

8FC 569 78A

11196

**Mendip District Local Plan
Shepton Mallet**

**Agricultural Land Classification
July 1996**

Resource Planning Team
Taunton Statutory Group
ADAS Bristol

Job Number 11/96
Commission 1020
MAFF Reference EL 548

MENDIP LOCAL PLAN SHEPTON MALLET
AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

| | Page |
|--|-------------|
| INTRODUCTION | 1 |
| SUMMARY | 1 |
| CLIMATE | 2 |
| RELIEF | 3 |
| GEOLOGY AND SOILS | 3 |
| AGRICULTURAL LAND CLASSIFICATION AND MAP | 3 |
| REFERENCES | 5 |
| APPENDIX I Description of the Grades and Subgrades | 6 |
| APPENDIX II Definition of Soil Wetness Classes | 8 |
| APPENDIX III Survey Data | 9 |
| Sample Point Location Map | |
| Pit Descriptions | |
| Boring Profile Data | |
| Boring Horizon Data | |
| Abbreviations and Terms used in Survey Data | |

MENDIP LOCAL PLAN SHEPTON MALLET

AGRICULTURAL LAND CLASSIFICATION SURVEY

INTRODUCTION

1 This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 433.8 ha of land at Shepton Mallet. Field survey was based on 220 auger borings and 9 soil profile pits and was completed in April 1996.

2 The survey was conducted by the Resource Planning Team of ADAS Taunton Statutory Group on behalf of MAFF Land Use Planning Unit in its statutory role in the preparation of Mendip Local Plan.

3 Information on climate, geology and soils and from previous ALC surveys was considered and is presented in the relevant section. Apart from the published regional ALC map (MAFF 1977) which shows the site at a reconnaissance scale as mainly Grade 3, the site was previously surveyed in 1979 at a scale of 1:10 000 (ADAS 1979). This was carried out to previous guidelines and shows an intricate mixture of Subgrade 3b with Subgrade 3a and smaller areas of Subgrade 3c. However, the current survey uses the revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988) and supersedes any previous ALC survey. Grade descriptions are summarised in Appendix I.

4 At the time of survey, land cover was mainly grass for dairying with smaller areas of maize and potatoes. Other land which was not surveyed was mainly urban, residential, commercial, roads, sports fields and one small caravan site.

SUMMARY

5 The distribution of ALC grades is shown on the accompanying 1:20 000 scale ALC map. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas. Areas are summarised in the Table 1.

Table 1 **Distribution of ALC grades** **Shepton Mallet**

| Grade | Area (ha) | % Surveyed Area (361.4 ha) |
|-----------------|------------------|-----------------------------------|
| 3a | 76.8 | 21.3 |
| 3b | 189.0 | 52.3 |
| 4 | 84.9 | 23.5 |
| 5 | 10.7 | 3.0 |
| Other land | 72.4 | |
| Total site area | 433.8 | |

6 This shows that only 21% of the surveyed area was found to be best and most versatile This was mainly Subgrade 3a with moderate limitations due to workability droughtiness and wetness The main block of Subgrade 3a is shown at the north of the site although one smaller area is shown in the south west and similar individual scattered borings may also be found within the area shown as Subgrade 3b The area shown as Subgrade 3b has mainly a more serious moderate limitation due to droughtiness and the Grade 4 is mainly severely limited by wetness Smaller areas of Grade 4 and 5 on the north side of the town were found to be severely or very severely limited by steep gradients

CLIMATE

7 Estimates of climatic variables for this site were derived from the published agricultural climate dataset "Climatological Data for Agricultural Land Classification" (Meteorological Office 1989) using standard interpolation procedures Data for key points around the site are given in Table 2 below

8 Since the ALC grade of land is determined by the most limiting factor present, overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions Parameters used for assessing overall climate are accumulated temperature a measure of relative warmth and average annual rainfall, a measure of overall wetness The results shown in Table 2 indicate that there is an overall climatic limitation above 130m which limits the land to Grade 2

9 Climatic variables also affect ALC grade through interactions with soil conditions The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes, which are compared with the moisture available in each profile in assessing soil droughtiness limitations These are described in later sections

Table 2 Climatic Interpolations Shepton Mallet

| Grid Reference | ST 637421 | ST 603439 | ST 629437 |
|---------------------------------|-----------|-----------|-----------|
| Altitude (m) | 210 | 95 | 150 |
| Accumulated Temperature (day C) | 1322 | 1453 | 1390 |
| Average Annual Rainfall (mm) | 1019 | 950 | 990 |
| Overall Climatic Grade | 2 | 1 | 2 |
| Field Capacity Days | 209 | 203 | 206 |
| Moisture deficit (mm) Wheat | 73 | 90 | 80 |
| Potatoes | 56 | 79 | 66 |

RELIEF

10 Altitude ranges from 95 metres at Darshill Farm in the north west to 210 metres above Bullimore Farm in the south east with mainly gentle and moderate slopes which are not limiting. However steeper slopes were found on the valley sides to the north of the town which were assessed as strongly to moderately steeply sloping, even steeply sloping in parts. Gradient is mainly responsible for any downgrading in this area.

GEOLOGY AND SOILS

11 The underlying geology of the site is shown on the published geology maps (BGS 1984 IGS 1973) as mainly Lower Lias limestone and clay with smaller areas of other deposits mainly also limestone.

12 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW 1983) as mainly Sherborne, Ston Easton and Curtisden associations with smaller areas of Crwbin, Evesham and Elmton 2 associations.

13 The Sherborne association is described as shallow well drained brashy calcareous clay soils over limestone associated with slowly permeable calcareous clay soils. Ston Easton association is described as well drained fine silty over clayey soils on limestone and Curtisden association is described as silty soils over siltstone with slowly permeable subsoils and slight seasonal water logging.

14 The distribution of soils is also shown in greater detail as soil series on the published 1:63 360 scale Wells Sheet 280 (SSEW 1968) and Glastonbury Sheet 296 (SSEW 1955). These show soil series as defined at the time of publication, including Somerton (now Sherborne) and Evesham series mainly in the south of the site with Ston Easton series in the north and a mixture of Martock, Attrim and Long Load series on the wetter land in the east of the site.

15 The published distribution of both associations and earlier series was largely borne out by the current ALC survey.

AGRICULTURAL LAND CLASSIFICATION

16 The distribution of ALC grades found by the current survey is shown on the accompanying 1:20 000 scale map and areas are summarised in Table 1. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas.

Subgrade 3a

17 Subgrade 3a is consistently found mainly in the north of the site with mainly heavy clay loam topsoil texture and Wetness Class I (See Appendix II) a moderate limitation due to restricted workability. This mapping unit generally shows deeper soil profiles although with stone contents of over 50% typically below 45 or 50cm.

18 A small area of Subgrade 3a is also shown in the south of the site although even this is not consistent as laboratory analysis of topsoil at Pit 2 shows clay adjacent to a second sample at ASP 103 which shows heavy silty clay loam. The survey also revealed scattered borings of Subgrade 3a within the larger areas shown as Subgrade 3b although these do not occur consistently over a wide enough area to be mapped. However this survey was conducted at semi detailed intensity and it is quite possible that detailed survey of a smaller site within the area shown as Subgrade 3b may find small areas of Subgrade 3a. This is illustrated by the appearance of Pit 3 as an isolated occurrence of Subgrade 3a, where sieving revealed stone contents of 30% below 21cm, 65% below 35cm and shattered rock below 50cm. This is marginally deeper than other profiles assessed as Subgrade 3b and droughtiness calculation shows it to be within the limits for Subgrade 3a.

Subgrade 3b

19 Much of the large area shown as Subgrade 3b was found to be shallow frequently impenetrable to the auger at 25-30cm. Soil profile pits at Pits 1, 5 & 7 revealed stone contents assessed by sieving as typically 65-70% below 20cm and 75-90% below around 45cm. With Wetness Class I and topsoil textures ranging from medium clay loam to clay this implies a primary limitation due to droughtiness also limited by restricted workability where clay topsoil textures are found.

20 Mainly in the north of the site gradients of 8-11° were found which in the absence of a higher wetness limitation indicate a more serious moderate limitation due to gradient.

Grade 4

21 Large areas at the east of the site are found to be mainly Wetness Class III or IV with a slowly permeable layer starting generally in the upper subsoil. With topsoil textures of heavy silty clay loam or clay this implies a severe limitation due to wetness.

22 Small areas on the valley sides to the north of the town were found to have slopes of 12-15° representing a severe limitation due to gradient.

Grade 5

Steeply sloping land with slopes measured over 19° was also found on the valley sides to the north west of town.

P Barnett
Resource Planning Team
Taunton Statutory Group
ADAS Bristol
16 July 1996

REFERENCES

ADAS RESOURCE PLANNING TEAM, (1979) Agricultural Land Classification Survey of Shepton Mallet Scale 1 10000 Reference 36 ADAS Bristol.

BRITISH GEOLOGICAL SURVEY (1984) Sheet 280 Wells 1 50 000 series Solid and Drift edition BGS London

HODGSON J M (Ed) (1974) Soil Survey Field Handbook, Technical Monograph No 5 Soil Survey of England and Wales Harpenden.

HODGSON J M (In preparation) Soil Survey Field Handbook, Revised edition

INSTITUTE OF GEOLOGICAL SCIENCES (1973) Sheet 296 Glastonbury 1 50 000 series Solid and Drift edition IGS London

MAFF (1977) 1 250 000 series Agricultural Land Classification, South West Region MAFF Publications Alnwick

MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for grading the quality of agricultural land MAFF Publications Alnwick

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification Meteorological Office Bracknell

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South West England, 1 250 000 scale SSEW Harpenden

SOIL SURVEY OF ENGLAND AND WALES (1984) Soils and Their Use in South West England Bulletin No 14 SSEW Harpenden

SURVEY OF ENGLAND AND WALES (1955) 1 63 360 scale Glastonbury Sheet 296 SSEW Harpenden

APPENDIX I

DESCRIPTION OF GRADES AND SUBGRADES

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 include 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 most 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

Source MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land MAFF Publications Alnwick

APPENDIX II

DEFINITION OF SOIL WETNESS CLASSES

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years

Wetness Class II

The soil profile is wet within 70 cm depth for 31-90 days in most years or if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days but not wet within 40 cm depth for more than 30 days in most years

Wetness Class III

The soil profile is wet within 70 cm depth for 91-180 days in most years or if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31 and 90 days in most years

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years

Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years

Notes The number of days specified is not necessarily a continuous period

'In most years' is defined as more than 10 out of 20 years

Source Hodgson, J M (In preparation) Soil Survey Field Handbook, Revised Edition

APPENDIX III

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report. Terms used and abbreviations are set out below. These conform to definitions contained in the Soil Survey Field Handbook (Hodgson, 1974)

1 Terms used on computer database, in order of occurrence.

GRID REF National 100 km grid square and 8 figure grid reference

LAND USE At the time of survey

| | | | | | |
|------------|--------------|------------|---------------------|------------|-------------------------|
| WHT | Wheat | SBT | Sugar Beet | HTH | Heathland |
| BAR | Barley | BRA | Brassicas | BOG | Bog or Marsh |
| OAT | Oats | FCD | Fodder Crops | DCW | Deciduous Wood |
| CER | Cereals | FRT | Soft and Top Fruit | CFW | Coniferous Woodland |
| MZE | Maize | HRT | Horticultural Crops | PLO | Ploughed |
| OSR | Oilseed Rape | LEY | Ley Grass | FLW | Fallow (inc Set aside) |
| POT | Potatoes | PGR | Permanent Pasture | SAS | Set Aside (where known) |
| LIN | Linseed | RGR | Rough Grazing | OTH | Other |
| BEN | Field Beans | SCR | Scrub | | |

GRDNT Gradient as estimated or measured by hand held optical clinometer

GLEYS, SPL Depth in centimetres to gleying or slowly permeable layer

AP (WHEAT/POTS) Crop adjusted available water capacity

MB (WHEAT/POTS) Moisture Balance (Crop adjusted AP crop potential MD)

DRT Best grade according to soil droughtiness

If any of the following factors are considered significant Y will be entered in the relevant column

| | | | | | |
|-------------|------------------------|--------------|-------------|--------------|-------------------|
| MREL | Microrelief limitation | FLOOD | Flood risk | EROSN | Soil erosion risk |
| EXP | Exposure limitation | FROST | Frost prone | DIST | Disturbed land |
| CHEM | Chemical limitation | | | | |

LIMIT The main limitation to land quality. The following abbreviations are used

| | | | | | |
|------------|-------------------|------------|-----------------|------------|---------------------------|
| OC | Overall Climate | AE | Aspect | EX | Exposure |
| FR. | Frost Risk | GR. | Gradient | MR. | Microrelief |
| FL | Flood Risk | TX | Topsoil Texture | DP | Soil Depth |
| CH | Chemical | WE | Wetness | WK | Workability |
| DR. | Drought | ER. | Erosion Risk | WD | Soil Wetness/Droughtiness |
| ST | Topsoil Stoniness | | | | |

TEXTURE Soil texture classes are denoted by the following abbreviations

| | | | | | |
|------------|-----------------|------------|-----------------|------------|--------------------|
| S | Sand | LS | Loamy Sand | SL | Sandy Loam |
| SZL | Sandy Silt Loam | CL | Clay Loam | ZCL | Silty Clay Loam |
| ZL | Silt Loam | SCL | Sandy Clay Loam | C | Clay |
| SC | Sandy clay | ZC | Silty clay | OL | Organic Loam |
| P | Peat | SP | Sandy Peat | LP | Loamy Peat |
| PL | Peaty Loam | PS | Peaty Sand | MZ | Marine Light Silts |

For the sand, loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

| | |
|----------|--|
| F | Fine (more than 66% of the sand less than 0.2mm) |
| M | Medium (less than 66% fine sand and less than 33% coarse sand) |
| C | Coarse (more than 33% of the sand larger than 0.6mm) |

The clay loam and silty clay loam classes will be sub divided according to the clay content **M** Medium (< 27% clay) **H** heavy (27 - 35% clay)

MOTTLE COL Mottle colour using Munsell notation

MOTTLE ABUN Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2 - 20% **M** many 20 - 40% **VM** very many 40%+

MOTTLE CONT Mottle contrast

| | |
|----------|--|
| F | faint indistinct mottles evident only on close inspection |
| D | distinct mottles are readily seen |
| P | Prominent mottling is conspicuous and one of the outstanding features of the horizon |

PED COL Ped face colour using Munsell notation

GLEYS If the soil horizon is gleyed a **Y** will appear in this column If slightly gleyed an **S** will appear

STONE LITH Stone Lithology One of the following is used

| | | | |
|-------------|--|-------------|--------------------------------------|
| HR | All hard rocks and stones | SLST | Soft oolitic or dolimitic limestone |
| CH | Chalk | FSST | Soft fine grained sandstone |
| ZR | Soft, argillaceous or silty rocks | GH | Gravel with non porous (hard) stones |
| MSST | Soft, medium grained sandstone | GS | Gravel with porous (soft) stones |
| SI | Soft weathered igneous or metamorphic rock | | |

Stone contents are given in % by volume for sizes >2cm, >6cm and total stone >2mm

STRUCT The degree of development size and shape of soil peds are described using the following notation

| | | | | |
|-------------------------------------|------------|--------------------|-----------|----------------------|
| <u>Degree of development</u> | WK | Weakly developed | MD | Moderately developed |
| | ST | Strongly developed | | |
| <u>Ped size</u> | F | Fine | M | Medium |
| | C | Coarse | VC | Very coarse |
| <u>Ped Shape</u> | S | Single grain | M | Massive |
| | GR. | Granular | AB | Angular blocky |
| | SAB | Sub-angular blocky | PR | Prismatic |
| | PL | Platy | | |

CONSIST Soil consistence is described using the following notation

| | | | | | | | |
|-----------|-----------|-----------|----------------|-----------|----------------|-----------|------|
| L | Loose | VF | Very Friable | FR | Friable | FM | Firm |
| VM | Very firm | EM | Extremely firm | EH | Extremely Hard | | |

SUBS STR Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** Good **M** Moderate **P** Poor

POR Soil porosity If a soil horizon has poor porosity with less than 0.5% biopores >0.5mm, a **Y** will appear in this column

IMP If the profile is impenetrable to rooting a **Y** will appear in this column at the appropriate horizon

SPL Slowly permeable layer If the soil horizon is slowly permeable a **Y** will appear in this column

CALC If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a **Y** will appear this column

HORIZON BOUNDARY DISTINCTNESS

| | | | |
|---------------|-----------|----------------|--------|
| Sharp | <0.5cm | Gradual | 6-13cm |
| Abrupt | 0.5-2.5cm | Diffuse | >13cm |
| Clear | 2.5-6cm | | |

HORIZON BOUNDARY FORM Smooth, wavy, irregular or broken *

* See Soil Survey Field Handbook (Hodgson, 1974) for details

| | | | | | | | | | | | | | |
|----------------|--|-----------------|------------------|--|--------------|--|----------------|--|------------|--|-------------------------|--|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall | | 990 mm | | PARENT MATERIAL | | |
| Shepton Mallet | | Pit 1 (Asp 186) | 1 N | | PGR | | ATO | | 1390 day C | | Carboniferous limestone | | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days | | 206 | | SOIL SAMPLE REFERENCES | | |
| 11 96 | | 15 3 96 | ST 61634224 | | HLJ/PB | | Climatic Grade | | 2 | | HLJ/197 | | |
| | | | | | | | Exposure Grade | | | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|--|---|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 20 | MCL | 10YR42 | 4% > 2 cm 6% < 2 cm 10% HR (S D) | 0 | 0 | | | | G | MF VF | Y | Clear smooth |
| 2 | 48 | C | 10YR54 | 55% > 2 cm 20% < 2 cm 75% HR (S D) | 0 | 0 | Too stony | Fr | (M) | (G) | CF VF | Y | Grad wavy |
| 3 | 80 | C | 2.5Y73 | 65% > 2 cm 11% < 2 cm 76% HR (S + D) | 0 | 0 | Too stony | Fr | (M) | (G) | FF VF | Y | Absmooth |

| | | | | | |
|-----------------------------------|-----------------|-------------------|----------------------------|-------------------------|----|
| Profile Gleyed From | Available Water | Wheat | 38 mm | Final ALC Grade | 3b |
| Depth to Slowly Permeable Horizon | | Potatoes | 38 mm | Main Limiting Factor(s) | Dr |
| Wetness Class | I | Moisture Deficit | Wheat | 80 mm | |
| Wetness Grade | 2 | | Potatoes | 66 mm | |
| | | Moisture Balance | Wheat | -42 mm | |
| | | | Potatoes | 28 mm | |
| | | Droughtness Grade | 3b | (Calculated to 80 cm) | |
| | | Remarks | TS PSD borderline MCL/MZCL | | |

| | | | | | | | | |
|----------------|--|-----------------|------------------|-----------------|----------------|------------|------------------------|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | LAND USE | Av Rainfall | 990 mm | PARENT MATERIAL | |
| Shepton Mallet | | Pit 2 (Asp 116) | 1 North | Permanent Grass | ATO | 1390 day C | Lias limestone | |
| JOB NO | | DATE | GRID REFERENCE | DESCRIBED BY | FC Days | 206 | SOIL SAMPLE REFERENCES | |
| 11/96 | | 15/3/96 | ST 61074280 | HLJ/PB | Climatic Grade | 2 | HLJ 198 | |
| | | | | | Exposure Grade | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast, Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|--|--|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 20 | C | 10YR44 | < 1% Total (VIS) | None | None | | | | G | MF VF | | Clear smooth |
| 2 | 44 | C | 10YR54 56 | < 1% Total (VIS) | None | None* | MFSAB | Firable | Good | G | CV VF | | Gradual smooth |
| 3 | 66 | C | 10YR54 | 13% > 2 cm 16% < 2 cm 29% SLST (S + D) | None | None | Too stony (WMSAB) | Frable | (G) | (G) | CF VF | | Gradual smooth |
| 4 | 95+ | C | 10YR66 | 45% > 2 cm 10% < 2 cm 55% SLST (S + D) | None | None | Too stony | Firm | (P) | (G) | FF VF | | |

| | | | | | | |
|-----------------------------------|------------|--------------------|----------|------------------------|-------------------------|--|
| Profile Gleyed From | Not gleyed | Available Water | Wheat | 140 mm | Final ALC Grade | 3b |
| Depth to Slowly Permeable Horizon | No spl | | Potatoes | 125 mm | Main Limiting Factor(s) | Workability |
| Wetness Class | I | Moisture Deficit | Wheat | 80 mm | | |
| Wetness Grade | 3b | | Potatoes | 66 mm | | |
| | | Moisture Balance | Wheat | 60 mm | Remarks | * H3 stone HR/SLST |
| | | | Potatoes | 59 mm | | * H2 some small very hard concretions but not Mn |
| | | Droughtiness Grade | 1 | (Calculated to 120 cm) | | |

| | | | | | | | | | | | | | |
|----------------|--|-----------------|------------------|--|---------------------|--|----------------|--|------------|--|------------------------|--|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall | | 990 mm | | PARENT MATERIAL | | |
| Shepton Mallet | | Pit 3 (Asp 203) | 1 North | | Permanent Grassland | | ATO | | 1390 day C | | Lias limestone | | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days | | 206 | | SOIL SAMPLE REFERENCES | | |
| 11/96 | | 15 3 96 | ST 62474211 | | PB/HLJ | | Climatic Grade | | 2 | | HLJ 199 | | |
| | | | | | | | Exposure Grade | | | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|---|---|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 21 | MCL | 10YR54 | <1 % HR (VIS) | None | None | | - | | Good | MF + VF | 2 | Abrupt wavy |
| 2 | 35 | C | 10YR44 | 30 % > 2 cm <1 % < 2 cm 30 % HR (S) | None | None | MMSAB | Frable | Good | Good | MVF | 2 | Clear irregular |
| 3 | 50 | C | 10YR46 | 65 % > 2 cm <1 % < 2 cm 65 % HR (S) | None | None | Too stony | | M | (G) | CVF | 2 | Gradual smooth |
| 4 | 65+ | C | 10YR56 | 90 % HR (VIS) | None | None | Too stony | | M | (G) | FVF | 2 | |

Profile Gleyed From Not gleyed

Depth to Slowly Permeable Horizon No spl

Wetness Class I

Wetness Grade 2

Available Water Wheat 63 mm

Potatoes 63 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat 17 mm

Potatoes 3a mm

Droughtness Grade 3a (Calculated to 100 cm)

Final ALC Grade 3a

Main Limiting Factor(s) Drought

Remarks Assume H4 to 100 cm
2 3cm C layer intermittant between H3 and H4
but no wetness evident

| | | | | | | | | |
|----------------|--|-----------------|------------------|--------------|----------------|------------|------------------------|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | LAND USE | Av Rainfall | 990 mm | PARENT MATERIAL | |
| Shepton Mallet | | Pit 4 (Asp 198) | 0 | PGR | ATO | 1390 day C | Lias clay | |
| JOB NO | | DATE | GRID REFERENCE | DESCRIBED BY | FC Days | 206 | SOIL SAMPLE REFERENCES | |
| 11/96 | | 19 3 96 | ST 63354224 | PB/GMS | Climatic Grade | 2 | GMS 528 | |
| | | | | | Exposure Grade | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|----------|---------------------------|--------------------------------------|---|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 8 | HZCL/ ZC | 10YR42 | Non | FFFO 10YR56 | None | | | | | MF VF | | Clear smooth |
| 2 | 27 | C | 10YR52 | Occas onal larg | CDFO G 75YR58 10YR51 | None | MCSAB | Frable | Mod | Good | CVF | | Gradual smooth |
| 3 | 42 | C | 10YR63 | None | MMO G 10YR58 72 | None | WCSAB | Firm | Mod | Good | CVF | | Clear smooth |
| 4 | 58 | C | 10YR62 | None | MMO G 10YR58,71 | None | WCPr | Firm | Poor | Poor | FVF | | |

Profile Gleyed From 8 cm

Depth to Slowly Permeable Horizon 42 cm

Wetness Class IV

Wetness Grade 4

Available Water Wheat 128 mm

Potatoes 105 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat 48 mm

Potatoes +39 mm

Droughtiness Grade 1 (Calculated to 120 cm)

Final ALC Grade 4

Main Limiting Factor(s) Wetness

Remarks

| | | | | | | | | | | | |
|----------------|--|-------------------|------------------|--|--------------|--|--------------------|--|------------------------|--|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall 990 mm | | PARENT MATERIAL | | |
| Shepton Mallet | | Pit 5(nr Asp 125) | 2°N | | PGR | | ATO 1390 day C | | Lias limestone | | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days 206 | | SOIL SAMPLE REFERENCES | | |
| 11/96 | | 19 3 95 | ST 62574274 | | PB/GMS | | Climatic Grade 2 | | PB352 | | |
| | | | | | | | Exposure Grade | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast, Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|---|--|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 20 | C | 10YR32 | 3/4 > 2 cm 4/4 < 2 cm 7% Total HR (S + D) | None | None | | | | | MFVF | | Clear wavy |
| 2 | 60 | C | 7.5YR54 | 60% > 2 cm 5% < 2 cm 65% Total HR (S + D) | None | None | Too stony to assess | | | | CVF | | Clear irregular |
| 3 | 80+ | C | 10YR54 | 90% HR (S) | None | None | Too stony | | | | FVF | | |

Profile Gleyed From not gleyed

Depth to Slowly Permeable Horizon no SPL

Wetness Class I

Wetness Grade 3b

Available Water Wheat 58 mm

Potatoes 60 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat 22 mm

Potatoes -6 mm

Droughtiness Grade 3b (Calculated to 100 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Droughtiness workability

Remarks Rock is limestone

| | | | | | | | | | | | |
|----------------|--|----------------|--|------------------|--|-----------------|--|----------------|--|------------------------|--|
| SITE NAME | | PROFILE NO | | SLOPE AND ASPECT | | LAND USE | | Av Rainfall | | PARENT MATERIAL | |
| Shepton Mallet | | Pit 6 (Asp 75) | | 3 South West | | Permanent Grass | | 990 mm | | Lias clay | |
| JOB NO | | DATE | | GRID REFERENCE | | DESCRIBED BY | | ATO | | SOIL SAMPLE REFERENCES | |
| 11/96 | | 20 3 96 | | ST 63034350 | | HLJ/PB | | 1390 day C | | HLJ 202 | |
| | | | | | | | | FC Days | | | |
| | | | | | | | | 206 | | | |
| | | | | | | | | Climatic Grade | | | |
| | | | | | | | | 2 | | | |
| | | | | | | | | Exposure Grade | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast, Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|--------------------------------------|--|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 18 | HCL | 10YR42 | < 1% HR T tal (VIS) | None | None | | | | Good | MVF | Y | Gradual smooth |
| 2 | 32 | HCL | 10YR52 | 1% HR (VIS) | 0 | 0 | MCSAB lending to WMPV | Fr | M | G | CVF | Y | Gradual smooth |
| 3 | 42 | C | 10YR54 | 0 | FFFO 10YR58 | 0 | MM,CSAB | Fr | G | G | FVF | Y | Clear wavy |
| 4 | 75+ | C | 25YR53 | 0 | CDMO 10YR58 | 0 | MCAB | VFm | M | P | FVF | Y | |

Profile Gleyed From 42
Depth to Slowly Permeable Horizon 42
Wetness Class III
Wetness Grade 4

Available Water Wheat 142 mm
Potatoes 118 mm
Moisture Deficit Wheat 80 mm
Potatoes 66 mm
Moisture Balance Wheat +62 mm
Potatoes +52 mm
Droughtness Grade 1 (Calculated to 120 cm)

Final ALC Grade 4
Main Limiting Factor(s) We

Remarks

| | | | | | | | | | | | | |
|----------------|--|----------------|------------------|--|--------------|--|--------------------|--|------------------------|--|--|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall 990 mm | | PARENT MATERIAL | | | |
| Shepton Mallet | | Pit 7 (Asp 77) | 2 W | | PGR | | ATO 1390 day C | | Lias limestone | | | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days 206 | | SOIL SAMPLE REFERENCES | | | |
| 11 96 | | 20 3 96 | ST 60484329 | | HLJ/PB | | Climatic Grade 2 | | HLJ 203 | | | |
| | | | | | | | Exposure Grade | | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast, Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|---|--|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 22 | C | 10YR52 | 2% HR (VIS) | 0 | 0 | | | | G | MF VF | Y | Clear wavy |
| 2 | 46 | C | 10YR54 | 60% >2 cm 2% <2 cm 62% HR (S + D) | 0 | 0 | Too stony | | (M) | (G) | CVF | Y | Clear wavy |
| 3 | 70+ | C | 2.5YR64 | 87% >2 cm 3% <2 cm 90% HR(S) | 0 | 0 | Too stony | | (P) | (G) | FVF | Y | |

Profile Gleyed From

Depth to Slowly Permeable Horizon

Wetness Class I

Wetness Grade 3b

Available Water Wheat 62 mm

Potatoes 60 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat 18 mm

Potatoes -6 mm

Droughtiness Grade 3a (Calculated to 100 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Wk

Remarks

| | | | | | | | | | | | | |
|----------------|--|-------------|------------------|--|--------------|--|----------------|--|------------|--|------------------------|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall | | 989 mm | | PARENT MATERIAL | |
| Shepton Mallet | | Pit 8 ASP15 | 5 South | | PGR | | ATO | | 1391 day C | | Lias Limestone | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days | | 209 | | SOIL SAMPLE REFERENCES | |
| 11/96 | | 21 3 96 | ST 60504418 | | GMS | | Climatic Grade | | 2 | | GMS 524 | |
| | | | | | | | Exposure Grade | | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|---|---|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 30 | HCL | 10YR42 | 1% > 2 cm 1% < 2 cm 2.4 Total HR (S + D) | None | None | | | | Good | MVF | | Gradual wavy |
| 2 | 50 | HCL | 10YR42 | 50% > 2 cm 4% < 2 cm 54% Total HR (S + D) | None | None | Too stony to assess | | | Good | MVF | | Gradual wavy |
| 3 | 80+ | C | 10YR43 | 50% > 2 cm 4% < 2 cm 54% Total HR (S + D) | None | None | | | | Good | CVF | | |

Profile Gleyed From not gleyed

Depth to Slowly Permeable Horizon no SPL

Wetness Class I

Wetness Grade 3a

Available Water Wheat 89 mm

Potatoes 85 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat +9 mm

Potatoes +19 mm

Droughtness Grade 2 (Calculated to 100 cm)

Final ALC Grade 3a

Main Limiting Factor(s) workability

Remarks Stone in horizons 2 and 3 is a mix of crumbly limestone and harder limestone Some large blocks but of crumbly limestone so quoted stone content considered representative

| | | | | | | | | | | | | | |
|----------------|--|-------------|------------------|--|--------------|--|----------------|--|------------|--|------------------------|--|--|
| SITE NAME | | PROFILE NO | SLOPE AND ASPECT | | LAND USE | | Av Rainfall | | 990 mm | | PARENT MATERIAL | | |
| Shepton Mallet | | Pit 9 ASP42 | 3 South | | PGR | | ATO | | 1390 day C | | Lias Limestone | | |
| JOB NO | | DATE | GRID REFERENCE | | DESCRIBED BY | | FC Days | | 206 | | SOIL SAMPLE REFERENCES | | |
| 11/96 | | 21 3 96 | ST 6050418 | | GMS | | Climatic Grade | | 2 | | GMS 525 | | |
| | | | | | | | Exposure Grade | | | | | | |

| Horizon No | Lowest Av Depth (cm) | Texture | Matrix (Ped Face) Colours | Stoniness Size Type and Field Method | Mottling Abundance Contrast, Size and Colour | Mangan Concs | Structure Ped Development Size and Shape | Consistence | Structural Condition | Pores (Fissures) | Roots Abundance and Size | Calcium Carbonate Content | Horizon Boundary Distinctness and form |
|------------|----------------------|---------|---------------------------|---|--|--------------|--|-------------|----------------------|------------------|--------------------------|---------------------------|--|
| 1 | 20 | HCL | 10YR42 | Neg | None | None | | | | Good | MVF | | Abrupt Smooth |
| 2 | 45 | HCL | 7 5YR54 | 35% > 2 cm 2% < 2 cm 37% Total HR (S + D) | None | None | MCSAB | Friable | Mod | Good | MVF | | Clear wavy |
| 3 | 80+ | HCL | 7 5YR56 | 50% > 2 cm 4% < 2 cm 54% Total HR (S + D) | None | None | Too Stony to assess | | | Good | CVF | | |

Profile Gleyed From not gleyed

Depth to Slowly Permeable Horizon no SPL

Wetness Class I

Wetness Grade 3a

Available Water Wheat 92 mm

Potatoes 84 mm

Moisture Deficit Wheat 80 mm

Potatoes 66 mm

Moisture Balance Wheat +12 mm

Potatoes +18 mm

Droughtiness Grade 2 (Calculated to 100 cm)

Final ALC Grade 3a

Main Limiting Factor(s) workability

Remarks Horizon 3 quite sandy