152-97-96

A1
TEST VALLEY LOCAL PLAN REVIEW
Site 53 Land west of Cowdown
Andover Hampshire
Agricultural Land Classification
Semi Detailed Survey
November 1996

Ministry of
Agriculture
Fisheries
and Food

A1

TEST VALLEY LOCAL PLAN REVIEW

Site 53 Land west of Cowdown
Andover Hampshire
Agricultural Land Classification
Semi Detailed Survey
November 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

ADAS Reference 1512/097/96
MAFF Reference EL 15/00292
LUPU Commission 02467

AGRICULTURAL LAND CLASSIFICATION REPORT

TEST VALLEY LOCAL PLAN REVIEW
SITE 53 LAND WEST OF COWDOWN ANDOVER, HAMPSHIRE
SEMI DETAILED SURVEY

INTRODUCTION

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of 136 7 hectares of land located to the west of Cowdown Farm and to the south of the A303 to the south east of Andover in 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 the Test Valley Local Plan Review The results of this survey supersede any previous ALC information for this land

3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS 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 all of the agricultural land on this site was in arable use (cereal stubble ploughed land and field beans) The areas shown as Other Land comprise woodland scrub and an underpass

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 below

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	/ site area	/ surveyed area
2	5 6	4 1	4 2
3a	99 0	72 4	74 2
3b	28 9	21 2	21 6
Other Land	3 2	2 3	
Total surveyed area	133 5		100 0
Total site area	136 7	100 0	

7 The fieldwork was conducted at an average density of slightly more than one boring every two hectares A total of 72 borings and nine soil pits were described

8 The majority of land on this site has been classified as best and most versatile Grade 2 and Subgrade 3a Grade 2 (very good quality) land occurs in the base of a dry valley in the east of the site All of this land is limited by a minor soil droughtiness limitation, arising from soils developed in deep chalky flinty drift which overlies Upper Chalk at depth The topsoils in this mapping unit comprise medium silty clay loams and heavy silty clay loams Where the latter occur the land is also subject to slight soil workability limitations which will incur minor restrictions on the flexibility of cropping stocking and cultivations In addition, discrete areas have topsoils which contain fractionally more large flints (between 5 and 10% of flints larger than 2 cm by volume) than the remaining areas The resulting topsoil stone content limitation will act to slightly impede cultivations harvesting and crop growth

9 Subgrade 3a (good quality) land tends to occur on the more gently undulating areas of the site This land is limited by soil droughtiness Topsoils comprise medium and heavy silty clay loams which across parts of the land directly overlie Upper Chalk Elsewhere profiles include an upper subsoil comprised of silty clay loam or clay before passing into the chalk at relatively shallow or moderate depths The underlying chalk means that all of these profiles are well drained The combination of soil characteristics (textures stone contents and restricted rooting into the chalk) and the local climate leads to a restriction in water availability for plants Consequently Subgrade 3a is appropriate on the basis of soil droughtiness Isolated areas classified as Subgrade 3a are limited by soil wetness caused by imperfectly drained profiles with medium textured topsoils

10 Subgrade 3b (moderate quality) land is generally mapped on the slightly higher flatter land on the site Here the Upper Chalk is capped by deep drift deposits of clay with flints Heavy silty clay loam and clay topsoils overlie clay subsoils which either extend to depth or overlie chalk deep within the profile These profiles are either poorly or imperfectly drained The interaction between this soil drainage status and the heavy topsoils with the prevailing climate acts to incur soil wetness and workability limitations This land will be subject to significant restrictions on the flexibility of cropping stocking and cultivations A small area south of the A303 west of the path, is thought to have been disturbed by the building of the trunk road Soils in this area are likely to be compacted and as such will suffer from both soil wetness and droughtiness restrictions Subgrade 3b land has also been mapped in the south west of the site and abutting the Grade 2 land where gradients in excess of 7° were measured Such slopes will act to restrict potential land utilisation, since the range of farm machinery that can be operated efficiently or safely is reduced

Factors Influencing ALC Grade

Climate

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

12 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)

13 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

Table 2 Climatic and altitude data

Factor	Units	Values	Values
Grid reference	N/A	SU 374 447	SU 373 436
Altitude	m, AOD	110	80
Accumulated Temperature	day°C (Jan June)	1418	1453
Average Annual Rainfall	mm	780	770
Field Capacity Days	days	167	166
Moisture Deficit, Wheat	mm	101	105
Moisture Deficit, Potatoes	mm	91	97

14 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

15 The combination of rainfall and accumulated temperature at this site mean that there is no overall climatic limitation However climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations The climatic factors at this locality are average for the south east of England No local climatic factors such as exposure or frost risk, are believed to adversely affect the land quality on the site This site is climatically Grade 1

Site

16 The topography on this site is typical of the Hampshire Chalklands Altitudes on the site range from approximately 80 m to 120 m AOD resulting in gently undulating land The highest land occurs as flatter areas in the northern central and northern east parts of the site Dry valleys in the east and south west of the site form the lower lying land on the site Across much of the site the land is gently sloping and falls through gradients of 1 6° Relatively discrete areas in the south west of the site and to the immediate north of Cowdown Farmhouse have gradients in excess of 7° These steeper slopes limit the land quality to Subgrade 3b

Geology and soils

17 The published geological information (BGS 1974) shows the entire site to be underlain by Upper Chalk (soft white chalk with many flint nodules)

18 The published soils information (SSEW 1983) shows two soil types across the site The western half of the site is shown to comprise soils of the Carstens Association These soils are described as Well drained fine silty over clayey clayey and fine silty soils often very flinty (SSEW 1983) Soils of the Andover 1 Association are mapped across the eastern half of the site These soils are described as Shallow well drained calcareous silty soils over chalk on slopes and crests Deep calcareous and non calcareous fine silty soils in valley bottoms Striped soil patterns locally (SSEW 1983)

Agricultural Land Classification

19 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 1

20 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 page 9

Grade 2

21 Grade 2 very good quality land occurs in the base of a dry valley in the east of the site All of this land is limited by a minor soil droughtiness limitation, arising from soils developed in deep chalky flinty drift which overlies Upper Chalk at depth Topsoils generally comprise calcareous medium and heavy silty clay loams These typically overlie similarly textured or brownish clay subsoils with some profiles passing into chalk at depth The profiles which are represented by Pit 5 (see Appendix III) have moderately structured subsoils Topsoils are slightly stony containing 2 6% flints larger than 2 cm and 5 10% total flints Upper subsoils tend to be slightly or moderately stony containing 10 25% total flints Lower subsoils are typically moderately stony containing 25 35% chalk fragments All of these profiles are well drained Wetness Class I (see Appendix II) The interaction between these soil characteristics and the prevailing climate slightly reduces the amount of profile available water for plants This is likely to have the effect of restricting the level and consistency of crop yields to the extent that Grade 2 is appropriate

22 Where heavy silty clay loam topsoils occur the land is also subject to slight soil workability limitations Such limitations will incur minor restrictions on the flexibility of cropping stocking and cultivations In addition discrete areas have topsoils which contain fractionally more large flints (about 6% flints larger than 2 cm by volume) than the remaining areas The resulting topsoil stone content limitation will act to slightly impede cultivations harvesting and crop growth

Subgrade 3a

23 Subgrade 3a, good quality land tends to occur on the more gently undulating areas of the site This land is limited by soil droughtiness Topsoils comprise calcareous medium and heavy silty clay loams which, across parts of the land directly overlie Upper Chalk Elsewhere profiles include an upper subsoil comprised of silty clay loam or clay before passing into the chalk at relatively shallow or moderate depths (approximately 35 to 55 cm) The underlying chalk means that all of these profiles are well drained These profiles are represented by Pits 2 3 4 7 and 8 (see Appendix III) Roots were observed to depths of between 70 and 90 cm depth The combination of soil characteristics and the local climate

leads to a restriction in moisture availability for plants which may result in the soil available water being insufficient to fully meet crop needs in some years Consequently Subgrade 3a is appropriate on the basis of soil droughtiness Isolated areas classified as Subgrade 3a are limited by soil wetness caused by imperfectly drained profiles with medium textured topsoils

Subgrade 3b

24 Subgrade 3b moderate quality land is generally mapped on the slightly higher flatter land on the site Here the Upper Chalk is capped by deep drift deposits of clay with flints Heavy silty clay loam and clay topsoils overlie clay subsoils which either extend to depth or overlie chalk deep within the profile Topsoils tend to be slightly stony containing 2 6% flints larger than 2 cm and 6 18% total flints Subsoils are similarly stony Some profiles proved impenetrable to an auger at about 40 cm, and so Pits 1 6 and 9 (see Appendix III) were dug to assess the lower subsoils Subsoils are typically poorly structured and slowly permeable resulting in soil drainage problems Where profiles are slightly gleyed the profiles are assessed as imperfectly drained (Wetness Class III) where profiles are gleyed they are poorly drained (Wetness Class IV) The interaction between this soil drainage status and the heavy topsoils with the prevailing climate acts to incur soil wetness and workability limitations This land will be subject to significant restrictions on the flexibility of cropping stocking and cultivations

25 A small area south of the A303 west of the path, is thought to have been disturbed by the building of the trunk road Soils in this area are likely to be compacted and as such will suffer from both soil wetness and droughtiness restrictions Subgrade 3b land has also been mapped in the south west of the site and abutting the Grade 2 land where gradients in excess of 7° were measured Such slopes will act to restrict potential land utilisation, since the range of farm machinery that can be operated efficiently or safely is reduced

Gillian Iles
Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1974) *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

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

Soil Survey of England and Wales (1983) *Sheet 6 Soils of South East England, 1 250 000*
SSEW Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
SSEW Harpenden

APPENDIX I

DESCRIPTIONS 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 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 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 which restrict 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	
DCW	Deciduous Wood				
HTH	Heathland	**BOG**	Bog or Marsh	**FLW**	Fallow
PLO	Ploughed	**SAS**	Set aside	**OTH**	Other
HRT	Horticultural Crops				

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	**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				

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	**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 sandston	**GS**	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock		

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 appropriate 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 TVBLP SITE 53 W OF COWDN Pit Numbe 1P

Grid Reference SU37904360 Ave ge A al Rai fall 770 mm
Accumulated Tempe ature 1453 degree days
F eld Capac ty Level 166 d ys
Land Use Arable
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	C	10YR43 00	4		8	HR					
26- 38	C	10YR54 00	0		5	HR		MCAB	VM	M	
38-100	C	10YR53 00	0		5	HR	C	SCAB	VM	P	

Wetness Grade 3B Wetness Class IV
Gleying 038 cm
SPL 038 cm

Drought Grade 3A APW 107mm MBW 4 mm
APP 99 mm MBP 5 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 2P

Grid Reference SU38354400

Aver ge A nu l Rainfall 770 mm
Accumulated Temperature 1453 degree days
Field Capacity Level 166 d ys
L nd Use Ploughed
Slope and Aspect 05 degrees SW

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 18	MZCL	10YR53 00	2		16	CH					Y
18- 32	HZCL	10YR43 00	0		31	CH				M	Y
32 68	CH	10YR81 00	0		0					P	

Wetness Grade 1
Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3A
APW 83 mm MBW 20 mm
APP 88 mm MBP 6 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtine s

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 3P

G id Reference SU38104460 Average Ann al Rainfall 770 mm
Accumulated Temperature 1453 degree d ys
Field Capacity Level 166 days
Land Use
Slope nd Aspect 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 29	MZCL	10YR43 53	1	4	HR					Y
29 72	CH	10YR81 00	0	2	HR				P	Y

Wetness G ade 1 Wetness Cla s I
Gleying cm
SPL No SPL

Drought Grade 3A APW 89 mm MBW 15 mm
APP 92 mm MBP 2 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 4P

Grid Reference SU38404430

Average Annual Rainfall	770 mm
Accumulated Temperature	1453 degree days
Field Capacity Level	166 days
Land Use	Arable
Slope and Aspect	01 degrees NW

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 28	HCL	10YR43 00	6	12	HR					Y
28- 60	CH	10YR81 56	0	2	HR				P	Y
60 92	CH	10YR81 00	0	2	HR				P	Y

Wetness G ade 2

Wetness Class	I
Gleying	cm
SPL	No SPL

Drought Grade 3A

APW	95 mm	MBW	7 mm
APP	86 mm	MBP	1 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtine s

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 5P

Grid Reference SU38104440 Ave age Annual Rai fall 770 mm
Accumul ted Tempe ature 1453 degree days
Field Capacity Level 166 days
Land Use Arable
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 30	HZCL	10YR53 00	3	6	HR					
30 60	HZCL	75YR54 00	0	24	HR				M	
60 100	C	75YR54 00	0	25	HR				M	
100 110	HZCL	75YR56 00	0	33	CH				M	Y
110 120	CH	10YR81 00	0	0					P	Y

Wetness Grade 2 Wetne Clas I
Gleying cm
SPL No SPL

Drought Grade 2 APW 128mm MBW 24 mm
APP 105mm MBP 10 mm

FINAL ALC GRADE 2
MAIN LIMITATION Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 6P

Grid Reference SU37704440 Average Ann al Rai fall 770 mm
Accumulated Temperature 1453 degree days
Field Capacity Level 166 days
Land Use Field Bea s
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 23	HZCL	10YR43 00	2	6	HR					
23- 42	C	75YR54 00	0	12	HR	M	MDVCPR	VM	P	
42 75	C	75YR64 00	0	5	HR	M	MDCPR	FM	P	
75-120	C	75YR63 00	0	5	HR	M			P	

Wetness G ade 3B Wetness Class IV
Gleying 023 cm
SPL 023 cm

Drought Grade 2 APW 120mm MBW 19 mm
APP 98 mm MBP 7 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Numbe 7P

G id Reference SU37384375

Average Annual Rai fall	770 mm
Accumulated Tempe ature	1453 degree days
Field Capacity Level	166 d ys
Land Use	Cereals
Slope and Aspect	03 degrees S

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 23	MZCL	10YR53 00	1	3	HR					Y
23- 34	MZCL	75YR53 00	0	10	CH		WKCSAB	FR	M	Y
34 90	CH	10YR81 00	0	1	HR				P	Y

Wetness G de 1

Wetness Class	I
Gleying	cm
SPL	No SPL

Drought Grade 3A

APW	103mm	MBW	1 mm
APP	95 mm	MBP	0 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit N mber 8P

G id Reference SU37534400 Ave age Ann al Rai fall 770 mm
Accumulated Temperature 1453 degree days
Field Capacity Level 166 days
Land Use Ploughed
Slope and Aspect 03 degrees E

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 28	HCL	10YR43 00	9	22	HR					Y
28- 55	C	75YR54 00	0	33	HR	C	MDCSAB	FM	M	
55 80	CH	10YR81 00	0	5	HR				P	Y

Wetness Grade 2 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3A APW 90 mm MBW 12 mm
APP 84 mm MBP 9 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TVBLP SITE 53 W OF COWDN Pit Number 9P

Grid Reference SU37954395

Ave ge A al Rainfall	770 mm
Accumul ted Tempe ature	1453 degree days
Field Capacity Level	166 days
Land Use	Ploughed
Slope and Aspect	02 degrees E

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	C	10YR44 00	6	18	HR					
28- 75	C	75YR54 00	0	10	HR	C	STCAB	VM	M	
75-110	C	75YR54 00	0	40	CH	C			M	Y
110-120	CH	10YR81 00	0	2	HR				P	Y

Wetness Grade 3B

Wetnes Cl	III
Gleying	cm
SPL	028 cm

Drought G ade 2

APW	123mm	MBW	21 mm
APP	100mm	MBP	7 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS- CLASS	GRADE	-WHEAT AP	MB	POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU38404470	PLO	N	02			1	1	89	14	95	1	3A				DR	3A	Chalk 33
1P	SU37904360	ARA			038	038	4	3B	107	4	99	5	3A				WE	3B	Deep clay
2	SU37904460	STU	SE	03			1	2	90	13	96	1	3A				DR	3A	Chalk 40
2P	SU38354400	PLO	SW	05			1	1	83	20	88	6	3A				DR	3A	Ch32 Borde 3B
3	SU38104460	STB	SW	01			1	1	88	15	94	1	3A				DR	3A	Chalk 30
3P	SU38104460	STB	N	02			1	1	89	15	92	2	3A				DR	3A	Chalk 29
4	SU38304460	PLO	W	01			1	1	89	14	95	0	3A				DR	3A	Chalk 35
4P	SU38404430	ARA	NW	01			1	2	95	7	86	1	3A				DR	3A	Ch lk 28
5	SU38504460	PLO	NE	03			1	1	87	16	93	1	3A				DR	3A	Chalk 32
5P	SU38104440	ARA					1	2	128	24	105	10	2				WD	2	Chalk 110
6	SU37704450	PLO	NE	01		028	3	3B	88	13	99	8	3A				WE	3B	Sl gley28 I70
6P	SU37704440	BEN			023	023	4	3B	120	19	98	7	2				WE	3B	Deep clay
7	SU37804450	PLO	NE	04	030	030	4	3B	78	24	78	15	3B				WE	3B	Imp50 fli ty
7P	SU37384375	CER	S	03			1	1	103	1	95	0	3A				DR	3A	Ch lk 34
8	SU38004450	STU	SE	01			1	2	77	26	77	18	3B				WD	2	I45fli tysee5P
8P	SU37534400	PLO	E	03			1	2	90	12	84	9	3A				DR	3A	Sl gley 28
9	SU38204450	PLO	S	02			1	1	98	6	113	18	3A				DR	3A	Imp70 fl ty
9P	SU37954395	PLO	E	02		028	3	3B	123	21	100	7	2				WE	3B	Sl gley Qsp175
10	SU38404450	PLO	N	02			1	2	97	6	103	9	3A				DR	3A	Chalk 48
11	SU37504440	PLO	SW	02	028		2	3A	57	44	57	34	3B				DR	3B	Q distu bed
12	SU37604440	PLO			030		2	2	87	14	87	4	3A				DR	3A	Imp50 fl nty
13	SU37704440	PLO	E	01	028	028	4	3B	108	7	100	9	3A				WE	3B	Imp100 fl ty
14	SU37904440	PLO	S	04			1	2	120	18	113	20	2				WD	2	Ch lk 90
15	SU38104440	PLO	NE	04			1	1	69	35	69	26	3B				DR	2	I40fli tysee5P
16	SU38304440	PLO	NW	02			1	1	88	15	94	1	3A				DR	3A	Chalk 35
17	SU38504440	PLO	N	01			1	2	84	18	90	3	3A				DR	3A	Ch lk 27
18	SU37204430	PLO					1	1	91	9	97	7	3A				DR	3A	Chalk 33
19	SU37304430	PLO	S	02			1	1	93	7	99	9	3A				DR	3A	Chalk 40
20	SU37404430	PLO	S	02			1	1	98	3	104	13	3A				DR	3A	Chalk 48
21	SU37604430	PLO	S	02			1	2	92	9	98	6	3A				DR	3A	Chalk 40
22	SU37804430	BEN			028	038	4	3B	110	8	108	16	2				WE	3B	O pl tea
23	SU38004430	BEN	E	02			1	1	92	11	98	4	3A				DR	3A	Chalk 40
24	SU38204430	PLO	W	04		100	1	1	131	28	111	17	2				ST	2	DR Chalky c
25	SU38404430	PLO	N	02			1	2	84	18	90	3	3A				DR	3A	Chalk 35
26	SU37104420	PLO	S	02			1	2	95	5	101	11	3A				DR	3A	Chalk 42
27	SU37304420	PLO	SE	02		050	3	3A	103	2	107	15	3A				WE	3A	Sl gley50 I80
28	SU37504420	ARA	S	01			1	1	91	10	97	5	3A				DR	3A	Chalk 35
29	SU37704420	BEN	W	01	030		1	2	62	40	62	31	3B				DR	3A	Imp35 see50A
30	SU37724420	BEN	W	01			1	2	97	5	103	10	3A				DR	3A	Chalk 50
31	SU37904420	BEN	E	03			1	2	112	10	113	18	2				WD	2	Chalk68 ee8P
32	SU38104420	BEN	E	01			1	1	70	34	70	26	3B				DR	2	I40ch lky 5P
33	SU37284410	BEN					1	2	101	1	109	18	3A				DR	3A	Chalk55 ee8P

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
34	SU37404410	BEN					1	1	66	35	66	26	3B				DR	3A	Imp40 Q chalk
35	SU37604410	ARA	SW	02			1	1	87	15	93	1	3A				DR	3A	Chalk 32
36	SU37804410	BEN					1	2	52	50	52	40	3B				DR	3B	Imp30compact
37	SU38004410	BEN	E	03			1	2	98	5	104	10	3A				DR	3A	Chalk 50
38	SU38224408	PLO	W	06			1	1	106	4	99	6	3A				DR	3A	Ch lk 35
39	SU38404410	PLO	W	05			1	1	87	15	93	0	3A				DR	3A	Chalk 35
40	SU37124397	PLO	W	04			1	1	93	9	99	7	3A				DR	3A	Chalk 38
41	SU37304400	PLO	SW	04			1	1	97	4	103	11	3A				DR	3A	Chalk 48
42	SU37504400	PLO	E	03			1	2	68	34	68	24	3B				DR	3A	Imp45 see 8P
43	SU37704400	ARA	SW	02			1	1	85	17	91	2	3A				DR	3A	Chalk 30
44	SU37904400	PLO	E	02	022		3	3B	65	37	65	28	3B				WE	3B	Imp40 see 9P
45	SU38104400	PLO	NE	05			1	2	78	26	78	18	3B				DR	3B	I45 Qchalk 3A
46	SU38304400	PLO	W	05			1	1	90	13	96	2	3A				DR	3A	Chalk 38
47	SU37204390	ARA	S	04			1	2	92	10	97	4	3A				DR	3A	Imp58 Qchalk
48	SU37404390	ARA	S	04			1	2	70	32	70	22	3B				DR	3A	Imp42 see 8P
49	SU37604390	ARA	NE	02	030		2	3A	74	28	74	19	3B				WD	3A	Imp45 see 8P
50	SU37804390	ARA	S	02			1	1	87	16	93	0	3A				DR	3A	Chalk 35
51	SU38004390	PLO	NE	03	020		2	3B	57	46	57	37	3B				WE	3B	Imp40 fli ty
52	SU38204390	PLO					1	2	87	18	87	10	3A				WD	2	Imp50 ee 5P
53	SU37304380	PLO	SW	05			1	1	68	35	68	26	3B				DR	3A	Imp40 Qchalk
54	SU37504380	PLO	SE	04			1	1	90	13	96	2	3A				DR	3A	Chalk 35
55	SU37704380	PLO	NE	02			1	1	83	20	83	11	3A				DR	3A	Imp50 flinty
56	SU37904380	PLO	S	05			1	1	69	35	69	26	3B				DR	3A	Imp40 Qchalk
57	SU38104380	PLO	E	05			1	1	83	21	89	6	3B				DR	3B	Chalk 30
58	SU37204370	PLO	W	02			1	1	86	18	92	4	3A				DR	3A	Ch lk 30
59	SU37404370	PLO	S	03			1	1	91	13	96	0	3A				DR	3A	Chalk 38
60	SU37604370	PLO	W	04			1	1	116	12	119	23	2				DR	2	Imp80 flinty
61	SU37804370	PLO	NE	06			1	2	64	39	64	30	3B				DR	3B	Imp38 Qspl 1P
62	SU38004370	PLO					1	1	66	38	66	30	3B				DR	3B	Imp40 Qspl 40
63	SU38204370	PLO					1	2	86	19	92	5	3A				DR	3A	Chalk 33
64	SU37304360	PLO	W	06			1	1	93	12	99	2	3A				DR	3A	Chalk 35
65	SU37504360	PLO	W	06			1	1	84	20	89	7	3A				DR	3A	Chalk 32
66	SU37704360	PLO					1	2	121	19	113	21	2				WD	2	S1 gleyed 30
67	SU37904360	PLO					3	3B	64	39	64	30	3B				WE	3B	Imp40 see 1P
68	SU38104360	PLO	NE	06			1	1	52	52	52	44	4				DR	3A	Imp30 Q chalk
69	SU37404350	PLO	W	03			1	1	88	17	94	2	3A				DR	3A	Chalk 30
70	SU37604350	PLO	SW	06			1	1	88	15	94	0	3A				DR	3A	Chalk 32
71	SU37804350	PLO	SW	02	040		1	2	99	4	104	10	3A				DR	3A	Chalk 50
72	SU38004350	PLO	NE	02	022	022	4	3B	61	42	61	33	3B				WE	3B	Imp40 see 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES- COL	ABUN	CONT	PED COL	GLEY	STONES- 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-33	mzcl	10YR43 00						3	0	HR	5						Y	+ 5% chalk
	33-70	ch	10YR81 00						0	0	HR	2		P				Y	
1P	0 26	c	10YR43 00						4	1	HR	8							
	26 38	c	10YR54 00						0	0	HR	5	MCAB	VM	M	Y			
	38-100	c	10YR53 00	75YR56 00	C		75YR53 00	Y	0	0	HR	5	SCAB	VM	P	Y		Y	
2	0-32	hzcl	10YR54 00						3	0	HR	5						Y	+ 5% chalk
	32 40	c	10YR46 00						0	0	CH	20		M				Y	+ 5% flints
	40 70	ch	10YR81 00						0	0	HR	2		P				Y	
2P	0-18	mzcl	10YR53 00						2	0	CH	16						Y	
	18-32	hzcl	10YR43 00						0	0	CH	31		M				Y	
	32 68	ch	10YR81 00						0	0		0		P					Roots to 68
3	0 30	mzcl	10YR43 00						0	0	CH	5						Y	+ 2% flints
	30 70	ch	10YR81 00						0	0	HR	2		P				Y	
3P	0 29	mzcl	10YR43 53						1	0	HR	4						Y	+ 4% chalk
	29 72	ch	10YR81 00						0	0	HR	2		P				Y	Roots to 72
4	0 35	mzcl	10YR53 00						6	1	HR	8						Y	+ 5% chalk
	35-70	ch	10YR81 00						0	0		0		P				Y	
4P	0 28	hcl	10YR43 00						6	0	HR	12						Y	
	28-60	ch	10YR81 56				00MN00 00		0	0	HR	2		P				Y	+ 20% soil (hcl)
	60 92	ch	10YR81 00						0	0	HR	2		P				Y	Roots to 92
5	0 32	mzcl	10YR43 00						5	2	HR	8						Y	3% chalk
	32 70	ch	10YR81 00						0	0		0		P				Y	
5P	0 30	hzcl	10YR53 00						3	0	HR	6							
	30 60	h cl	75YR54 00						0	0	HR	24		M					
	60 100	c	75YR54 00						0	0	HR	25		M					
	100 110	hzcl	75YR56 00						0	0	CH	33		M				Y	
	110 120	ch	10YR81 00						0	0		0		P				Y	
6	0 28	hz l	10YR43 00						4	1	HR	8							
	28-70	c	75YR46 00	75YR58 00			00MN00 00	S	0	0	HR	10		P			Y		Imp70 flinty
6P	0 23	hzcl	10YR43 00						2	0	HR	6							
	23-42	c	75YR54 00	75YR58 00	M		75YR53 00	Y	0	0	HR	12	MDVCPR	VM	P	Y		Y	Pale peds gley
	42 75	c	75YR64 00	75YR58 00	M		75YR63 00	Y	0	0	HR	5	MDCPR	FM	P			Y	
	75 120	c	75YR63 00	75YR58 00	M		75YR62 00	Y	0	0	HR	5			P			Y	
7	0 30	hzcl	10YR43 00						5	2	HR	8							
	30 50	c	25 Y62 00	75YR68 00	C			Y	0	0	HR	2			P			Y	Imp50 fli ty

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES COL	ABUN	CONT	PED COL	GLEY	STONES 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
7P	0-23	mzcl	10YR53 00						1	0	HR	3						Y	+ 5% chalk
	23-34	mzcl	75YR53 00						0	0	CH	10	WKCSAB FR	M				Y	
	34-90	ch	10YR81 00						0	0	HR	1		P				Y	Well rooted 75
8	0 30	hzcl	10YR43 00						3	0	HR	5						Y	
	30 45	hzcl	10YR44 00						0	0	HR	10		M				Y	Imp45 fli ty
8P	0 28	hcl	10YR43 00						9	4	HR	22						Y	
	28-55	c	75YR54 00	75YR58 00	C		00MN00 00	S	0	0	HR	33	MDCSAB FM	M					
	55-80	ch	10YR81 00					S	0	0	HR	5		P				Y	
9	0 28	mzcl	10YR43 00						3	0	HR	5						Y	+ 8% chalk
	28 38	mzcl	10YR54 00						0	0	CH	10		M				Y	
	38 65	c	10YR44 00						0	0	CH	10		M				Y	+ 3% fli t
	65-70	c	10YR44 00						0	0	CH	20		M				Y	I70 +3% fli t
9P	0 28	c	10YR44 00						6	2	HR	18							
	28 75	c	75YR54 00	75YR56 00	C		75YR54 00	S	0	0	HR	10	STCAB VM	M	Y		Y		
	75 110	c	75YR54 00	05YR56 00	C			S	0	0	CH	40		M	Y		Y	Y	
	110 120	ch	10YR81 00						0	0	HR	2		P				Y	
10	0 28	hzcl	10YR43 00						5	2	HR	7						Y	Border clay
	28-48	c	75YR46 00	75YR58 00	C		00MN00 00	S	0	0	HR	2		M				Y	Sl gleyed
	48-70	ch	10YR81 00						0	0		0		P				Y	
11	0 28	mzcl	10YR42 00						11	6	HR	15							
	28 35	hzcl	10YR53 00	10YR58 00	C				0	0	HR	5		M					Q dist rbed
12	0 30	mzcl	10YR43 00						3	1	HR	5						Y	
	30 50	hzcl	10YR53 00	10YR58 00	C				0	0	HR	5		M					Imp50 flinty
13	0 28	h cl	10YR43 00						3	1	HR	5							
	28 100	c	10YR53 00	10YR56 00	C		00MN00 00	Y	0	0	HR	10		P		Y			Imp100 flinty
14	0 28	hzcl	10YR34 00						5	2	HR	8							
	28 60	c	05YR46 00	00MN00 00	C		10YR53 00	Y	0	0	HR	5		M					Q spl
	60 70	c	05YR46 00	00MN00 00	C		10YR53 00	Y	0	0	CH	20		M				Y	+ 5% flints
	70 90	c	10YR81 46						0	0	CH	50		M				Y	
	90 100	ch	10YR81 46						0	0	HR	2		P				Y	+ 20% so l (c)
15	0 33	mzcl	10YR43 00						6	0	HR	8							
	33 40	mzcl	10YR36 00						0	0	HR	10		M					Imp40 fl nty
16	0 30	mzcl	10YR43 00						4	1	HR	8						Y	+ 2% chalk
	30 35	h cl	10YR44 00						0	0	CH	20		M				Y	+ 2% fl nts
	35-70	ch	10YR81 00						0	0		0		P				Y	
17	0 27	hzcl	10YR43 00						5	2	HR	8						Y	Border clay
	27 70	ch	10YR81 00						0	0	HR	2		P				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	
18	0-33	mzcl	10YR43 00						2	0	HR	3						Y	
	33-70	ch	10YR81 00						0	0	HR	2		P				Y	
19	0 35	mzcl	10YR43 53						4	1	HR	5						Y	
	35-40	mzcl	10YR54 00						0	0	CH	70		M				Y	
	40 70	ch	10YR81 00						0	0	HR	2		P				Y	
20	0-35	mzcl	10YR43 00						6	0	HR	8						Y	
	35-48	c	10YR44 00						0	0		0		M				Y	
	48-70	ch	10YR81 00						0	0	HR	2		P				Y	
21	0-32	hzcl	10YR43 00						3	1	HR	5						Y	
	32-40	hzcl	10YR46 00						0	0	CH	50		M				Y	
	40 70	ch	10YR81 00						0	0	HR	2		P					
22	0 28	hzcl	10YR54 00						2	0	HR	5							
	28 38	hzcl	10YR53 64	10YR58 00	C			Y	0	0	HR	2		M					Borde c +2% ch
	38 90	c	10YR64 00	10YR68 00	M		00MN00 00	Y	0	0	HR	2		P		Y		Y	+ 1% chalk
23	0 25	mzcl	10YR54 00						1	0	HR	5						Y	+ 3% chalk
	25-40	mzcl	10YR54 00						0	0	CH	10		M				Y	+ 2% fli t
	40 70	ch	10YR81 00						0	0	HR	2		P				Y	
24	0 30	mzcl	10YR34 00						6	2	HR	8							
	30 70	c	10YR54 00	10YR58 00	C		00MN00 00	S	0	0	HR	10		M					Sl gleyed
	70 85	c	10YR54 00	10YR58 00	C		00MN00 00	S	0	0	HR	25		M				Y	Sl gleyed
	85 100	c	10YR54 00						0	0	CH	50		M				Y	Q mottles
	100 120	c	10YR56 00	10YR53 00	C		00MN00 00	S	0	0	CH	10		P		Y		Y	Sl gleyed
25	0 25	hzcl	10YR34 00						9	2	HR	12						Y	
	25-35	c	10YR44 00						0	0	CH	60		M				Y	
	35-70	ch	10YR81 00						0	0		0		P				Y	
26	0 37	mzcl	10YR43 53						3	2	HR	6						Y	
	37 42	hzcl	10YR54 00						0	0	CH	50		M				Y	
	42 70	ch	10YR81 00						0	0	HR	2		P				Y	
27	0 30	mzcl	10YR43 00						6	1	HR	8							
	30 50	hzcl	10YR44 00						0	0	HR	10		M					
	50 80	c	10YR54 00	10YR56 0	C		00MN00	S	0	0	HR	10		P		Y			Imp80 fli ty
28	0 35	mzcl	10YR54 00						1	0	HR	5						Y	+ 3% chalk
	35-70	ch	10YR81 00						0	0	HR	2		P				Y	
29	0 30	hzcl	10YR43 00						4	0	HR	6						Y	
	30 35	hzcl	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	HR	5		M				Y	Imp35 compact
30	0 32	hzcl	10YR43 00						3	1	HR	5						Y	
	32-40	c	10YR46 00						0	0	HR	5		M				Y	
	40 50	c	10YR46 00						0	0	CH	50		M				Y	
	50 70	ch	10YR81 00						0	0	HR	2		P				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES COL	ABUN	CONT	PED COL	GLEY	2	STONES- 6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
31	0 30	hzcl	10YR43 00						4	0	HR	8						Y	
	30 68	c	75YR54 00	75YR58 00	M		00MN00 00	S	0	0	HR	5		M					Sl gleyed
	68-90	ch	10YR81 00						0	0	HR	2		P				Y	
32	0-30	mzcl	10YR44 00						2	0	HR	5						Y	
	30-40	mzcl	10YR44 00						0	0	HR	8		M				Y	Imp40 ch/hr
33	0 35	hzcl	10YR43 00						1	0	HR	5						Y	Q limed tsoil
	35-55	c	75YR54 00	75YR58 00	C		00MN00 00	S	0	0	HR	2		M					Slgley /calc
	55-70	ch	10YR81 00						0	0	HR	2		P				Y	
34	0 30	mzcl	10YR43 00						4	0	HR	10							
	30 40	mzcl	10YR43 00						0	0	HR	15		M					Imp40 fl nty
35	0 32	mzcl	10YR43 00						6	1	HR	6						Y	+ 6% chalk
	32 70	ch	10YR81 00						0	0	HR	3		P				Y	
36	0 30	h cl	10YR43 00						6	0	HR	10						Y	Imp30 compact
37	0 30	h cl	10YR54 00						2	0	HR	4						Y	
	30 40	hzcl	10YR56 00						0	0	HR	5		M				Y	+ 5% chalk
	40 50	hzcl	10YR56 00						0	0	CH	40		M				Y	+ 2% fli ts
	50 70	ch	10YR81 00						0	0	HR	2		P				Y	
38	0 35	mzcl	10YR54 00						0	0	CH	5						Y	+ 3% flints
	35 70	ch	10YR81 64						0	0	HR	2		P				Y	+ 20%so l(mzcl)
	70 90	ch	10YR81 00						0	0		0		P				Y	
39	0 28	mzcl	10YR53 00						0	0	CH	10						Y	+ 3% fl ts
	28 35	mzcl	10YR62 00						0	0	CH	50		M				Y	+ 3% flints
	35 70	ch	10YR81 00						0	0		0		P				Y	
40	0 30	mzcl	10YR54 00						3	0	HR	4						Y	
	30 38	mzcl	10YR54 00						0	0	CH	20		M				Y	
	38-70	ch	10YR81 00						0	0	HR	2		P				Y	
41	0 32	mzcl	10YR53 00						3	1	HR	5						Y	
	32 48	c	10YR44 00						0	0	CH	20		M				Y	
	48 70	ch	10YR81 00						0	0	HR	2		P				Y	
42	0 30	hzcl	10YR44 00						10	6	HR	15						Y	
	30 45	c	75YR46 00	00MN00 00	C		10YR54 00		0	0	HR	20		M					Imp45 flinty
43	0 30	mzcl	10YR43 00						5	1	HR	6						Y	+ 6% chalk
	30 70	ch	10YR81 00						0	0	HR	3		P				Y	
44	0 22	h cl	10YR43 00				00MN00 00		6	3	HR	12						Y	
	22 40	c	75YR53 00	75YR58 00	C		00MN00 00	Y	0	0	HR	4		M		Y		Y	Imp40 fli ty

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES COL	ABUN	CONT	PED COL	GLEY	2	6	STONES LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
45	0-35	hzcl	10YR43 00						5	1	HR	7					Y		
	35-45	c	10YR43 44				00MN00 00		0	0	CH	4		M			Y		I45 +2% hr
46	0 30	mzcl	10YR53 00						0	0	CH	15					Y		+ 3% fli ts
	30 38	mzcl	10YR63 00						0	0	CH	25		M			Y		
	38 70	ch	10YR81 00						0	0		0		P			Y		
47	0 35	hzcl	10YR43 00						8	2	HR	12					Y		
	35-58	h cl	10YR44 54						0	0	CH	6		M			Y		Imp58 Qchalk
48	0 35	h cl	10YR43 00						6	2	HR	10					Y		+ 4% chalk
	35-42	c	10YR54 44						0	0	CH	7		M			Y		I42 +2% h
49	0 30	hzcl	10YR43 00						6	3	HR	12					Y		
	30 45	c	75YR53 00	75YR58 00	C		00MN00 00	Y	0	0	HR	3		M			Y		Imp45 fl nty
50	0 35	mzcl	10YR43 00						7	3	HR	10					Y		+ 4% chalk
	35 70	ch	10YR81 00						0	0	HR	3		P			Y		
51	0 20	c	10YR43 00				00MN00 00		5	0	HR	7					Y		Border hcl
	20 40	c	10YR54 56	75YR58 00	C		00MN00 00	S	0	0	HR	3		P			Y		I40 1 gley
52	0 30	hzcl	10YR42 43						5	1	HR	6					Y		
	30 50	h cl	10YR44 54				00MN00 00		0	0	HR	2		M			Y		I50 +3% ch
53	0 30	mzcl	10YR43 53						4	0	HR	8					Y		+ 3% chalk
	30 40	hzcl	10YR53 00						0	0	CH	12		M			Y		+ 1% flints
54	0 35	mzcl	10YR43 00						2	0	HR	6					Y		+ 5% chalk
	35-70	ch	10YR81 00						0	0	HR	2		P			Y		
55	0 30	mzcl	10YR43 00						6	2	HR	11					Y		
	30 50	hzcl	10YR43 44						0	0	HR	5		M			Y		I50 +5% ch
56	0 30	mzcl	10YR53 43						2	0	HR	3					Y		+ 5% chalk
	30 40	mzcl	10YR43 00						0	0	CH	25		M			Y		
57	0 30	mzcl	10YR54 00						4	2	HR	8					Y		+ 10% chalk
	30 70	ch	10YR81 00						0	0	HR	2		P			Y		
58	0 30	mzcl	10YR53 00						0	0	HR	5					Y		+ 5% chalk
	30 70	ch	10YR81 00						0	0	HR	2		P			Y		
59	0 38	mzcl	10YR53 00						0	0	CH	15					Y		+ 3% flints
	38-70	ch	10YR81 00						0	0	HR	2		P			Y		
60	0 38	mzcl	10YR43 00						2	0	HR	4					Y		
	38-80	mzcl	10YR54 00						0	0	CH	10		M			Y		Imp80 +5%flints

				-MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC	
61	0 30	hzcl	10YR43 00						4	2	HR	8						Y	
	30 38	c	10YR56 00						0	0	HR	10		M					I38 +10% ch
62	0 30	mzcl	10YR43 00						6	2	HR	10						Y	
	30-40	hzcl	10YR56 00						0	0	HR	15		M				Y	Imp40 flinty
63	0-33	hzcl	10YR42 43						8	3	HR	12						Y	
	33-70	ch	10YR81 00						0	0	HR	3		P				Y	
64	0 35	mzcl	10YR53 00						0	0	HR	3						Y	+ 1% chalk
	35-70	ch	10YR81 00						0	0	HR	2		P				Y	
65	0 32	mzcl	10YR53 00						1	0	CH	20						Y	+ 5% flints
	32 70	ch	10YR81 00						0	0	HR	2		P				Y	
66	0 30	hzcl	10YR43 00						6	2	HR	12						Y	
	30 90	hcl	10YR56 00	75YR68 00	C			S	0	0	HR	2		M					Sl gleyed
67	0 25	hzcl	10YR43 00						8	2	HR	15							
	25 40	c	10YR58 76	75YR58 00	C			S	0	0	HR	5		M			Y		I40 sl gley
68	0 30	mzcl	10YR43 00						4	2	HR	10							Imp30 flinty
69	0 30	mzcl	10YR53 00						1	0	HR	2						Y	+ 3% ch lk
	30 70	ch	10YR81 00						0	0	HR	2		P				Y	
70	0 32	mzcl	10YR43 00						2	1	HR	4						Y	+ 10% ch lk
	32 70	ch	10YR81 00						0	0		0		P				Y	
71	0 35	hzcl	10YR43 00						2	1	HR	3						Y	+ 10% chalk
	35-40	hzcl	10YR43 00						0	0	CH	25		M				Y	+ 1% fli ts
	40 50	c	10YR53 54	75YR58 00	M		00MN00	00 Y	0	0	CH	4		M				Y	
	50 70	ch	10YR81 00						0	0	HR	2		P				Y	
72	0 22	hzcl	10YR43 00						8	2	HR	15							
	22 40	c	10YR53 54	75YR58 00	M		00MN00	00 Y	0	0	HR	15		M			Y	Y	Imp40 flinty