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Mendip District Local Plan
Glastonbury

Agricultural Land Classification
July 1996

Resource Planning Team
Taunton Statutory Group
ADAS Bristol

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Ministry of Agriculture Fisheries and Food
Land Use Planning Unit

MENDIP LOCAL PLAN GLASTONBURY

AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

MENDIP LOCAL PLAN GLASTONBURY

AGRICULTURAL LAND CLASSIFICATION SURVEY

INTRODUCTION

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of 135 4ha of land at two sites around Glastonbury Field survey was based on 132 auger borings and 5 soil profile pits and was completed in May 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 sites at a reconnaissance scale as mainly Grade 3 on higher ground with Grade 4 on the peat moors The site was previously surveyed in the early 1980 s at a scale of 1 25 000 (ADAS 198?) 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 Other land which was not surveyed includes mainly urban land residential industrial roads and a cemetery with a strip of land at the north of the site taken for amenity tree planting in association with the new by pass

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 Glastonbury

Grade	Area (ha)	% Surveyed Area (92 9 ha)
3b	57 0	61 4
4	35 4	38 1
5	0 5	0 5
Other land	42 5	
Total site area	135 4	

6 The survey found no mappable area of best and most versatile land Much of the higher ground was found to be Subgrade 3b with more serious moderate limitations mainly due to wetness with a considerable area of Grade 4 in the northern site severely limited by gradient The two areas of peat moor were assessed as Grade 4 the one in the north with severe limitation due to wetness and that in the south primarily limited by a severe limitation due to regular annual flooding

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 no overall climatic limitation

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 A critical boundary of 175 FC Days was found to follow the 30 metre contour in the northern site

Table 2 Climatic Interpolations Glastonbury

Grid Reference		ST 506397	ST 509404	ST 501381
Altitude (m)		70	10	10
Accumulated Temperature (day C)		1486	1554	1555
Average Annual Rainfall (mm)		847	795	783
Overall Climatic Grade		1	1	1
Field Capacity Days		180	173	170
Moisture deficit (mm)	Wheat	96	106	107
	Potatoes	87	100	101

RELIEF

10 Altitude ranges from around 70 metres at Edmund Hill in the northern site to just below 10 metres on each peat moor Slopes range from level on the peat moors to mainly gentle and moderate on the higher ground with a significant area of strongly sloping moderately steeply sloping and even steeply sloping land on the north side of town This gives rise to a considerable mapping unit of Grade 4 limited mainly by a severe limitation due to gradient However other areas with a moderate gradient limitation were found at some borings also to have overriding limitation due to wetness in which cases the primary limitation is recorded as wetness

11 Evidence taken from the Upper Brue Internal Drainage Board (Huxter personal communication 1996) indicates that flooding is normally experienced on Read Mead in the southern site typically twice per annum and for around 10 days duration This amounts to frequent long duration winter flooding limiting land to Grade 4 and in the absence of any other overriding limitation flooding remains the primary limitation to land quality in this area

GEOLOGY AND SOILS

12 The underlying geology of the site is shown on the published geology map (IGS 1973) as mainly Lower Lias clay with some limestone on the higher ground This is overlain by silts and clays of the Middle Lias but this only effects significant areas of agricultural land around Edmund Hill in the northern site The peat moors are shown as alluvium over peat The current survey found parent materials closely matching the published geology although little limestone was found in the Lower Lias clay

13 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1 250 000 (SSEW 1983) as mainly Martock association with some South Petherton association on the higher ground and mainly Midelney association on the peat moors with a small area of Altcar 1 association just cutting into the northern site

14 Martock association is described as slowly permeable seasonally waterlogged stoneless silty over clayey and clayey soils over siltstone or shale with some similar soils with slowly permeable sub soils and slight waterlogging

15 South Petherton association is described as deep well drained silty soils some over soft rock Risk of water erosion

16 Midelney association is described as stoneless clayey soils mostly overlying peat variable effected by groundwater which is in places controlled by ditches and pumps Flat land with a risk of flooding locally

17 *Altcar 1 association is described as deep peat soils with earthy topsoil Groundwater* usually controlled by ditches and pumps

18 This distribution was largely borne out by the recent ALC survey although the supposedly well drained South Petherton association developed on Middle Lias deposits failed to produce a significant mapping unit of better quality land The one small area of such soils at Edmund Hill not limited by gradient was found to show evidence of wetness at several borings with a slowly permeable layer and gleying in the subsoil

19 The survey areas is also included in the more detailed 1 63 360 scale soil survey map of Glastonbury Sheet 296 (SSEW 1955) This shows soil series as used at that time mainly Altrim Martock and Long Load on the higher ground and Lydford Midelney and Sedgemoor series on the lower ground

AGRICULTURAL LAND CLASSIFICATION

20 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 3b

21 Much of the land shown as Subgrade 3b was found to be Wetness Class IV typically with a slowly permeable layer starting in the upper subsoil although Wetness Class III was also found with a slowly permeable layer starting lower down the profile Topsoil textures were mainly heavy silty clay loam These conditions are illustrated by Pits 3 and 4

22 On the low lying land small areas at the fringe were found to be slightly raised and with deeper clay deposits These have a mineral clay topsoil and although found to be mainly Wetness Class IV were assessed as Subgrade 3b with a more serious moderate limitation due to wetness

Grade 4

23 Particularly on the peat moor of the northern site the depth of clay cap decreases rapidly away from the higher ground However the surface is virtually level and where the clay cap is less than 50cm deep any slowly permeable layer cannot extend to the minimum depth to meet the definition of SPL and assessment of Wetness Class thus depends on evidence for the depth and duration of waterlogging This is taken from the depth of surrounding ditch water levels and the depth of water table found in soil pits and auger borings This was checked against a hydrological assessment by the Upper Brue Internal Drainage Board (Huxter personal communication 1996) This indicates that water table levels at the time of survey were likely to prevail on both moors from 1 April to 1 December each year at which time a somewhat lower winter water level would be contrived by the management of ditch water levels Pits 1 and 2 are typical of these conditions in the fringe of the moor in the northern site and much of Read Mead in the south where an SPL gives way to organic clay and peat above 50cm depth This is assessed as Wetness Class IV wetness grade 3b However over much of Read Mead there is an overriding limitation due to flood risk as described in Paragraph 11 giving ALC Grade 4

24 Pit 5 in the northern site is typical of those Midelney profiles with less depth of clay cap The top soil was found to be an organic clay with around 17% organic matter which means that ALC Grade according to soil wetness is determined by reference to Table 7 in the Revised Guidelines (MAFF 1988) as ALC Grade 4 with a severe limitation due to wetness

25 A significant area on the higher ground around Edmund Hill in the northern site was found to be moderately steeply or even steeply sloping a severe gradient limitation

Grade 5

26 The small area shown as Grade 5 was found to be steeply sloping with gradients over 18

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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 (eg 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

GLEY SPL *Depth in centimetres to gleying or slowly permeable layer*

AB (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

GLEY 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
MISST	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

Degree of development	**WK**	Weakly developed	**MD**	Moderately developed
	ST	Strongly developed		
Ped size	**F**	Fine	**M**	Medium
	C	Coarse	**VC**	Very coarse
Ped Shape	**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

2 Additional terms and abbreviations used mainly in soil pit descriptions

STONE ASSESSMENT

VIS	Visual	**S**	Sieve	**D**	Displacement

MOTTLE SIZE

EF	Extremely fine <1mm	**M**	Medium 5 15mm
VF	Very fine 1 2mm>	**C**	Coarse >15mm

F Fine 2 5mm

MOTTLE COLOUR May be described by Munsell notation or as ochreous (OM) or grey (GM)

ROOT CHANNELS In topsoil the presence of rusty root channels should also be noted

MANGANESE CONCRETIONS Assessed by volume

N	None		**M**	Many	20 40%
F	Few	<2%	**VM**	Very Many	>40%
C	Common	2 20%			

STRUCTURE Ped Development *

WA	Weakly adherent	**M**	Moderately developed
W	Weakly developed	**S**	Strongly developed

POROSITY

P	Poor	less than 0 5% biopores at least 0 5mm in diameter
G	Good	more than 0 5% biopores at least 0 5mm in diameter

ROOT ABUNDANCE

The number of roots per 100cm^2		Very Fine and Fine	Medium and Coarse
F	Few	1 10	1 or 2
C	Common	10 25	2 5
M	Many	25 200	>5
A	Abundant	>200	

ROOT SIZE

VF	Very fine	<1mm	**M**	Medium	2 5mm
F	Fine	1 2mm	**C**	Coarse	>5mm

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		PARENT MATERIAL
Glastonbury	Pit 1 (ASP 13)	0	Permanent Grass	Av Rainfall 795 mm ATO 1554 day C	Alluvial clay over peat
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 173	SOIL SAMPLE REFERENCES
10 96	8 05 96	ST 5029 4024	HLJ/PB	Climatic Grade 1 Exposure Grade	PB 360

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	C	10YR42	<1 / (vis)	FDFO (75YR58)	None					MF&VF		Clear smooth
2	35	C	10YR53 (10YR52)	0/( )	MDFO (10YR58)	Few	MCPr	Firm	P	Poor	CF&VF		Clear wavy
3	44	OC	10YR32	0/ (vis)	CDFO (10YR58)	None	MCSAB	Friable	M	Poor	CF&VF		Gradual Smooth
4	80	Peat	10YR22	0/ (vis)	None	None					CVF		

Profile Gleyed From 18cm

Depth to Slowly Permeable Horizon 18 to 35cm

Wetness Class IV

Wetness Grade 3b

Available Water	Wheat	263	mm
	Potatoes	261	mm
Moisture Deficit	Wheat	106	mm
	Potatoes	100	mm
Moisture Balance	Wheat	+ 157	mm
	Potatoes	+ 61	mm

Droughtiness Grade 1 (Calculated to 120 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Wetness

Remarks SPL does not extend below 35cm

Pit assessed as WC IV from nearby ditch water levels and water level of 63 cm in pit

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE			PARENT MATERIAL
Glastonbury	Pit 2 (ASP 110)	0	Ley	Av Rainfall ATO FC Days Climatic Grade Exposure Grade	783 mm 1555 day C 170 1	Aluvium Clay over peat
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY			SOIL SAMPLE REFERENCES
10 96	09/05/96	ST 49903809	HLJ/PB			PB 361

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	15	C	10YR42	0	CDFO 75YR58	0				G	MF,VF		Gradual smooth
2	37	C	25Y62	0	MDFO 10YR58	0	MCPr	Fm	P	P	CF VF		Clear Smooth
	45	C	75YR52	0	CDFO 75YR58	0	WCSAB	Fm	P	P	CVF		Clear Smooth
4	52	OC	75YR41	0	CDMO G 10YR58 62	0	WCSAB	Fr	M	G	CVF		Clear Smooth
5	65+	P	10YR31	0	0	0					FVF		

Profile Gleyed From 0

Depth to Slowly Permeable Horizon 15 45cm

Wetness Class IV

Wetness Grade 3b

Available Water	Wheat	242 mm
	Potatoes	140 mm
Moisture Deficit	Wheat	106 mm
	Potatoes	100 mm
Moisture Balance	Wheat	+ 136 mm
	Potatoes	+ 40 mm
Droughtiness Grade	1	(Calculated to 120cm)

Final ALC Grade 4

Main Limiting Factor(s) Flooding

Remarks Augered in peat to 110 cm
Pit water level 46cm This and an assessment of nearby ditch water levels indicate WC IV
Information subsequently available from IDB on annual flooding indicates overall Grade 4 on flood risk

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE			PARENT MATERIAL
Glastonbury	Pit 3 (ASP 32)	0	PGR	Av Rainfall	847 mm	Lias clay
				ATO	1486 day C	
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days	180	SOIL SAMPLE REFERENCES
10 96	09/05/96	ST 51284021	HLJ/PB	Climatic Grade	1	PB 362
				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	15	HZCL	10YR52	0	CDFO (75YR56) Also CRRC	None				G	MF&VF		Gradual smooth
	40	C	10YR62	0	MDMO (10YR66)	None	MCPr	Fm	Poor	P/G*	CF&VF		Gradual Smooth
	60+	C	2 5Y60	0	MDMO (10YR66)	None	MCPr	Fm	Poor	P*	FVF		

Profile Gleyed From 0

Depth to Slowly Permeable Horizon 15cm

Wetness Class IV

Wetness Grade 3b

Available Water	Wheat	122 mm
	Potatoes	>9 mm
Moisture Deficit	Wheat	106 mm
	Potatoes	100 mm
Moisture Balance	Wheat	16 mm
	Potatoes	1 mm
Droughtiness Grade	1	(Calculated to 120cm)

Final ALC Grade 3b

Main Limiting Factor(s) We

Remarks H2 several medium earthworm pores (sporadic) therefore borderline G/P porosity
H3 few medium pores poor porosity

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE			PARENT MATERIAL
Glastonbury	Pit 4 (ASP 79E)	0°	Orchard/PGR	Av Rainfall	847 mm	Middle Lias silt and clay
				ATO	1486 day C	
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days	180	SOIL SAMPLE REFERENCES
10 96	9 5 96	ST 50663970	HLJ/PB	Climatic Grade	1	PB 363
				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	29	HZCL	10YR43	1 / HR (vis)	FDFO (75YR56)	None				Good	CF&VF		Gradual smooth
2	48	C	10YR63	0	CDFO (75YR58)	None	MCSAB	Friable	Moderate	Poor (Good fissures)	FF&VF		Gradual Smooth
3	80	ZC	10YR62	0	CDMO (10YR58)	None	WCAB (tending to fine platy)	Very Firm	Poor	Poor	FVF		

Profile Gleyed From	29cm
Depth to Slowly Permeable Horizon	48cm
Wetness Class	III
Wetness Grade	3b

Available Water	Wheat	136 mm
	Potatoes	111 mm
Moisture Deficit	Wheat	106 mm
	Potatoes	100 mm
Moisture Balance	Wheat	30 mm
	Potatoes	11 mm
Droughtiness Grade	1	(Calculated to 120cm)

Final ALC Grade	3b
Main Limiting Factor(s)	Wetness

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE			PARENT MATERIAL
Glastonbury	Pit 5 (ASP 3)	0	PGR	Av Rainfall	795 mm	Alluvial clay and peat
				ATO	1554 day C	
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days	173	SOIL SAMPLE REFERENCES
10 96	9 05 96	ST 50884048	PB/HLJ	Climatic Grade	1	PB 364
				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	23	OC	10YR51	0	CDFO 75YR58	None	MCPr Breaking to MMSAB	Friable		Poor	MF&VF		Gradual smooth
2	60	Peat	10YR32	0	None	None	Massive				CVF		

Profile Gleved From 0cm

Depth to Slowly Permeable Horizon No SPL

Wetness Class IV

Wetness Grade 4 (Table 7)

Available Water	Wheat	403 mm
	Potatoes	246 mm
Moisture Deficit	Wheat	106 mm
	Potatoes	100 mm
Moisture Balance	Wheat	297 mm
	Potatoes	146 mm
Droughtiness Grade	1	(Calculated to 120cm)

Final ALC Grade 4

Main Limiting Factor(s) Wetness

Remarks H1 possibly an SPL but only extends to 23cm Breaks to MMSAB with increasing OM content at depth
Water level at 50 cm in pit This and an assessment of nearby ditch water levels indicate WC IV borderline WCV
Sward composition also indicates borderline WCV
Surface bearing capacity observed to be limited (soft)