17/94

Taunton Deane Local Plan

AGRICULTURAL LAND CLASSIFICATION REPORT OF SURVEY

Resource Planning Team
Taunton Statutory Unit

February 1994

ADAS

TAUNTON DEANE LOCAL PLAN

Agricultural Land Classification

Report of Survey

1 SUMMARY

Land at 3 sites in Taunton Deane amounting to 420 2 ha was surveyed in February 1994 using the MAFF Agricultural Land Classification (ALC) system A small part of the Comeytrowe site had previously been surveyed in March 1989 and the results of this survey are reproduced here The surveys were carried out on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan

Fieldwork was carried out by ADAS Resource Planning Team Taunton Statutory Unit at a scale of 1 10 000 The information is correct at this scale but any enlargement would be misleading

The distribution of ALC grades identified in the survey areas is detailed below and illustrated on the accompanying maps

Distribution of ALC Grades Comeytrowe Site

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	1 8	1 7	1 8	
3a	61 5	57 9	62 4	
3b	25 9	24 4	26 3	
4	9 3	8 7	9 5	
Urban	4 8	4 5	100	(98 5 ha)
Non-agricultural	0 6	0 5		
Agric buildings	0 2	0 2		
Land Not Surveyed	2 2	2 1		
TOTAL	106 3	100		

64% of the agricultural land was found to be best and most versatile with minor and moderate limitations of workability causing downgrading to Grades 2 and 3a More serious moderate limitations of wetness and workability caused down grading of the remainder of the land to Grades 3b and 4

Distribution of ALC Grades Monkton Heathfield Site

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	84 8	42 7	50 0	
3a	75 9	38 3	44 7	
3b	9 0	4 5	5 3	
Urban	11 4	5 7	100	(169 7 ha)
Non-agricultural	2 1	1 1		
Agric buildings	1 3	0 7		
Land Not Surveyed	13 9	7 0		
TOTAL	198 4 ha	100		

95% of the agricultural land at this site was found to be best and most versatile with minor and moderate limitations due to workability and droughtiness causing downgrading to Grades 2 and 3a A more serious moderate limitation of wetness and workability caused the downgrading of several small areas to Subgrade 3b

Distribution of ALC Grades Creech Heathfield Site

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	34 8	30 1	34 3	
3a	62 4	54 0	61 4	
3b	4 4	3 8	4 3	
Urban	6 6	5 7	100	(101 6 ha)
Non-agricultural	3 9	3 4		
Agric buildings	0 8	0 7		
Land Not Surveyed	2 6	2 3		
TOTAL	115 5 ha	100		

96% of the agricultural land at this site was found to be best and most versatile with minor and moderate limitations due to droughtiness and workability causing downgrading to Grades 2 and 3a

2 INTRODUCTION

Land at 3 sites in Taunton Deane amounting to 420 2 ha was surveyed using the MAFF Agricultural Land Classification system in February and March 1994 with a small area at Comeytrowe having previously been surveyed to current standards in October 1989 The surveys were carried out on behalf of MAFF as part of its statutory role in the preparation of Taunton Deane Local Plan

This report refers to surveys at Comeytrowe Monkton Heathfield and Creech Heathfield The field work was carried out by ADAS Resource Planning Team Taunton Statutory Unit at a scale of 1 10 000 with one auger sample point approximately every hectare and a soil profile examination pit approximately every 20 hectares Details of the findings of the surveys and the distribution of grades are detailed below for each site The information is correct at published scale but any enlargement would be misleading

The published provisional 1 to one mile ALC maps (MAFF 1974 etc) show the grades of the sites at a reconnaissance scale and for some of the sites more recent surveys may have been carried out However these are considered inadequate for Local Plan purposes and the recent survey was undertaken to provide a more detailed representation of the agricultural land quality It supersedes any previous survey The recent survey also uses the Revised Guidelines and Criteria for Grading the Quality of Agricultural Land (MAFF 1988)

The Agricultural Land Classification system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use The grading takes account of the top 120 cm of the soil profile A description of the grades used in the ALC system can be found in Appendix 2

3 CLIMATE

The grade of the land is determined by the most limiting factor present The overall climate is considered first because it can have an overriding influence on restricting land to lower grades despite other favourable conditions

Estimates of climatic variables were obtained for each site by interpolation from the 5-km grid agricultural climate dataset (Meterological Office 1989) and are shown in the details for each site

The parameters used for assessing overall climatic limitation are accumulated temperature a measure of the relative warmth of a locality and average annual rainfall a measure of overall wetness Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections A description of the Soil Wetness Classes used can be found in Appendix 3

4 COMEYTROWE SITE

4 1 106 3 hectares of land to the south west of Taunton were surveyed in February 1994 by examining a total of 102 auger borings and 4 soil profile pits An area of approximately 13 ha in the north of the area had previously been surveyed to current standards in October 1989 and the results of this survey are repeated here

4 2 Climate

Climatic data for the site was interpolated as described in Section 3 The results are shown below and indicate that there is no overall climatic limitation No local climatic limitations were noted

Grid Reference	ST 209194	ST 205232
Altitude (m)	53	30
Accumulated Temperature (day °)	1521	1545
Average Annual Rainfall (mm)	888	808
Overall Climatic Grade	1	1
Field Capacity Days	187	173
Moisture Deficit (mm) Wheat	101	107
Potatoes	92	99

4 3 Relief and Landcover

Altitude ranges from 30 m to 60 m AOD With drainage to the Galmington Stream slopes are mainly gentle and are not limiting

At the time of survey landcover was mainly grass and winter cereals

4 4 Geology and Soils

The published 1 50 000 scale drift geology map, sheet 311 (Geological Survey of England and Wales 1976) indicates that the site is underlain by Keuper marl with a small area of valley gravel along parts of the Galmington Stream

Soils mapped by the Soil Survey of England and Wales (1983) indicate soils of the Worcester Association which are described as slowly permeable non-calcareous and calcareous reddish clayey soils over mudstone shallow on steeper soils Associated with similar non-calcareous fine loamy over clayey soils A slight risk of water erosion is noted

4 5 Agricultural Land Classification

The distribution of ALC grades identified in the survey is shown on the accompanying ALC map and summarised in the table below The information is correct at the scale shown but any enlargement would be misleading

Distribution of ALC Grades Comeytrowe

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	1 8	1 7	1 8	
3a	61 5	57 9	62 4	
3b	25 9	24 4	26 3	
4	9 3	8 7	9 5	
Urban	4 8	4 5	100	
Non-agricultural	0 6	0 5		(98 5 ha)
Agric buildings	0 2	0 2		
Land Not Surveyed	2 2	2 1		
TOTAL	106 3	100		

Grade 2

The small area of Grade 2 is Wetness Class 1 but downgraded in the light of climatic data relevant to the north end of the site by a slight limitation of workability due to heavy silty clay loam topsoil textures

Subgrade 3a

Much of the area graded 3a was found to be Wetness Class I and at many borings a heavy clay loam topsoil texture was found which in combination with the climatic data relevant to the centre and south of the site implies a moderate limitation due to restricted workability

Subgrade 3b

Land graded 3b was generally found to be Wetness Class III which with heavy clay loam topsoil texture gives a more serious workability limitation

Subgrade 4

Small areas of Grade 4 land were generally found to be Wetness Class III but with silty clay or clay topsoil textures and the climatic data relevant to the centre and south of the site suffer a serious workability limitation

Other Land

Other land categories relate to residential areas and farms

5 MONKTON HEATHFIELD SITE

5 1 198 4 hectares of land around Monkton Heathfield were surveyed in February 1994 by examining a total of 194 auger borings and 8 soil profile pits Although small parts of the area had previously been surveyed the level of fieldwork was considered inadequate for Local Plan purposes and the whole site has been included in the current survey

5 2 Climate

Climatic data for the site was interpolated as described in Section 3 The results are shown below and indicate that there is no overall climatic limitation No local climatic limitations were noted

Grid Reference	ST 260249	ST 253267
Altitude (m)	20	40
Accumulated Temperature (day °)	1555	1532
Average Annual Rainfall (mm)	742	758
Overall Climatic Grade	1	1
Field Capacity Days	161	163
Moisture Deficit (mm) Wheat	112	108
Potatoes	106	101

5 3 Relief and Landcover

Altitude ranges from 20 to 40 m

Slopes are gentle to very gentle and are not limiting Arterial drainage to tributaries of the River Tone is generally good but appears to be difficult in one small area to the east of the fencing works around ST 262258 Inadequate outfall here causes prolonged surface ponding and moderate drainage limitation

At the time of survey landcover was mainly grass and winter cereals

5 4 Geology and Soils

The published 1 50 000 scale solid and drift geology map sheet 295 (Geological Survey of England and Wales 1984) indicates that the site is underlain by Keuper marl with patches of River Deposits and Alluvium in the east of the site

Soils mapped by the Soil Survey of England and Wales (1983) indicate soils of three associations and this distribution was largely borne out by the current survey

Whimple 3 to the west of Green Lane reddish fine loamy or fine silty over clayey soils with slowly permeable subsoils and slight seasonal waterlogging Some similar clayey soils on brows Slowly permeable seasonally waterlogged fine loamy and fine silty over clayey soils on lower slopes

Whimple 1 to the east of Green Lane towards Monkton Elm reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging Associated with similar well drained soils some over gravel

Newnham Association around Hyde Lane and Langaller well drained reddish loamy soils over gravel locally deep some similar soils affected by groundwater

5 5 Agricultural Land Classification

The distribution of ALC grades identified in the survey is shown on the accompanying ALC maps and areas are summarised in the table below The information is correct at the scale shown but any enlargement would be misleading

Distribution of ALC Grades Monkton Heathfield

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	84 8	42 7	50 0	
3a	75 9	38 3	44 7	
3b	9 0	4 5	5 3	
Urban	11 4	5 7	100	
Non-agricultural	2 1	1 1		(169 7 ha)
Agric buildings	1 3	0 7		
Land Not Surveyed	13 9	7 0		
TOTAL	198 4 ha	100		

Grade 2

Areas mapped as Grade 2 suffer a minor limitation mainly due to droughtiness caused by a slight stone content which reduces the available water in the soil profile

Smaller areas were found to be Wetness Class II indicating a minor wetness limitation

Subgrade 3a

Soils classified as Subgrade 3a have a moderate limitation as described in Appendix 2 At this site and particularly in the centre of the site droughtiness caused by a moderate stone content is the most commonly occurring limitation

In the north of the site where deposits of river gravel are more shallow and the Keuper marl is closer to the surface a slowly permeable layer may be found in the lower subsoil indicating Wetness Class III within the prescribed limits

Subgrade 3b

The several small areas mapped as Subgrade 3b have a slightly more serious wetness limitation This is indicated by the appearance of a slowly permeable layer higher in the subsoil or by the combination of a slowly permeable layer with a heavy clay loam topsoil In either case there is a more serious limitation particularly with the timing of cultivations when the soil is difficult to work

Other Land

Areas marked as non agricultural land include a cricket pitch

Areas not surveyed include an area of 11 ha between Allen s Brook and Tanpitts Farm where the owner refused access but on the evidence available from surrounding areas it is considered that this land is likely to be best and most versatile Subgrade 3a or Grade 2

6 CREECH HEATHFIELD SITE

6 1 198 4 hectares of land to the west of Creech Heathfield were surveyed in February 1994 by examining a total of 118 auger borings and 6 soil profile pits

6 2 Climate

Climatic data for the site was interpolated as described in Section 3 The results are shown below and indicate that there is no overall climatic limitation No local climatic limitations were noted

Grid Reference	ST 268 278	ST 270 267
Altitude (m)	40	25
Accumulated Temperature (day °)	1531	1548
Average Annual Rainfall (mm)	763	747
Overall Climatic Grade	1	1
Field Capacity Days	165	162
Moisture Deficit (mm) Wheat	106	110
Potatoes	99	104

6 3 Relief and Landcover

Altitude ranges from 20 to 40 m

Slopes are gentle to very gentle and are not limiting

At the time of survey landcover was mainly grass and winter cereals

6 4 Geology and Soils

The published 1 50 000 scale solid and drift geology map sheet 295 (Geological Survey of England and Wales 1984) indicates that the site is underlain by Keuper marl with patches of River Deposits and Alluvium

Soils mapped by the Soil Survey of England and Wales (1983) indicate soils of the Whimple 1 and Newnham associations This distribution was largely borne out by the current survey

Whimple 1 to the north of the site and towards Walford reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging Associated with similar well drained soils some over gravel

Newnham Association around Langaller well drained reddish loamy soils over gravel locally deep Some similar soils affected by groundwater

6 5 Agricultural Land Classification

The distribution of ALC grades identified in the survey is shown on the accompanying ALC maps and areas are summarised in the table below The information is correct at the scale shown but any enlargement would be misleading

Distribution of ALC Grades Creech Heathfield

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
2	34 8	30 1	34 3	
3a	62 4	54 0	61 4	
3b	4 4	3 8	4 3	
Urban	6 6	5 7	100	(101 6 ha)
Non-agricultural	3 9	3 4		
Agric buildings	0 8	0 7		
Land Not Surveyed	2 6	2 3		
TOTAL	115 5 ha	100		

Grade 2

Areas mapped as Grade 2 suffer a minor limitation mainly due to droughtiness caused by a slight stone content which reduces the available water in the soil profile

Small areas were found to have a minor wetness limitation Wetness Class II

Areas mapped as Grade 2 at this site include occasional Grade 1 profiles where neither droughtiness nor wetness was limiting but the extent of the area was inadequate to make a separate mapping unit

Subgrade 3a

Soils classified as Subgrade 3a have a moderate limitation as described in Appendix 2 At this site and particularly in the centre of the site droughtiness caused by a moderate stone content is the most commonly occurring limitation

Subgrade 3b

The small area graded 3b suffers a more serious moderate droughtiness limitation due to a higher stone content in the soil

Other Land

Areas not surveyed include an area of 3 ha by Walford Cross where the owner indicated that planning consent for industrial use had already been granted

APPENDIX 1

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES 1976 Drift edition sheet 311 Wellington 1 50 000 scale

GEOLOGICAL SURVEY OF ENGLAND AND WALES 1984 Solid and Drift edition Sheet 295 Taunton 1 50 000 scale

MAFF (1970) Agricultural Land Classification Map Sheet 177 Provisional 1 63 360 scale

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

METEOROLOGICAL OFFICE (1989) published climatic data extracted from the agroclimatic dataset compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South-west England 1 250 000 scale

APPENDIX 2

DESCRIPTION OF ALC 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

Descriptions of other land categories used on ALC maps

Urban

Built-up or hard uses with relatively little potential for a return to agriculture including housing industry commerce education transport religious buildings cemeteries Also hard-surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be reclaimed using derelict land grants

Non-agricultural

'Soft uses where most of the land could be returned relatively easily to agriculture including private park land public open spaces sports fields allotments and soft-surfaced areas on airports/airfields Also active mineral workings and refuse tips where restoration conditions to soft after-uses may apply

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (eg polythene tunnels erected for lambing) may be ignored

Open water

Includes lakes ponds and rivers as map scale permits

Land not surveyed

Agricultural land which has not been surveyed

Where the land use includes more than one of the above landcover types eg buildings in large grounds and where may be shown separately Otherwise the most extensive cover type will usually be shown

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

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

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)

[cNL461]

17-94 Taunton Deane Local Plan Creech Heathfield

	HA	ACRES	% AGRICULTURAL LAND	% TOTAL LAND
Grade 1	0 0	0 0	0 0	0 0
Grade 2	34 8	86 1	34 3	30 1
Subgrade 3a	62 4	154 2	61 4	54 0
Subgrade 3b	4 4	10 8	4 3	3 8
Grade 4	0 0	0 0	0 0	0 0
Grade 5	0 0	0 0	0 0	0 0
Total Agri Land =	101 6	251 1	100	87 9
Urban	6 6	16 4	-	5 8
Non-Agricultural	3 9	9 7	-	3 4
Woodland	0 0	0 0	-	0 0
Ag-Buildings	0 8	2 0	-	0 7
Open Water	0 0	0 0	-	0 0
Land Not Surveyed	2 6	6 4	-	2 3
Total Site Area =	115 5	285 7	-	100 0

Paul

Gill edited 16/94 + 17/94

These are the new areas

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 6 (Asp 68)	0°	Fodder Turnips	Av Rainfall 747 mm ATO 1548 FC Days 162 Climatic Grade 1	Keuper marl
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		TOPSOIL SAMPLE
17/94	8/2/94	ST 265 273	PB/GMS		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	30	5YR44	MCL	5% HR Total visual	none		Good			Common fine + v fine	none	none	Abrupt smooth
2	40	5YR46	HCL	10% HR Total visual	none			Assume moderate		Few v fine	none	Few	Clear smooth
3	65	7 5YR64	C	30% HR Total visual	10YR64 many	MCSAB	Good	M	Friable	Few v fine	none	Common, many in top 10 cm	Gradual smooth
4	90+	2 5YR44	C		10YR64 mainly at top	WCSAB	low porosity	Good	Friable	none		Common at top few below	

Profile Gleyed From 40 cm

Depth to Slowly Permeable Horizon 65 cm

Wetness Class II

Wetness Grade 2

Available Water	Wheat	169 mm
	Potatoes	105 mm
Moisture Deficit	Wheat	110 mm
	Potatoes	104 mm
Moisture Balance	Wheat	+59 mm
	Potatoes	+1 mm
Droughtiness Grade		2 mm

Final ALC Grade 2

Main Limiting Factor(s) Wk

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 1 ASP 10	4° S	FLW	Av Rainfall 747 mm ATO 1548 FC Days 162 Climatic Grade 1	Keuper marl
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		
17 94	4 2 94	ST 275 279	PB GMS		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast, Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	25	05YR44	MCL	2% HR vis	0					CF VF	0	0	Abrupt smooth
2	40	05YR46 (Ped 05YR54)	HCL	0	0	MCSAB	Good	M	Friable	FF VF	0	Com	Grad smooth
3	80+	25YR36 (Ped 05YR54)	<	0	FFFOM	MMP	<½%	P	Firm	0	0	Com	

Profile Gleyed From 40

Depth to Slowly Permeable Horizon 40

Wetness Class 3

Wetness Grade 3a

Available Water Wheat

Potatoes

Moisture Deficit Wheat

Potatoes

Moisture Balance Wheat

Potatoes

Droughtiness Grade 1

Final ALC Grade 3a

Main Limiting Factor(s) W

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 2 ASP 95	0°	PGR	Av Rainfall 763 mm ATO 1531 FC Days 165 Climatic Grade 1	River deposits
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		
17/94	4/2/94	ST 270 271	HLJ/PB		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast, Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	22	75YR44	MSZL	0% > 2cm 11% < 2cm 11% Total sieve + displacement	0					MF VF	0	0	Clear smooth
2	70	5YR44	MCL	1% ZR >2cm 32% ZR <2cm 33% ZR Total sieve + displacement	0	WCSAB	Good	M	Friable	MF VF	0	0*	Clear smooth
3	120	25YR46	MCL	1% ZR >2cm 39% ZR <2cm 40% ZR Total sieve + displacement	Ochreous and pale weathered stones only	WMSAB	Good	G	Friable	FF VF	0	F	

Profile Gleyed From

Depth to Slowly Permeable Horizon -

Wetness Class 1

Wetness Grade 1

Available Water	Wheat	145 mm
	Potatoes	103 mm
Moisture Deficit	Wheat	110 mm
	Potatoes	104 mm
Moisture Balance	Wheat	+35 mm
	Potatoes	1 mm
Droughtiness Grade		2

Final ALC Grade 2

Main Limiting Factor(s) Droughtiness

Remarks

*Common Mn at base of H2 water evident at this point

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 3 ASP 17	2° East	PGR	Av Rainfall 747 mm ATO 1548 FC Days 162 Climatic Grade 1	Keuper marl
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		
17/94	7/2/94	ST 272 278	PB/HLJ		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	28	05YR44	MCL	9% <2cm 9% HR Total sieve + displacement	None		Good			Many fine very fine	0	None	Clear smooth
2	65	7 5YR54	MSZL	2% HR >2cm 40% HR <2cm 42% HR Total sieve + displacement	None	WDCSAB	Good	M	Friable	Common fine + very fine	0	None	Gradual smooth
3	120+	05YR54	MSL	6% HR >2cm 43% HR <2cm 49% HR Total sieve + displacement	Few faint fine orchreous + pale mottles	WDCSAB	Good	M	Friable	Few fine + very fine	0	Few	

Profile Gleyed From

Depth to Slowly Permeable Horizon

Wetness Class I

Wetness Grade 1

Available Water	Wheat	111 mm
	Potatoes	88 mm
Moisture Deficit	Wheat	110 mm
	Potatoes	104 mm
Moisture Balance	Wheat	+1 mm
	Potatoes	16 mm
Droughtiness Grade		3a

Final ALC Grade 3a

Main Limiting Factor(s) Drought

Remarks

Texture and structure in H3 difficult because of stones!

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 4 ASP 23	2° West	Ley	Av Rainfall 747 mm ATO 1548 FC Days 162 Climatic Grade 1	Keuper marl
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		
17/94	7/2/94	ST 268 277	PB/HLJ		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	25	05YR43	MSL	1/HR > 2cm 14/ HR <2cm 15/ HR Total Sieve + displacement	None		Good			Common fine + very fine	None	None	Abrupt smooth
2	65	05YR44	MSL	1/ HR >2cm 14/ HR <2cm 15/ HR Total Sieve + displacement	None	WDCSAB	Good	G	Friable	Common fine + very fine	None	None	Gradual smooth
3	90	05YR44	MSL	7% HR >2cm 25% HR <2cm 32/ HR Total Sieve + displacement	None	WDCSAB	Good	G	Friable	Common fine + very fine	None	None	Clear smooth
4	120+	10YR56	LMS	1% HR > 2cm 23/ HR <2cm 24/ HR Total sieve + displacement	None	WDCAB	Good	M	Very friable	Few fine + very fine	None	None	Clear smooth

Profile Gleyed From

Depth to Slowly Permeable Horizon

Wetness Class I

Wetness Grade 1

Available Water	Wheat	122 mm
	Potatoes	101 mm
Moisture Deficit	Wheat	110 mm
	Potatoes	104 mm
Moisture Balance	Wheat	+12 mm
	Potatoes	3 mm
Droughtiness Grade		2

Final ALC Grade 2

Main Limiting Factor(s) Drought

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Creech Heathfield	Pit 5 (ASP 70)	0°	Cereal	Av Rainfall 747 mm ATO 1548 FC Days 162 Climatic Grade 1	Keuper marl
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		
17/94	8/2/94	ST 267 273	PG/GMS		

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness Size Shape Type and Field Method	Mottling Abundance Contrast Size and Colour	Structure Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary Distinctness and form
1	28	7 5YR43	MCL	5% HR >2cm 10% HR >2mm 15% HR Total visual	none		Good			Many fine + v fine	none	none	Clear smooth
2	65	7 5YR44	MSL	9% HR >2cm 58% HR >2mm 67% HR Total sieved/displ	none	WCSAB	Good	Moderate	Friable	Many fine + v fine	none	common	Gradual wavy
3	100+	2 5YR44	MSCL	23% HR Total sieved/displ	none	WMAB	Good	Moderate	Friable	none	none	few at top of horizon	

Profile Gleyed From not gleyed

Depth to Slowly Permeable Horizon no SPL

Wetness Class I

Wetness Grade 1

Available Water Wheat 105 mm

Potatoes 70 mm

Moisture Deficit Wheat 109 mm

Potatoes 104 mm

Moisture Balance Wheat 5 mm

Potatoes 34 mm

Droughtiness Grade 3b

Final ALC Grade 3b

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