West Wiltshire Local Plan

Holt

Agricultural Land Classification
September 1996

Resource Planning Team
Taunton Statutory Group
ADAS Bristol

Job Number 18/96
Commission 1114
MAFF Reference EL 45/1201

Ministry of Agriculture, Fisheries and Food
Land Use Planning Unit

WEST WILTSHIRE LOCAL PLAN
HOLT

AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

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18/96

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AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

1. This report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey of 312.9 ha of land at Holt. Field survey was based on 64 auger borings and 5 soil profile pits, and was completed in September 1996.

2. The survey was conducted by the Resource Planning Team of ADAS Taunton Statutory Group on behalf of the MAFF Land Use Planning Unit in its statutory role in the preparation of the West Wiltshire 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 part of the site was previously surveyed in 1981 at a scale of 1:25 000 (ADAS, 1981). The regional ALC map shows the majority to be Grade 3 with an area of Grade 1 coinciding with the terrace gravels. A similar distribution is shown on the 1981 survey but with Grade 2 instead of Grade 1. 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. Land to the east of the railway around Melksham was surveyed at the same time as the current survey at Holt and the findings of that survey (ADAS, 1996) have been taken into account in the presentation of the results in this report.

5. At the time of survey land cover was predominantly grassland with some maize and cereals. Other land which was not surveyed included woodland and urban areas.

6. The distribution of ALC grades is shown on the accompanying 1:25 000 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: Holt

Grade	Area (ha)	% Surveyed Area (244.9 ha)
1	77.8	31.8
2	9.1	3.7
3a	121.2	49.5
3b	36.8	15.0
Other land	77.0	-
Total site area	321.9	-

7. Over 80% of the land surveyed at Holt is 'best and most versatile'. The areas of Grade 1 are well drained sandy soils with no limitation to agricultural versatility. A small area of variable soils with a minor limitations is mapped as Grade 2. Two soil types exist within the Subgrade 3a areas. In the north well drained soils developed over Cornbrash have a moderate droughtiness limitation. The remaining Subgrade 3a areas have a moderate wetness limitation. The Subgrade 3b soils experience a more severe moderate wetness limitation.

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AGRICULTURAL LAND CLASSIFICATION SURVEY

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CLIMATE

8. 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.

9. 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.

10. 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: Holt

Grid Reference		ST 862 625
Altitude (m)		45
Accumulated Temperature (day °C)		1496
Average Annual Rainfall (mm)		770
Overall Climatic Grade		1
Field Capacity Days		172
Moisture deficit (mm):	Wheat	103
	Potatoes	96

RELIEF

11. Altitude ranges from 35 metres along the railway to 55 metres near Oxen Leaze Farm with gentle slopes.

GEOLOGY AND SOILS

12. The underlying geology of the site is shown on the published geology map (IGS, 1965,1990). Recent deposits of alluvium are found along the streams with associated first terrace gravel deposits which also extend along the railway line. Cornbrash limestone is mapped in the north of the site with Kellaways clays elsewhere. The soils found during the survey reflected the underlying geology.

13. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983). More detailed soils information is also available in the 1:63 360 scale survey of Malmesbury and Bath area (SSEW, 1974). This shows Sherborne series overlying the Cornbrash limestone with a fringe of poorly drained Evesham series. Fladbury series follows the streams with Isle Abbotts mapped in similar locations to the Terrace gravels. The central area is mapped as the Hardenhuish series.

14. The Isle Abbotts series is a gleyed brown earth described as loamy soils over head or river drift , or Jurassic clay. Hardenhuish series is a fine loamy surface water gley found over Jurassic sandy clay. Fladbury and Evesham are both clayey soils, Fladbury being a ground water gley over alluvium and Evesham a gleyed brown soil over Jurassic clay. Sherborne series is described as a stony fine loamy to clayey soil over Jurassic limestone.

15. The recent survey found soils similar to the mapped series, although the extent of them varied. The scale of mapping meant that the finer detail of the soils map did not always become apparent, particularly to the north of the village.

AGRICULTURAL LAND CLASSIFICATION

16. The distribution of ALC grades found by the current survey is shown on the accompanying 1:25 000 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.

Grade 1

17. The soils which have been mapped as Grade 1 have fine sandy silt loam topsoils. The subsoils are heavier and show some evidence of restricted drainage in the subsoils. However these soils are assessed as Wetness Class I (see Appendix II) with no limitations to agricultural versatility. Pits 1 and 2 represent this unit. Within the area there are isolated borings which are Grade 2 caused by a minor wetness limitation but these cannot be mapped as a separate unit at the scale of mapping.

Grade 2

18. A small area of Grade 2 has been mapped in the west of the village. Here the soils are variable reflecting the complexity of the published soils map referred to above. This unit represents soils with minor workability and wetness limitations generally with medium clay loam topsoils and varibale Wetness Classes.

Subgrade 3a

19. Two soil types have been mapped as Subgrade 3a. In the north of the site the soils which have developed over the Combrash are typical of the Sherborne series. These generally have clay topsoils which impose a moderate workability limitation. The topsoil overlies a stony subsoil with 31% stone measured in Pit 4 rising to over 70% stone in the lower subsoil. These soils also have a moderate droughtiness limitation. The soils are free draining and are assessed as Wetness Class I.

20. The second soil type has a moderate wetness limitation and is described by Pit 5. These soils have medium clay loam topsoils over heavy clay loam and clay subsoils. The lower subsoils are gleyed and slowly permeable. The soils are assessed as Wetness Class III. There are some soils in this unit which have heavier topsoils and little evidence of wetness. These soils are limited by a moderate workability limitation and are described by Pit 3. There are also occasional isolated higher grade borings included in this unit because of the scale of mapping.

Subgrade 3b

21. Three areas have been mapped as Subgrade 3b. These soils are poorly drained and are assessed as Wetness Class IV. The topsoil textures are variable but in all cases the resultant grade is 3b. These soils have gleying high in the profile and have slowly permeable subsoils.

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September 1996

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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 (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.*

GLEY, 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.

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
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

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
Holt	Pit 1 (ASP 25E)	1° South	Maize	Av Rainfall: 770 mm ATO: 1496 day °C	First Terrace Gravel
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 172 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
18/96	11/07/96	ST 8805 6245	HLJ/PB		RPT/HLJ 223

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	FSZL	10YR43	<1 % (visual)	None	None	-	-	-	Good	CM+VF	-	Abrupt Smooth
2	56	MCL/ HCL	10YR46	<1 %	None	None	MCSAB	Friable	Moderate	Good	CF+VF	-	Clear Smooth
3	72	HCL	10YR53	<1%	CDFO (10YR68) MDMG (10YR62)	Many	MCP	Friable	Moderate	Good	CVF	-	Clear Smooth
4	100+	C	10YR63	<1%	MDMO (7.5YR58) CDMG (10YR62)	None	WCP	Friable	Moderate	Good*	FVF	-	-

Profile Gleyed From: 56 cm

Depth to Slowly Permeable Horizon: No spl

Wetness Class: I

Wetness Grade: 1

Available Water Wheat: 154 mm

Potatoes: 125 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 51 mm

Potatoes: 29 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks: * occasional/common large pores
Topsoil within 1% of MCL

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Holt	Pit 2 (ASP 54)	1°N	PGR	Av Rainfall: 770 mm ATO: 1496 day °C	First Terrace Gravel
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 172 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
18/96	16/7/96	ST 8616 6157	GMS/PB		RPT/GMS 546

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	25	MSZL	10YR42	None	CFFO 10YR46	None	-	-	-	-	MVF	-	Clear smooth
2	52	HCL	10YR54	None	None	Few	WCPr Br to MCSAB	Friable	Mod	Good	CVF	-	Clear smooth
3	95+	C	10YR54	None	FFFO	Few	MCPr	Firm	Poor	Good	FVF	-	-

Profile Gleyed From: -

Depth to Slowly Permeable Horizon: -

Wetness Class: I

Wetness Grade: 1

Available Water Wheat: 137 mm

Potatoes: 114 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 34 mm

Potatoes: 18 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks: CDFO mottles at boundary of H1/H2 (depths of 20-45cm). Topsoil within 1% of MCL

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Holt	Pit 3 (ASP 27)	0°	Maize	Av Rainfall: 770 mm ATO: 1496 day °C	First Terrace Gravel/Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 172 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
18/96	16/7/96	ST 8592 6225	GMS		RPT/GMS 544

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	C	10YR42	1% SLST (visual)	None	None	-	-	-	-	FVF	-	Clear smooth
2	68	ZC	10YR43	1% SLST (visual)	None	None	MCSAB	Friable	Mod	Good	None	-	Gradual smooth
3	95	C	7.5YR46	1%SLST (visual)	FFFO *10YR56* (patchy)	Common	MM/CSAB	Friable	Mod	Good	None	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 3a

Available Water Wheat: 136 mm

Potatoes: 110 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 33 mm

Potatoes: 14 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Workability

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Holt	Pit 4	1° S	OSR	Av Rainfall: 770 mm ATO: 1496 day °C	Cornbrash limestone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 172 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
18/96	24/9/96	ST 8556 6225	GMS		GMS 565

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	25	C	10YR42	5% > 2cm SLST 13% > 2mm SLST 18% Total SLST (S+D)	None	None	-	-	-	-	CVF	Yes	Abrupt smooth
2	50cm	C	7.5YR54	10% > 2cm SLST 21% > 2mm SLST 31% Total SLST (S+D)	None	None	WF, MSAB	Friable	Good	Good	CVF	Yes	Clear smooth
3	60+	C	10YR54	>70% SLST (VIS)	None	None	-	-	-	Good	CVF between stones	Yes	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 3a

Available Water Wheat: 87 mm

Potatoes: 86 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: -16 mm

Potatoes: -10 mm

Droughtiness Grade: 3a (Calculated to 80 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Workability/ Droughtiness

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Holt	Pit 5	2° N	PGR	Av Rainfall: 770 mm ATO: 1496 day °C	Kellaways Clays
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 172 Climatic Grade: 1	SOIL SAMPLE REFERENCES
18/96	24/9/96	ST 8653 6265	GMS	Exposure Grade: 1	GMS 566

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	MCL	10YR42	None	FRR	None	-	-	-	-	MVF	-	Clear smooth
2	50	HCL	10YR54	None	None	None	MCPr	Friable	Mod	Good	CVF	-	Clear smooth
3	80+	C	10YR63 (7.5YR52)	None	MDFO 7.5YR58	Few	MCPr	Firm	Poor	Poor	FVF	-	-

Profile Gleyed From: 50 cm

Depth to Slowly Permeable Horizon: 50 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 135 mm

Potatoes: 112 mm

Moisture Deficit Wheat: 103 mm

Potatoes: 96 mm

Moisture Balance Wheat: 32 mm

Potatoes: 16 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Wetness

Remarks: