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West Somerset Local Plan
Williton, Carhampton and Dunster Marsh

Agricultural Land Classification
August 1996

Resource Planning Team
Taunton Statutory Group
ADAS Bristol

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Ministry of Agriculture, Fisheries and Food
Land Use Planning Unit

WEST SOMERSET LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

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SUMMARY

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 29.1 ha of land in three sites at Williton, Carhampton and Dunster Marsh. Field survey was based on 27 auger borings and 3 soil profile pits, and was completed in August 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 the West Somerset Local Plan.

3. Information on climate, geology and soils, and from previous ALC surveys was considered and is presented in the relevant section. 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. The distribution of ALC grades is shown on the accompanying 1:10 000 scale ALC maps. 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 Tables 1-3.

Table 1: Distribution of ALC grades: Williton

Grade	Area (ha)	% Surveyed Area (9.7 ha)
3a	6.3	64.9
3b	3.4	35.1
Agricultural land not surveyed	0.4	
Other land	2.2	
Total site area	12.3	

5. This shows that of the main site to the east of the town 65 % was found to be best and most versatile. This was Subgrade 3a, limited mainly by workability. In the centre of the site the area shown as Subgrade 3b was found to be Wetness Class II and where clay or silty clay topsoil textures were found, the ALC grade became Subgrade 3b. The several smaller sites to the west of the town centre were found to be mainly non-agricultural.

Table 2: Distribution of ALC grades: Carhampton

Grade	Area (ha)	% Surveyed Area (5.5ha)
3b	5.5	100.0
Other land	2.0	
Total site area	7.5	

6. This shows the whole site to be Subgrade 3b, mainly limited by wetness, with mainly heavy silty clay loam topsoil texture at Wetness Class III. However, this site comprises mainly the small corners of several fields so that if a larger area were surveyed in detail, some distinction may be drawn in the ALC grading, which may affect small areas of this site.

Table 3: Distribution of ALC grades: Dunster Marsh

Grade	Area (ha)	% Surveyed Area (8.2 ha)
3a	8.1	100.0
Other land	1.1	
Total site area	9.2	

7. This shows the whole site to be Subgrade 3a, limited mainly by droughtiness. However, the parent material is river terrace gravel, which is highly variable and this survey shows one boring of Grade 2 with lower stone content and several borings in particularly stony areas which are shown as Subgrade 3b. If a larger area were surveyed it is likely that these scattered borings would be found to be part of larger areas which would be mapped as the different appropriate grades.

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INTRODUCTION

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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 sites are given in the relevant section.

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 indicate that there is no overall climatic limitation for any of the sites.

10. Climatic variables also affect ALC grades 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.

WILLITON SITE

11. Apart from the published regional ALC map (MAFF, 1977), which shows the main site at a reconnaissance scale as Grade 2 and the smaller sites as Grade 3, the sites have not been surveyed previously. However, sites adjacent to each of the current sites were surveyed separately in 1993, as Williton sites 1 and 2 (ADAS 1993). The 1993 survey at Williton site 1 shows subgrade 3a, limited mainly by workability on land immediately to the west of the main current site. The survey at Williton site 2 lies immediately to the west of the smaller current sites and shows that land to be Grade 2, limited mainly by workability with medium clay loam topsoils at Wetness Class I.

Climate

The following climatic data is taken for the main site.

Table 4: Climatic Interpolations: Williton site

Grid Reference		ST 087412
Altitude (m)		25
Accumulated Temperature (day °C)		1546
Average Annual Rainfall (mm)		818
Overall Climatic Grade		1
Field Capacity Days		178
Moisture deficit (mm):	Wheat	102
	Potatoes	94

Relief

12. Altitude varies little at around 25 m with mainly level and gentle slopes which are not limiting.

13. Although the Donniford stream is reputed to have flooded in living memory, the land in question is considered to be no longer at risk of regular flooding, although some ponding of surface water is known to occur around the centre of the site.

Geology and Soils

14. The underlying geology of the site is shown on the published geology map (IGS, 1974 and BGS, 1984) as mainly Mercia Mudstone Group underlying most of the main site, with Otter sandstone at the south of the main site and mainly river terrace deposits underlying the smaller sites. The current survey of the main site found parent materials to be mainly consistent with river terrace deposits, with no typical native Mercia Mudstone Group, but did find evidence of the Otter sandstone as sandy loam parent materials in the subsoil at the south of the site.

15. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983) as mainly Whimple 3 association. This is described as reddish, fine loamy or fine silty over clayey soils with slowly permeable suboils and slight seasonal waterlogging, developed on drift over mudstone. This was largely borne out by the current survey although only one boring showed a slowly permeable layer.

Agricultural Land Classification

16. The distribution of ALC grades found by the current survey is shown on the accompanying 1:10 000 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. Borings in the areas shown as Subgrade 3a indicate mainly heavy clay loam topsoil texture at Wetness Class I, a moderate limitation due to workability. Variable stone content was found mainly in the subsoil and although this was assessed accurately by seiving only at the soil profile pit, droughtiness was not considered to represent the primary limitation at any observation point.

Subgrade 3b

18. The area shown as Subgrade 3b includes five observation points, all Wetness Class II. However, only two auger borings clearly show clay with silty clay topsoil texture. The others, including Pit 1 show heavy clay loam or heavy silty clay loam topsoil over clay but when subjected to laboratory analysis the particle size distribution for the top 25 cm of soil at Pit 1 proved to be just silty clay (37% clay content). Such minor variation is possible throughout the area shown as Subgrade 3b, although this mapping unit includes two auger borings shown as Subgrade 3a.

Other Land

19. Most of the several smaller sites were found to be non-agricultural, including a garden, Christmas trees, agricultural merchant's yard, school playing field and waste ground at the back of the school. Two very small paddocks were not surveyed as they were considered to be ancillary to domestic gardens. Land cover of the main site was grass for grazing by sheep and horses.

CARHAMPTON SITE

20. Apart from the published regional ALC map (MAFF 1977), which shows the site at a reconnaissance scale as mainly Grade 2, with Grade 3 to the north east of the main road, the site had not been surveyed previously.

Climate

21. The following data represents the rather narrow range of climatic variation over the site.

Table 5: Climatic Interpolations: Carhampton site

Grid Reference		ST 005429	ST 003428
Altitude (m)		30	40
Accumulated Temperature (day °C)		1541	1530
Average Annual Rainfall (mm)		859	872
Overall Climatic Grade		1	1
Field Capacity Days		187	189
Moisture deficit (mm):	Wheat	96	94
	Potatoes	87	85

Relief

22. Altitude ranges from just below 30 m at the east end of the site to around 40 m in the south west of the site. Slopes are mainly level and gentle which are not limiting.

Geology And Soils

23. The underlying geology of the site is shown on the published geology map (IGS, 1974) as Triassic Upper Marls. This was borne out by the current ALC survey, although at some points stone contents of up to 36% were found in the upper subsoil and at the other points the appearance of the native marl can be strongly influenced by wetness, where it lies in a hollow.

24. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983) as mainly Worcester associaton. These are described as slowly permeable, non-calcareous and calcareous reddish clayey soils over mudstone. This was largely borne out by the current survey although the stone contents found at several auger borings and at the main pit site are higher than in the typical Worcester profile.

Agricultural Land Classification

25. The distribution of ALC grades found by the current survey is shown on the accompanying 1:10 000 scale map and areas summarised in Table 2. The detail of information shown at this scale is appropriate to hte intensity of field survey but could be misleading if enlarged or applied to small areas.

Subgrade 3b

26. The whole site is shown as Subgrade 3b, typically with heavy silty clay loam topsoil at Wetness Class III. However, several of the auger borings proved to be impenetrable and the evidence of the soil profile pit, particularly in relation to the identification of slowly permeable layer, has been applied to several of the borings. This shows a slowly permeable layer, starting at 52 cm in Horizon 3, and despite the continuing presence of stones at around 36%, the content of which was assessed by seiving in Horizon 4.

27. Landcover at the time of survey was all cereals.

DUNSTER MARSH SITE

28. Apart from the published regional ALC map (MAFF, 1977), which shows the site at a reconnaissance scale as mainly Grade 2 with Grade 3 east of the River Avill, the site had not been surveyed previously.

Climate

29. The following point is taken to represent the climatic data for the site.

Table 6: Climatic Interpolations: Dunster Marsh site

Grid Reference		SS 992444
Altitude (m)		10
Accumulated Temperature (day °C)		1564
Average Annual Rainfall (mm)		801
Overall Climatic Grade		1
Field Capacity Days		176
Moisture deficit (mm):	Wheat	102
	Potatoes	94

Relief

30. Altitude is around 10 m with mainly level and gentle slopes which are not limiting.

Geology And Soils

31. The underlying geology of the site is observed to be head, derived from Triassic Upper Marls, over gravel. The published geology map, sheet 278, is not available at present.

32. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983) as Newnham association. This is described as well-drained, reddish, coarse and fine loamy soils over gravel, locally deep. This was borne out by the current survey.

Agricultural Land Classification

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Subgrade 3a

34. The several parts of the site are all shown as Subgrade 3a with moderate limitations due to workability and droughtiness. Topsoil textures were found to be medium and heavy clay loams with no wetness limitation evident, although many auger borings proved to be impenetrable. The soil profile pit showed only a minor droughtiness limitation, ALC grade 2, on the basis of stone contents up to 65% below 65 cm assessed by seiving. However, the content and distribution of the river terrace gravel is known to be highly variable and on the basis of stone contents observed where possible and the depths to impenetrable gravel layers at various points around the site, it is considered that where not limited to Subgrade 3a by workability with heavy clay loam topsoil, a moderate droughtiness limitation, also leading to Subgrade 3a, is likely to be found, particularly as the assessment at the soil profile pit showed the moisture balance to be at the lower end of the range permitted for grade 2.

35. Landcover at the time of survey was mainly maize for cattle silage and grass for grazing.

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ADAS Bristol
30 August 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 (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.

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
Williton	Pit 1 (ASP 1/2)	1° S	PGR	Av Rainfall: 818 mm ATO: 1546 day °C	River gravel over MMG
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 178 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
29.96	13.8.96	ST 0855 4137	PB		PB 392

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	HZCL	05YR54	1%HR (VIS)	0	0	-	-	-	-	MF,VF	-	Clear smooth
2	33	ZC	05YR64	4%VR(VIS)	FDFO,G 75YR58, 74	F	MC, FSAB	Fm	M	P	CF,VF	-	Clear wavy
3	46	ZC	75YR64	8%HR(VIS)	CDFO,G 7.5YR58, 73	C	WC, FSAB	Fm	P	P	CF,VF	-	Grad smooth
4	78	HZCL	5YR64	2%>2cm 18%<2cm 20%HR(S+D)	CDFO 10YR58	F	Too stony	Fr	(M)	G	CVF	-	Grad smooth
5	100+	HZCL	5YR63	18%<2cm 18%HR(S+D)	MDFOG 75YR66, 73	F	Too stony	Fr	(M)	P	FVF	-	

Profile Gleyed From: 33 cm

Depth to Slowly Permeable Horizon: -

Wetness Class: II

Wetness Grade: 3b

Available Water Wheat: 130 mm

Potatoes: 103 mm

Moisture Deficit Wheat: 102 mm

Potatoes: 94 mm

Moisture Balance Wheat: +28 mm

Potatoes: +9 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): We

Remarks: PSD TS to 25 cm shows ZC