**.
- 2.3 The report is based on a site visit conducted by James Fulton and 1 assistant surveyor on the 4<sup>th</sup> of October during which the conditions were overcast and rainy.
- 2.4 During the inspections 2 trial pits were dug to a depth of 120cm or as deep as possible if the sample point became impenetrable. In addition to the trial pits an auger was used to take approximately one sample per hectare on the proposed development site to a depth of 120cm with smaller trial pits at some of these locations to confirm soil structure and colour where it was not clear from the auger samples. A plan of auger points and trial pit locations can be found at **appendix 2**. The trial pit locations were selected as they were representative of the soils found on site. Where subsoils were inspected with a spade, descriptions of structure have been recorded based on the soil survey field handbook<sup>1</sup>; where an auger has been used the structure is described as good, moderate or poor based on figure 9,10 and 11 in the MAFF<sup>2</sup> guidance. Colours are described using Munsell Colours<sup>3</sup>.
- 2.5 The surveyed area extends to 5.3Ha of grassland land in one field. The land is to the north of Wollaston Green, approximately 3 miles west of Pembroke and accessed from Goldborough Road on the northern boundary of the field.
- 2.6 Further information has been obtained from the MAGIC website, the Soil Survey of England and Wales, the British Geological Survey, the Meteorological Office and 1:250,000 series Agricultural Land Classification maps.
- 2.7 The collected information has been judged against the Ministry of Agriculture Fisheries and Food Agricultural Land Classification of England and Wales revised guidelines and criteria for grading the quality of agricultural land.

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<sup>1</sup> Hodgson, JM (1997) Soil Survey Field Handbook

<sup>2</sup> MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications

<sup>3</sup> Munsell Color (2009) Munsell Soil Color Charts

2.8 The principal factors influencing agricultural production are climate, site and soil and the interaction between them MAFF (1988) & Natural England (2012)<sup>4</sup>.

2.9 The report is prepared and formatted considering the latest BSSS guidance<sup>5</sup>.

### **3. PUBLISHED INFORMATION**

3.1 The British Geological Survey 1:50,000 scale map shows the bedrock geology to be Ridgeway Conglomerate Formation – Conglomerate, in the north of the site. In the south of the site the bedrock is found to be Milford Haven Group – Argillaceous rocks and sandstone, interbedded.

3.2 The soils on the site are identified as being 541a MILFORD Association, well drained fine loamy reddish soils over rock.

3.3 The Predictive Agricultural Land Classification maps on the Welsh government website show the land at the north of the site to be Graded at 3a. The land to the south of the site is Grade 2.

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<sup>4</sup> MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications

Natural England (2012) - *Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land*, Second Edition

<sup>5</sup> BSSS (2022) Working with Soil Guidance Note on Assessing Agricultural Land Classification Surveys in England and Wales

#### 4. CLIMATE

- 4.1 Climate has a major, and in places overriding, influence on land quality affecting both the range of potential agricultural uses and the cost and level of production.
- 4.2 There is published agro-climatic data for England and Wales provided by the Meteorological Office, such data for the subject site is listed in the table below.

Agro-Climatic Data – Full details can be found at **appendix 3**

|                                             |                      |
|---------------------------------------------|----------------------|
| Grid Reference                              | 192697,201164        |
| Altitude (ALT)                              | 61                   |
| Average Annual Rainfall (AAR)               | 1113                 |
| Accumulated Temperature - Jan to June (ATO) | 1505                 |
| Duration of Field Capacity (FCD)            | 224-225 <sup>6</sup> |
| Moisture Deficit Wheat                      | 82                   |
| Moisture Deficit Potatoes                   | 69                   |

- 4.3 The main parameters used in assessing the climatic limitation are average annual rainfall (AAR), as a measure of overall wetness; and accumulated temperature (ATO), as a measure of the relative warmth of a locality.
- 4.4 The AAR and ATO provide no climatic limitation to grade.
- 4.5 The site is shown to have no flood risk warnings on the Welsh government website Flood and Coastal Erosion Risk Map. Further, there was no evidence of flooding seen during the site visit and it is considered that will not result in a limitation to land grade.

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<sup>6</sup> The duration of field capacity days is extremely close to a cut off and so field capacity days was calculated for all of the separate sample points and found to be between 224 and 225 FCD but crucially always less than 225FCD.

## **5. STONINESS**

- 5.1 The stoniness of the topsoil ranged from 2% to 15% with size of stones ranging from small to large. All stones are hard and subangular. Stoniness levels were never high enough to be the most limiting factor to land grade.

## **6. GRADIENT AND MICRORELIEF**

- 6.1 The site is gently sloping with no gradient or microrelief that will limit land grade.

## **7. SOILS**

- 7.1 The soils found on site largely follow the expectations set by the national soils map but with less porous subsoils than might be expected. Full information on the sample points along with trial pit descriptions and photographs and lab test results can be found at **appendix 4**.
- 7.2 The topsoil across the site is consistently dark reddish brown (5YR 4/2) or reddish brown (5YR 4/3) medium clay loam with quite a high silt content but not high enough for the soil to be described as medium silty clay loam.
- 7.3 All except one survey point was found to have an upper subsoil that ranged in colour from reddish brown to light reddish brown (2.5YR 5/3, 5YR 5/3, 5YR 6/3 and 5YR 6/4) with few ochreous and black mottles. Structure was found to be weak coarse subangular blocky at the trial pit and recorded as poor at all other locations. The pale colour and mottling evidence gleying and the structure and lack of biopores evidence a slowly permeable layer.
- 7.4 Beneath the upper subsoil, or in the case of survey point 6 directly below the topsoil is an impenetrable layer caused by stones of increasing size of shaly stone so tightly packed it cannot be dug.

## INTERACTIVE FACTORS

### 8. WETNESS

- 8.1 An assessment of the wetness class of each sample point was made based on the flow chart at Figure 6 in the MAFF guidance. The wetness class and topsoil texture were then assessed against Table 6 of the MAFF guidance to determine the ALC grade according to wetness. The wetness assessment can be found at **appendix 4**.
- 8.2 Where the upper subsoil is gleyed and slowly permeable from 30 or 35cm the assessment results in wetness class IV. Table 6, 176-225 FCD, wetness class IV and medium clay loam topsoil results in a limitation of grade 3b.
- 8.3 Where there is no gleyed horizon or slowly permeable layer the assessment results in wetness class I. Table 6, 176-225 FCD, wetness class I and medium clay loam topsoil results in a limitation of grade 2.

## 9. DROUGHTINESS

- 9.1 Droughtiness limits are defined in terms of moisture balance for wheat and potatoes using the formula:

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

and

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

Where:

MB = Moisture Balance

AP = Crop Adjusted available water capacity

MD = Moisture deficit

- 9.2 Moisture deficit for wheat and potatoes can be found in the agro-climatic data and are as follows:

$$MD \text{ (Wheat)} = 82$$

$$MD \text{ (Potatoes)} = 69$$

- 9.3 Crop adjusted available water is calculated by reference to the total available water and easily available water which is calculated by reference to soil texture and structural condition and the stone content.
- 9.4 The moisture balance was calculated for the trial pit locations and locations. This assessment can be found at **appendix 4**.
- 9.5 Where the soils are shallow with no upper subsoil droughtiness is found to be the most limiting factor.

## 10. AGRICULTURAL LAND CLASSIFICATION

- 10.1 The Agricultural Land Classification provides a framework for classifying land according to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principle ways: they may affect the range of crops that can be grown, the level of yield, the consistency of yield and the cost of obtaining it.
- 10.2 The principle physical factors influencing agricultural production are climate, site and soil and the interactions between them which together form the basis for classifying land into one of 5 grades; grade 1 being of excellent quality and grade 5 being land of very poor quality. Grade 3 land, which constitutes approximately half of all agricultural land in the United Kingdom is divided into 2 subgrades – 3a and 3b. A full definition of all of the grades can be found at **appendix 5**.
- 10.3 This assessment sets out that the site is limited by both wetness and droughtiness.
- 10.4 The breakdown of land by classification is:
- Grade 3b: 5.3 Ha
- 10.5 A plan of the land grading can be found at **appendix 6**.

## **Appendix 1 – Details of the Authors Experience**

James Fulton

### **Professional Education and Qualifications**

BSc (Hons) Agriculture, University of Nottingham (2004)

Member of the Royal Institution of Chartered Surveyors (MRICS) (2008)

Fellow of the Central Association of Agricultural Valuers (FAAV) (2009)

### **Relevant Work Experience**

While working for a regional firm from 2004 until 2016 as part of my work I provided advice to farmers on soils, cultivation techniques and cropping and was involved in field trials which assessed cropping and cultivation techniques and how they impacted soil structure. At the same time I worked alongside an experienced surveyor who produced Agricultural Land Classification reports and I received training in field survey techniques and the ALC process to the point where I was able to produce ALC reports.

In 2016 I left my employer and formed Amet Property Ltd providing development consultancy and other rural practice surveying services. Of all of the services that we provide Agricultural Land Classification reports is the single largest area of work accounting for approximately 70% of all of my working time.

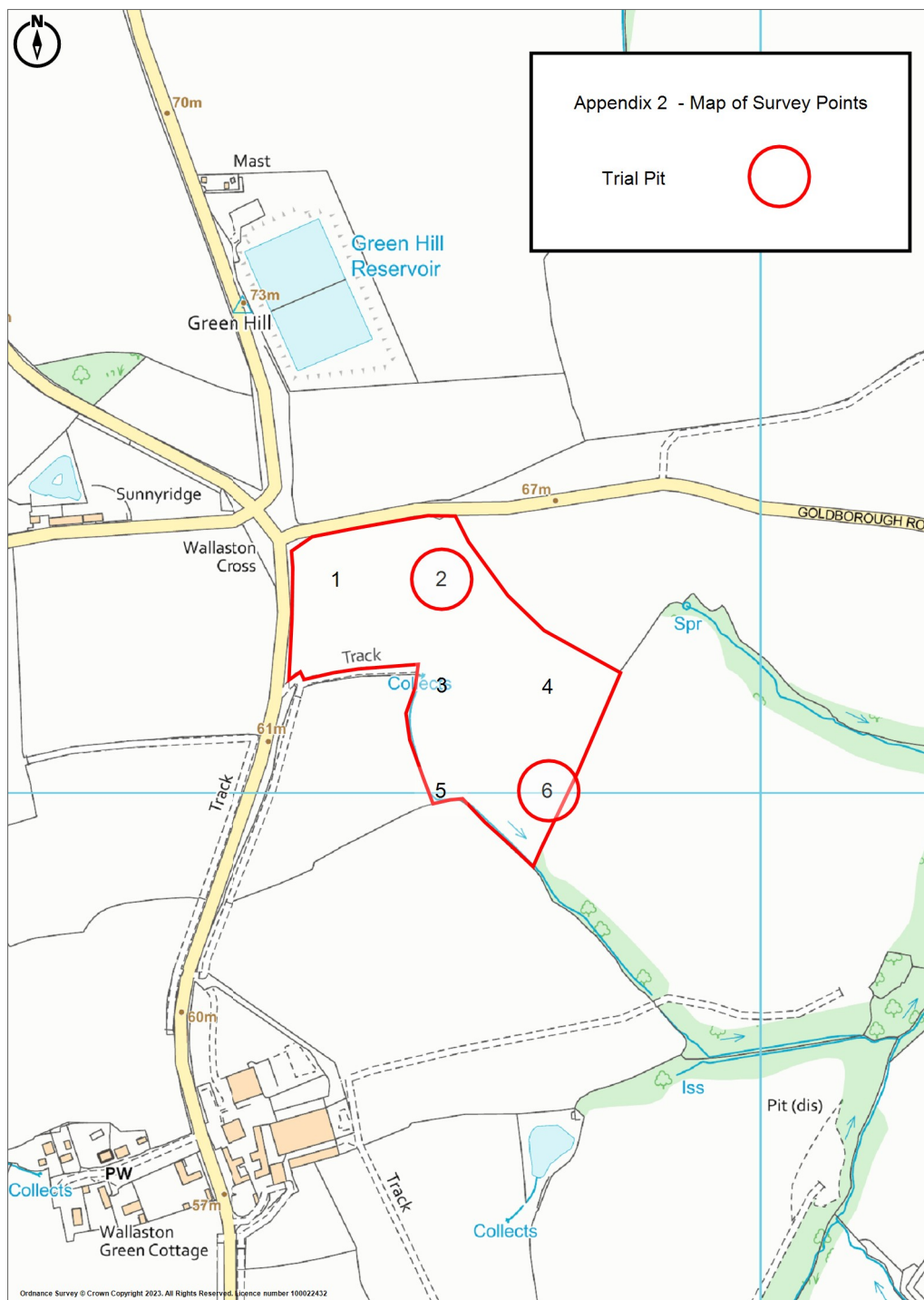
While I am not a member of the BSSS I meet the minimum competencies set out by the BSSS in Document 1 *Foundation skills in field soil investigation, description and interpretation* and Document 2 *Agricultural Land Classification (England and Wales)*

### **Professional Standards**

As a member of the Royal Institution of Chartered Surveyors and Fellow of the Central Association of Agricultural Valuers I am bound by their professional standards and am only able to carry out work where I am suitably qualified and experienced to do so. Due to the formal and practical training that I have received I am able to competently produce Agricultural Land Classification reports.

### **Assistant Surveyors**

All assistant surveyors have completed the BSSS working with soil course and have been trained to meet the requirements of BSSS Document 1 *Foundation skills in field soil investigation, description, and interpretation*.



## Appendix 3 – Climatic Data

Site Details: Pembroke

Grid reference (centre of site): 192697,201164

Altitude: Mean 61 AOD

Climatic data from surrounding locations:

| Grid Reference | ALT | AAR  | LR_AAR | ASR | ATO  | ATS  | MDW | MDP | FCD |
|----------------|-----|------|--------|-----|------|------|-----|-----|-----|
| 19002000       | 21  | 1100 | 0.9    | 445 | 1552 | 2414 | 89  | 78  | 222 |
| 19002050       | 2   | 1004 | 1.1    | 445 | 1572 | 2436 | 91  | 81  | 207 |
| 19502000       | 52  | 1111 | 0.7    | 460 | 1516 | 2376 | 84  | 71  | 225 |
| 19502050       | 27  | 1070 | 0.5    | 460 | 1542 | 2405 | 86  | 74  | 219 |

Altitude Adjusted:

| Grid Reference | AAR     | ATO     | FCD    | MDW   | MDP   | Proximity Adjustment |
|----------------|---------|---------|--------|-------|-------|----------------------|
| 19002000       | 1136.00 | 1506.40 | 227.21 | 82.38 | 69.29 | 32.06%               |
| 19002050       | 1068.90 | 1504.74 | 216.38 | 80.40 | 67.09 | 12.58%               |
| 19502000       | 1117.30 | 1505.74 | 225.91 | 82.64 | 69.20 | 41.54%               |
| 19502050       | 1087.00 | 1503.24 | 221.46 | 81.32 | 67.82 | 13.82%               |

## Appendix 4a - Survey Point Assessment

|           |          |       |         |         |           |         |               |         |           |           |         | Wetness Assesment |       |          |     | Grade   | Droughtiness Assessment |         | Grade  |          |              |
|-----------|----------|-------|---------|---------|-----------|---------|---------------|---------|-----------|-----------|---------|-------------------|-------|----------|-----|---------|-------------------------|---------|--------|----------|--------------|
| Topsoil   |          |       |         |         |           |         | Upper Subsoil |         |           |           |         | Lower Subsoil     |       | Depth to |     | Wetness | limit by                | MB      | MB     | limit by |              |
| Sample No | Altitude | Depth | Texture | Colour  | Stoniness | Mottles | Depth         | Texture | Colour    | Stoniness | Mottles | Structure         | Depth | Texture  | SPL | Gley    | Class                   | Wetness | Wheat  | Potato   | Droughtiness |
| 1         | 65       | 0-35  | MCL     | 5YR 4/3 | 2%        | FO      | 35-60         | HCL     | 5YR 6/4   | 5%        | FOB     | Poor              | 60    | IMP      | 35  | 35      | IV                      | 3b      |        |          |              |
| 2         | 64       | 0-35  | MCL     | 5YR 4/2 | 5%        |         | 35-70         | MCL     | 2.5YR 5/3 | 10%       | FOB     | WCSAB             | 70    | IMP      | 35  | 35      | IV                      | 3b      | 12.6   | 35.82    | 2            |
| 3         | 61       | 0-30  | MCL     | 5YR 4/3 | 2%        |         | 30-120        | HCL     | 5YR 6/4   |           | FOB     | Poor              |       |          | 30  | 30      | IV                      | 3b      |        |          |              |
| 4         | 59       | 0-35  | MCL     | 5YR 4/2 | 10%       |         | 35            | IMP     |           |           |         |                   |       |          |     |         | I                       | 2       | -28.25 | -15.03   | 3b           |
| 5         | 59       | 0-30  | MCL     | 5YR 4/2 | 5%        | FO      | 30-50         | HCL     | 5YR 6/3   |           | FOB     | Poor              | 50    | IMP      | 30  | 30      | IV                      | 3b      |        |          |              |
| 6         | 58       | 0-35  | MCL     | 5YR 4/2 | 15%       |         | 35-60         | MCL     | 5YR 5/3   |           | FOB     | Poor              | 60    | IMP      | 35  | 35      | IV                      | 3b      |        |          |              |
|           | 61       |       |         |         |           |         |               |         |           |           |         |                   |       |          |     |         |                         |         |        |          |              |

# Appendix 4b – Trial Pit Descriptions

|                                                                                    |                                                                                                                                                                                                       |           |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Sample Point No. 2                                                                 |                                                                                                                                                                                                       |           |
| Horizon 1                                                                          | 0-35cm Dark reddish grey (5YR 4/2) medium clay loam with 5% small to medium hard subangular stones.                                                                                                   |           |
| Horizon 2                                                                          | 35-70cm Reddish brown (2.5YR 5/3) medium clay loam with a weak coarse subangular blocky structure, firm consistence and few ochreous and black mottles Some roots between peds but very few biopores. |           |
| Horizon 3                                                                          | 70cm Impenetrable due to very well compacted shaly/slaty stone                                                                                                                                        |           |
| Pictures                                                                           |                                                                                                                                                                                                       |           |
| Horizon 1                                                                          | Horizon 2                                                                                                                                                                                             | Horizon 3 |
|  |                                                                                                                     |           |
| Slowly permeable layer                                                             | Starts at 35cm – evidenced by firm weak coarse subangular blocky structure with less than 0.5% biopores >0.5mm                                                                                        |           |
| Gleying                                                                            | Starts at 35cm evidenced by pale colours and ochreous mottles                                                                                                                                         |           |
| Wetness Class                                                                      | IV                                                                                                                                                                                                    |           |
| Wetness limitation                                                                 | 3b                                                                                                                                                                                                    |           |
| MB Wheat                                                                           | 12.6                                                                                                                                                                                                  |           |
| MB potatoes                                                                        | 35.82                                                                                                                                                                                                 |           |
| Droughtiness Limitation                                                            | 2                                                                                                                                                                                                     |           |

|                                                                                    |                                                                                                                                  |           |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|
| Sample Point No. 6                                                                 |                                                                                                                                  |           |
| Horizon 1                                                                          | 0-35cm Dark reddish grey (5YR 4/2) medium clay loam with 15% medium to large subangular hard stones                              |           |
| Horizon 2                                                                          | 35cm Impenetrable due to increasing size and number of stones appearing to become boulder or rock that could nt be moved or dug. |           |
| Horizon 3                                                                          |                                                                                                                                  |           |
| Pictures                                                                           |                                                                                                                                  |           |
| Horizon 1                                                                          | Horizon 2                                                                                                                        | Horizon 3 |
|  |                                                |           |
| Slowly permeable layer                                                             | Not present                                                                                                                      |           |
| Gleying                                                                            | Not present                                                                                                                      |           |
| Wetness Class                                                                      | I                                                                                                                                |           |
| Wetness limitation                                                                 | 2                                                                                                                                |           |
| MB Wheat                                                                           | -28.25                                                                                                                           |           |
| MB potatoes                                                                        | -15.03                                                                                                                           |           |
| Droughtiness Limitation                                                            | 3b                                                                                                                               |           |

# ANALYTICAL REPORT

|               |             |      |               |
|---------------|-------------|------|---------------|
| Report Number | 94882-23    | W250 | AMET PROPERTY |
| Date Received | 09-OCT-2023 |      | HENWICK BARN  |
| Date Reported | 23-OCT-2023 |      | BULWICK       |
| Project       | SOIL        |      | CORBY         |
| Reference     | ENSO        |      | NORTHANTS     |
| Order Number  |             |      | NN17 3DU      |

|                          |       |            |  |  |  |  |  |  |  |  |  |
|--------------------------|-------|------------|--|--|--|--|--|--|--|--|--|
| Laboratory Reference     |       | SOIL656706 |  |  |  |  |  |  |  |  |  |
| Sample Reference         |       | PEMBROKE 2 |  |  |  |  |  |  |  |  |  |
| Determinand              | Unit  | SOIL       |  |  |  |  |  |  |  |  |  |
| Coarse Sand 2.00-0.63mm  | % w/w | 5          |  |  |  |  |  |  |  |  |  |
| Medium Sand 0.63-0.212mm | % w/w | 8          |  |  |  |  |  |  |  |  |  |
| Fine Sand 0.212-0.063mm  | % w/w | 17         |  |  |  |  |  |  |  |  |  |
| Silt 0.063-0.002mm       | % w/w | 46         |  |  |  |  |  |  |  |  |  |
| Clay <0.002mm            | % w/w | 24         |  |  |  |  |  |  |  |  |  |
| Organic Matter LOI       | % w/w | 4.9        |  |  |  |  |  |  |  |  |  |
| Textural Class **        |       | MCL        |  |  |  |  |  |  |  |  |  |

## Notes

|                  |                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analysis Notes   | The sample submitted was of adequate size to complete all analysis requested.<br>The results as reported relate only to the item(s) submitted for testing.<br>The results are presented on a dry matter basis unless otherwise stipulated. |
| Document Control | <b>This test report shall not be reproduced, except in full, without the written approval of the laboratory.</b>                                                                                                                           |

|             |                                                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reported by | <p>** Please see the attached document for the definition of textural classes.</p> <p><b>Teresa Clyne</b><br/> Natural Resource Management, a trading division of Cawood Scientific Ltd.<br/> Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS<br/> Tel: 01344 886338<br/> Fax: 01344 890972<br/> email: enquiries@nrm.uk.com</p> |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

| Class           | Code |
|-----------------|------|
| Sand            | S    |
| Loamy sand      | LS   |
| Sandy loam      | SL   |
| Sandy Silt loam | SZL  |
| Silt loam       | ZL   |
| Sandy clay loam | SCL  |
| Clay loam       | CL   |
| Silt clay loam  | ZCL  |
| Clay            | C    |
| Silty clay      | ZC   |
| Sandy clay      | SC   |

For the *sand*, *loamy sand*, *sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

|    |                                                                   |
|----|-------------------------------------------------------------------|
| vf | Very Fine (more than 2/3's of sand less than 0.106 mm)            |
| f  | Fine (more than 2/3's of sand less than 0.212 mm)                 |
| c  | Coarse (more than 1/3 of sand greater than 0.6 mm)                |
| m  | Medium (less than 2/3's fine sand and less than 1/3 coarse sand). |

The subdivisions of *clay loam* and *silty clay loam* classes according to clay content are indicated as follows:

|   |                             |
|---|-----------------------------|
| M | medium (less than 27% clay) |
| H | heavy (27-35% clay)         |

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

## **APPENDIX 5 - DESCRIPTION OF ALC GRADES**

- Grade 1 - excellent quality agricultural land Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
- Grade 2 - very good quality agricultural land Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
- Grade 3 - good to moderate quality agricultural land Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
- Subgrade 3a - good quality agricultural land Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
- Subgrade 3b - moderate quality agricultural land Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
- Grade 4 - poor quality agricultural land Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.
- Grade 5 - very poor-quality agricultural land Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

