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Test Valley Local Plan Review
Site 50 Andover Down
Agricultural Land Classification
Semi detailed Survey

ALC Map and Report
October 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

TEST VALLEY LOCAL PLAN REVIEW
SITE 50 ANDOVER DOWN
SEMI DETAILED SURVEY

Introduction

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of approximately 85 hectares of land situated to the east of Andover Hampshire The survey was carried out during October 1996

2 The survey was commissioned by the Ministry of Agriculture Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading in connection with MAFF s statutory input to the Test Valley Local Plan Review The results of this survey supersede any previous ALC information for this land

3 Prior to 1st April 1997 the work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS After this date the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA) Reading The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988) A description of the ALC grades and subgrades is given in Appendix I

4 At the time of survey some of the area had been ploughed some was covered by stubble and some was in permanent grazing The areas shown as Other Land consist of residential dwellings tracks roads farm buildings a caravan park and woodland The agricultural land not surveyed comprises land for which details of ownership and/or tenancy were unavailable at the time of survey thus preventing access onto the land

Summary

5 The findings of the survey are shown on the enclosed ALC map The map has been drawn at a scale of 1 10 000 It is accurate at this scale but any enlargement would be misleading

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 overleaf

7 The fieldwork was conducted at an average density of 1 boring every 1 5 hectares of agricultural land A total of 41 borings and 5 soil pits were described

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	/ Total site area	/ Surveyed Area
2	3 1	3 7	5 1
3a	53 9	63 7	88 5
3b	3)	4 6	6 4
Other land	13 7	16 2	
Not Surveyed	10 0	11 8	
Total surveyed area	60 9		100 0
Total site area	84 6	100 0	

8 The land on this site has been classified as Grade 2 Subgrade 3a and Subgrade 3b The Grade 2 land comprises soils which have silty clay loam topsoils over clay subsoils overlying chalk These clay with flints soils are stony increasingly so with depth The main limitation is soil droughtiness and/or workability

9 Subgrade 3a land occurs across most of the site where silty clay loam topsoils overlie chalk at shallow depth The main limitation is soil droughtiness due to shallow soil depth and restricted rooting into the chalk A small area of Subgrade 3b land is mapped where soils are very shallow over chalk In addition Subgrade 3b is mapped where gradients are sufficient to cause a limitation to land utilisation

Factors Influencing ALC Grade

Climate

10 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics

11 The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met Office 1989)

Table 2 Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 390 465	SU 395 466
Altitude	m AOD	90	117
Accumulated Temperature	d iy C (Jan June)	1440	1409
Average Annual Rainfall	mm	759	768
Field Capacity Days	d iys	166	167
Moisture Deficit Wheat	mm	106	102
Moisture Deficit Potatoes	mm	97	93

12 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

13 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO January to June) as a measure of the relative warmth of a locality

14 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation (Climatic Grade 1) However climatic factors do interact with soil properties to influence soil wetness and droughtiness At this locality the climate is relatively warm and moist in regional terms such that the risk of soil droughtiness will be reduced

15 Local climatic factors such as frost risk and exposure are not thought to adversely affect agricultural land use on this site

Site

16 The land on this site ranges from 93m AOD along the south western boundary to 117m AOD in the north The land slopes gently from north east to south west Micro relief does not affect agricultural land quality across the site However a small area of land along the northern site boundary is restricted by steep slopes in the range 7 10 ° Such gradients will affect the safe and efficient use of farm machinery

17 Flooding does not appear to be limiting on this site

Geology and soils

18 The relevant geological sheet for the area (BGS 1975) shows all of the site to be underlain by Cretaceous solid deposits of Upper Chalk

19 The most recently published soils information for this area (SSEW 1983) maps the Andover 1 soil association across most of the northern and western parts of the site with soils of the Carstens association shown across the southern eastern part of the site Andover 1 soils are derived from deposits of chalk and are described as Shallow well drained calcareous silty soils over chalk (SSEW 1983) Carstens soils are developed over drift deposits of clay with flints and are described as Well drained fine silty over clayey clayey and fine silty soils often very flinty (SSEW 1983)

20 Detailed field examination of the soils on the site broadly confirms the presence of shallow chalky soils across much of the site with a localised area of heavier more flinty soils towards the eastern boundary

Agricultural Land Classification

21 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1 page 2

22 The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix III

Grade 2

23 Very good quality land has been mapped in two small units towards the south east of the site The land is limited to a minor extent by soil droughtiness and/or soil workability

24 Soils within these mapping units were found to comprise calcareous medium or more usually heavy silty clay loam topsoils which may contain up to 5% total flints Subsoils commonly comprise similarly textured upper subsoils over clay or pass directly to clay These profiles are only very slightly stony in the upper horizons containing a maximum of 5% flints but become more stony in the lower subsoil containing up to 40% total flints Many of the observations were impenetrable to the soil auger at depths below 45cm but soil pit 2 (see Appendix III) proved the existence of a rootable soil resource to at least 120cm These soils are well drained wetness class I (see Appendix II) but where topsoils comprise heavy silty clay loam are restricted by slight soil workability since such topsoil textures will limit the number of days when the soil is in a suitable condition to cultivate or graze

25 The land assigned to Grade 2 is also affected by minor droughtiness The soil characteristics described in para 24 above combine with the prevailing climatic conditions to restrict the amount of water in the profile which will be available to plants Moisture balance calculations indicate that there is insufficient soil moisture to meet the demands of a growing crop throughout the growing season As a result the yield potential may be reduced such that land cannot be classified higher than ALC Grade 2

Subgrade 3a

26 Good quality land has been mapped across the majority of the site Soils within this unit are affected by soil droughtiness restrictions

27 Profiles comprise calcareous medium silty clay loam topsoils which may contain up to 8% total flints by volume (2 4% of which are > 2 cm in size) along with up to 10% chalk fragments These directly overlie chalk bedrock in the subsoil or occasionally pass through a thin upper subsoil of silty clay loam containing between 20 and 80% chalk Soil pits 1 3 4 and 5 (see Appendix III) found that the chalk substrate was rootable to a depth of 60 76 cm For the purposes of calculating soil moisture balances an average depth of 70 cm was used Given the local climatic regime such profile characteristics equate to a land classification of Subgrade 3a on the basis of soil droughtiness The soil moisture which is available for uptake by crops may not be sufficient throughout the growing season such that yield potential may be adversely affected

Subgrade 3b

28 Localised parts of the site are classified as moderate quality agricultural land At the extreme south western end of the site soils are very shallow over the chalk substrate such that rooting is severely restricted and the degree of soil droughtiness is more severe than land assigned to Subgrade 3a Typically only 25 30 cm of medium silty clay loam topsoil directly overlies the chalk Profile available water will be severely restricted in such profiles and yield potential will be depressed as a result

29 Towards the centre of the site land quality is restricted to Subgrade 3b due to steep gradients associated with a small valley feature Gradients in the range 8 10 were recorded using an optical reading clinometer These will restrict the safe and efficient operation of farm machinery

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ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No 283 Andover* BGS London

Ministry of Agriculture Fisheries And Food (1988) *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* MAFF London

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

Soil Survey of England and Wales (1983) *Sheet 6 Soils of South East England* SSEW Harpenden

Soil Survey of England and Wales (1984) *Soils and their Use in South East England Bulletin No 15* SSEW Harpenden

APPENDIX I

DESCRIPTION OF THE 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 includes 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 or horticultural crops can usually be grown but on some land of this 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 land

Grade 3 Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops the timing and type of cultivation harvesting or the level of yield When 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 that 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 the 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 moist 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 severe limitations that restricts use to permanent pasture or rough grazing except for occasional pioneer forage crops

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile Six soil wetness classes are identified and are defined in the table below

Wetness Class	Duration of waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years [2]
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 only wet within 40 cm depth for 30 days in most years
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 present 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 90 days in most years
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer present within 80 cm depth it is wet within 40 cm depth for 91 210 days in most years
V	The soil profile is wet within 40 cm depth for 211 335 days in most years
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* (MAFF 1988)

[1] The number of days is not necessarily a continuous period
[2] In most years is defined as more than 10 out of 20 years

APPENDIX III

SOIL DATA

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database This uses notations and abbreviations as set out below

Boring Header Information

1 **GRID REF** national 100 km grid square and 8 figure grid reference

2 **USE** Land use at the time of survey The following abbreviations are used

ARA	Arable	**WHT**	Wheat	**BAR**	Barley
CER	Cereals	**OAT**	Oats	**MZE**	Maize
OSR	Oilseed rape	**BEN**	Field beans	**BRA**	Brassicae
POT	Potatoes	**SBT**	Sugar beet	**FCD**	Fodder crops
LIN	Linseed	**FRT**	Soft and top fruit	**FLW**	Fallow
PGR	Permanent pasture	**LEY**	Ley grass	**RGR**	Rough grazing
SCR	Scrub	**CFW**	Coniferous woodland	**OTH**	Other
DCW	Deciduous woodland	**BOG**	Bog or marsh	**SAS**	Set Aside
HTH	Heathland	**HRT**	Horticultural crops	**PLO**	Ploughed

3 **GRDNT** Gradient as estimated or measured by a hand held optical clinometer

4 **GLEY/SPL** Depth in centimetres (cm) to gleying and/or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

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

7 **DRT** Best grade according to soil droughtiness

8 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				

9 **LIMIT** The main limitation to land quality The following abbreviations are used

OC	Overall Climate	**AE**	Aspect	**ST**	Topsoil Stoniness
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
EX	Exposure				

Soil Pits and Auger Borings

1 **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)

2 **MOTTLE COL** Mottle colour using Munsell notation

3 **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 % +

4 **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

5 **PED COL** Ped face colour using Munsell notation

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

7 **STONE LITH** Stone Lithology one of the following is used

HR	all hard rocks and stones	**FSST**	soft, fine grained sandstone
ZR	soft, argillaceous or silty rocks	**CH**	chalk
MSST	soft, medium grained sandstone	**GS**	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock	**GH**	gravel with non porous (hard) stones

Stone contents (>2cm >6cm and total) are given in percentages (by volume)

8 **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	

9 **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

10 **SUBS STR** Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** good **M** moderate **P** poor

11 **POR** Soil porosity If a soil horizon has less than 0 5% biopores >0 5 mm a Y will appear in this column

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

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

14 **CALC** If the soil horizon is calcareous a Y will appear in this column

15 Other notations

APW available water capacity (in mm) adjusted for wheat
APP available water capacity (in mm) adjusted for potatoes
MBW moisture balance wheat
MBP moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP SITE 50 Pit Numbe 1P

Grid Reference SU39704670 Average A nual Rainfall 759 mm
Accumulated Tempe ature 1440 degree days
Field Capacity Level 166 d ys
Land Use
Slope nd Aspect 01 degrees E

HORIZON		TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0	30	MZCL	10YR43 00	2	8	HR					Y
30	68	CH	10YR81 00	0	0					M	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3A APW 87 mm MBW 19 mm
APP 93 mm MBP -4 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP SITE 50 Pit Numbe 2P

G id Reference SU39904650 Average A nu l R infall 759 mm
Accumulated Tempe ture 1440 degree days
Fi ld Capacity Level 166 days
L nd Use
Slope and Aspect 01 degrees S

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 29	MZCL	10YR43 00	2	5	HR					
29 42	HZCL	75YR43 00	5	32	HR	F	MDCSAB	FM	M	
42 120	C	75YR56 00	8	40	HR			FM	M	

Wetness G ade 1 Wetnes Clas I
Gleying cm
SPL No SPL

Drought G ade 3A APW 111mm MBW 4 mm
APP 96 mm MBP 1 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP SITE 50 Pit Number 3P

G id R ference SU38804610 Ave ge A nual Rainfall 759 mm
Accumulated Temperature 1440 degree days
Field Capacity Level 166 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 27	MZCL	10YR43 00	4		8	HR					Y
27 43	MZCL	10YR44 00	5		25	CH				M	Y
43- 60	CH	10YR81 00	0		0					M	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3B APW 79 mm MBW 27 mm
APP 82 mm MBP 15 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP SITE 50 Pit Number 4P

Grid Reference SU38804610 Ave age A nual Rai fall 759 mm
Accumul ted Temperature 1440 degree days
F eld Capacity Level 166 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MZCL	10YR43 00	4	8	HR					Y
27 65	MZCL	10YR44 00	5	25	CH				M	Y
65- 73	CH	10YR81 00	0	0					M	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3A APW 100mm MBW 6 mm
APP 108mm MBP 11 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP SITE 50 Pit Numbe 5P

G id Reference SU39404640 Ave age Annual R i f ll 759 mm
Accumulated Temperature 1440 degree days
Field Capacity Level 166 days
Land Use
Slope nd Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 26	MZCL	10YR43 00	4	6	HR					Y
26 76	CH	10YR81 00	0	10	HR				M	Y

Wetness G ade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought G ade 3B APW 85 mm MBW 21 mm
APP 87 mm MBP 10 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Droughtiness

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	PED GLEY	STONES 2	STONES 6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1P	0 30	mzcl	10YR43 00						2	0	HR	8						Y	5% CHALK
	30 68	ch	10YR81 00						0	0		0		M				Y	ROOTS TO 68
2P	0-29	mzcl	10YR43 00						2	0	HR	5							
	29-42	hzcl	75YR43 00		F		00MN00 00		5	0	HR	32	MDCSAB	FM	M				TENDING TO WEAK
	42 120	c	75YR56 00				00MN00 00		8	0	HR	40		FM	M				
3P	0 27	mzcl	10YR43 00						4	0	HR	8						Y	1% CHALK
	27-43	mzcl	10YR44 00						5	0	CH	25		M				Y	10% FLINTS
	43 60	ch	10YR81 00						0	0		0		M				Y	ROOTS TO 60
4P	0 27	mzcl	10YR43 00						4	0	HR	8						Y	+1% CHALK
	27 65	mzcl	10YR44 00						5	0	CH	25		M				Y	+10% FLINTS
	65-73	ch	10YR81 00						0	0		0		M				Y	ROOTS TO 73
5P	0 26	mzcl	10YR43 00						4	0	HR	6						Y	+10% CHALK
	26 76	ch	10YR81 00						0	0	HR	10		M				Y	ROOTS TO 76
7	0 32	mzcl	10YR43 00						0	0	HR	2						Y	
	32 100	mzcl	10YR52 00						0	0	CH	5		M				Y	2% FLINTS
	100 120	ch	10YR81 00						0	0		0		M				Y	
8	0 30	mzcl	10YR42 43						0	0	CH	5						Y	+2% FLINTS
	30 37	mzcl	10YR54 00						0	0	CH	8		M				Y	IMP FLINTS
11	0 29	mzcl	10YR42 52						0	0	CH	5						Y	2% FLINTS
	29 70	ch	10YR81 00						0	0		0		M				Y	
13	0 32	mzcl	10YR42 00						3	0	HR	5						Y	
	32 70	ch	10YR81 00						0	0		0		M				Y	
17	0 28	mzcl	10YR42 52						0	0	CH	10						Y	+2% FLINTS
	28-65	ch	10YR81 00						0	0		0		M				Y	
19	0 28	mzcl	10YR43 00						3	0	HR	5						Y	
	28 70	ch	10YR81 00						0	0		0		M				Y	
20	0 26	mzcl	10YR42 43						0	0	CH	5						Y	+2% FLINTS
	26 70	ch	10YR81 00						0	0		0		M				Y	
21	0 28	mzcl	10YR33 00						1	0	HR	2						Y	
	28-35	mzcl	10YR43 00						0	0	HR	2		M				Y	
	35-60	hzcl	10YR44 00						0	0	HR	15		M				Y	IMP 60 FLINTS
24	0 29	mzcl	10YR42 00						0	0	CH	5						Y	+2% FLINTS
	29 70	ch	10YR81 00						0	0		0		M				Y	
25	0 30	mzcl	10YR42 00						0	0	CH	5						Y	+2% FLINTS
	30 70	ch	10YR81 00						0	0		0		M				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES- COL	ABUN	CONT	PED COL	GLEY	STONES 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
27	0 28	hzcl	10YR42 43						0	0	CH	5					Y		+2% FLINTS
	28-70	ch	10YR81 00						0	0		0		M			Y		
29	0 28	hzcl	10YR43 00						0	0	HR	5					Y		
	28 38	c	75YR46 00	75YR58 00	C		00MN00	00 S	0	0	HR	5		M			Y		
	38 50	c	10YR64 00	75YR58 00	C		00MN00	00 S	0	0	CH	20		M			Y		5% FLINTS
	50 55	c	10YR74 00						0	0	CH	80		M			Y		
	55 80	ch	10YR81 00						0	0		0		M			Y		
34	0 30	mzcl	10YR42 00						2	0	HR	5					Y		5% CHALK
	30 70	ch	10YR81 00						0	0		0		M			Y		
36	0 28	mzcl	10YR42 00						0	0	CH	10					Y		2% FLINTS
	28 70	ch	10YR81 00						0	0		0		M			Y		
38	0 35	hzcl	10YR43 00						2	0	HR	5					Y		
	35-45	c	75YR46 00	75YR58 00	C			S	0	0	HR	2		M			Y		
	45-52	c	75YR56 00	75YR58 00	C			S	0	0	CH	30		M			Y		
	52 80	ch	10YR81 00						0	0		0		M			Y		
40A	0 28	hzcl	10YR34 00						0	0	HR	3					Y		
	28 40	hzcl	10YR44 00						0	0	HR	5		M			Y		
	40 45	c	10YR44 00						0	0	HR	5		M			Y		IMP FLINTS
46	0 30	mzcl	10YR43 00						1	0	HR	3					Y		10% CHALK
	30 70	ch	10YR81 00						0	0		0		M			Y		
48	0 30	mzcl	10YR43 00						0	0	HR	8					Y		+3% CHALK
	30 40	mzcl	10YR43 00						0	0	HR	5		M			Y		+6% CHALK
	40 90	c	10YR56 00	75YR58 00	C		00MN00	S	0	0	CH	2		M			Y		
	90 100	ch	10YR81 56						0	0		0		M			Y		
51	0 27	mzcl	10YR43						2	0	HR	5					Y		5% CHALK
	27 70	ch	10YR81						0	0		0		M			Y		
54	0 25	mzcl	10YR43						0	0	CH	10					Y		
	25-28	mzcl	10YR43						0	0	CH	25		M			Y		
	28 70	ch	10YR81						0	0		0		M			Y		
56	0 28	mzcl	10YR43						0	0	CH	10					Y		
	28 34	mzcl	10YR43						0	0	CH	25		M			Y		
	34 70	ch	10YR81						0	0		0		M			Y		
58	0 27	mzcl	10YR43 53						1	0	CH	10					Y		3% FLINTS
	27 70	ch	10YR81						0	0	HR	2		M			Y		
60	0 28	mzcl	10YR43						1	0	HR	5					Y		10% CHALK
	28 35	mzcl	10YR54 81						0	0	CH	60		M			Y		
	35-70	ch	10YR81						0	0	HR	2		M			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES COL	ABUN	CONT	PED COL	GLEY	STONES 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
65	0 29	hzcl	10YR43						3	1	HR	5					Y		
	29 60	c	10YR44	75YR56	00	C	00MN00	00 S	0	0	HR	2		M			Y		IMP FLINTS
67	0 28	mzcl	10YR43						0	0	CH	10					Y		
	28 70	ch	10YR81						0	0		0		M			Y		
69	0 28	hzcl	10YR44						2	0	HR	8							
	28-55	c	75YR54	44 75YR58	00	C	00MN00	00 S	0	0	HR	5		M					
	55 90	c	75YR54	53 75YR58	00	C	00MN00	00 Y	0	0	HR	5		M					IMP FLINTS
71	0 28	mzcl	10YR43	44					2	0	CH	10					Y		+3% FLINTS
	28 35	ch	10YR81	64					0	0	HR	2		M			Y		
	35-70	ch	10YR81						0	0	HR	2		M			Y		
73	0 30	mzcl	10YR43	53					1	0	HR	6					Y		10% CHALK
	30 70	ch	10YR81						0	0	HR	2		M			Y		
75	0 30	mzcl	10YR43	53					2	0	CH	10					Y		3% FLINTS
	30 70	ch	10YR81						0	0	HR	2		M			Y		
76	0 28	mzcl	10YR32	00					2	0	HR	2					Y		
	28 45	mzcl	10YR34	00					0	0	HR	15		M			Y		IMP FLINTS
78	0 26	mzcl	10YR43						0	0	CH	10					Y		
	26 70	ch	10YR81						0	0		0		M			Y		
80	0 26	mzcl	10YR43						1	0	CH	15					Y		
	26 70	ch	10YR81						0	0		0		M			Y		
82	0 35	mzcl	10YR43						0	0	CH	10					Y		
	35 70	ch	10YR81						0	0		0		M			Y		
83	0 27	hzcl	10YR43	44					2	0	HR	6							
	27 35	hzcl	10YR54	64					0	0	CH	20		M			Y		
	35-40	ch	10YR81	64					0	0	HR	2		M			Y		
	40 70	ch	10YR81						0	0	HR	2		M			Y		
86	0 26	mzcl	10YR43						0	0	CH	15					Y		
	26 70	ch	10YR81						0	0		0		M			Y		
040	0 30	HZCL	10YR43						1	0	HR	2					Y		
	30 50	C	10YR44						0	0	HR	25		M			Y		IMP FLINTS
050	0 25	MZCL	10YR33						2	0	HR	5					Y		
	25-35	MZCL	10YR44						0	0	CH	30		M			Y		
	35-70	CH	10YR81						0	0	HR	2		M			Y		
052	0 25	HZCL	10YR34						3	1	HR	5							
	25-60	C	75YR46						0	0	HR	25		M					
	60 70	C	75YR56			C	00MN00	S	0	0	HR	3		M					
	70-85	C	75YR46	56		C	00MN00	S	0	0	HR	3		M					
	85 115	CH	10YR81						0	0	HR	2		M			Y		

				MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
062	0 25	MZCL	10YR33						4	1	HR	6					Y	
	25-70	CH	10YR81						0	0	HR	2		M			Y	
064	0 28	MZCL	10YR42						1	0	HR	1					Y	5% CHALK
	28 33	MZCL	10YR43 44						0	0	HR	1		M			Y	+20% CHALK
	33-70	CH	10YR81						0	0	HR	2		M			Y	
077	0 30	MZCL	10YR33						2	0	HR	2					Y	
	30 45	MZCL	10YR33 44						0	0	HR	2		M			Y	25% CHALK
	45 75	CH	10YR81						0	0	HR	2		M			Y	

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1P	SU39704670	STB	E	01			1	1	87	19	93	-4	3A				DR	3A	AT ASP 19
2P	SU39904650	STB	S	01			1	1	111	4	96	1	3A				DR	3A	ALMOST 2
3P	SU38804610	STB					1	1	79	27	82	15	3B				DR	3B	
4P	SU38804610	STB					1	1	100	6	108	11	3A				DR	3A	
5P	SU39404640	STB					1	1	85	21	87	10	3B				DR	3B	ALMOST 3A
7	SU39704690	STB	N	03			1	1	151	45	122	25	1					1	
8	SU39804690	STB	NW	03			1	1	67	39	67	30	3B				DR	3A	SEE 1P
11	SU39604680	STB	N	04			1	1	82	24	85	12	3B				DR	3A	SEE 1P
13	SU39804680	STB	NW	02			1	1	90	16	96	1	3A				DR	3A	
17	SU39504670	STB	N	03			1	1	80	26	83	14	3B				DR	3A	SEE 1P
19	SU39704670	STB	NW	01			1	1	87	19	93	-4	3A				DR	3A	
20	SU39804670	STB	N	02			1	1	86	20	92	5	3A				DR	3A	
21	SU39904670	STB	S	02			1	1	94	12	100	3	3A				DR	2	SEE 2P
24	SU39304660	STB	N	03			1	1	89	17	95	2	3A				DR	3A	SEE 1P
25	SU39404660	STB	N	03			1	1	90	16	96	1	3A				DR	3A	SEE 1P
27	SU39604660	STB	N	02			1	2	88	18	94	3	3A				DR	3A	SEE 1P
29	SU39804660	STB	S	02			1	2	105	1	104	7	3A				DR	3A	SL GLEY 28
34	SU39304650	STB	NW	03			1	1	88	18	94	3	3A				DR	3A	SEE 1P
36	SU39504650	PGR	S	01			1	1	87	19	93	-4	3A				DR	3A	SEE 1P
38	SU39704650	STB	SE	02			1	2	107	1	107	10	3A				DR	3A	SL GLEY 35
40	SU39904650	STU					1	2	0	106	0	97	4				WD	2	SEE 2P
40A	SU39954652	STB	S	01			1	2	79	27	79	18	3B				WD	2	SEE 2P
46	SU39404640	STB					1	1	88	18	94	3	3A				DR	3A	SEE 5P
48	SU39604640	PGR	S	02			1	1	124	18	117	20	2				DR	2	SL GLEY 40
50	SU39804640	GRA	S	2			1	1	89	15	95	0	3A				DR	3A	
51	SU39904640	STU	SW	01			1	1	86	20	92	5	3A				DR	3A	
52	SU40004640	PLO					1	2	122	18	104	9	2				WD	2	
54	SU38904630	CER					1	1	81	25	85	12	3B				DR	3B	POSS 3A SEE 5
56	SU39104630	ARA	NW	05			1	1	89	17	95	2	3A				DR	3A	
58	SU39304630	STB	E	01			1	1	76	30	78	19	3B				DR	3B	POSS 3A SEE 5
60	SU39504630	STB	S	01			1	1	83	23	88	9	3B				DR	3B	POSS 3A SEE 5
62	SU39704630	STU	SE	1			1	1	83	21	89	6	3B				DR	3B	POSS 3A SEE 5
64	SU39904630	STU	W	2			1	1	90	14	95	0	3A				DR	3A	
65	SU40004630	PLO	W	02	029		1	2	93	13	101	4	3A				WD	2	SEE 2P
67	SU38804620	CER					1	1	82	24	87	10	3B				DR	3B	POSS 3A SEE 5
69	SU39004620	PLO	W	03	055		2	2	103	3	101	4	3A				WD	2	SEE 2P
71	SU39204620	PLO	S	02			1	1	78	28	80	17	3B				DR	3B	
73	SU39404620	STB	SE	02			1	1	80	26	83	14	3B				DR	3B	POSS 3A SEE 5
75	SU39604620	STB	S	02			1	1	81	25	84	13	3B				DR	3B	POSS 3A SEE 5
76	SU39854620	STU					1	1	99	7	101	4	2				DR	2	SEE 2P
77	SU39804620	STU	E	1			1	1	100	4	103	8	3A				DR	3A	
78	SU38604610	CER					1	1	79	27	82	15	3B				DR	3B	

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
80	SU38804610	ARA	SW	01			1	1	78	28	81	16	3B				DR	3A	SEE 4P
82	SU39004610	ARA	SW	02			1	1	92	14	98	1	3A				DR	3A	
83	SU39104610	PLO	S	02			1	2	86	20	90	7	3A				DR	3A	
86	SU38704600	CER					1	1	78	28	81	16	3B				DR	3B	