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Aylesbury Vale Local Plan
Land between Aston Clinton
Road & Wendover Road
Agricultural Land Classification Report
Semi-detailed Survey
May 1996.

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

LAND BETWEEN ASTON CLINTON ROAD AND WENDOVER ROAD, AYLESBURY

Introduction

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey on 162.5 hectares of land between the Aston Clinton Road and Wendover Road, near Aylesbury, in Buckinghamshire. The survey was carried out during May 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 an adhoc planning application. 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 the majority of the agricultural land to the west of New Road was under permanent or ley grassland with a small area of barley and set-aside. To the east of New Road land use chiefly comprised winter wheat. The areas shown as 'Other Land' comprised the farm buildings and offices at Hampden Hall and other residential buildings.

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)	% Total site area	% Surveyed Area
3a	69.3	42.6	45.7
3b	82.3	50.7	54.3
Other land	10.9	6.7	--
Total surveyed area	151.6	-	100
Total site area	162.5	100	-

7. The fieldwork was conducted at an average density of just under 1 boring per hectare. A total of 111 borings and 5 soil pits were described.

8. The majority of the agricultural land on this site has been classified as Subgrade 3b (moderate quality) with some Subgrade 3a land (good quality) mapped towards the centre and south east of the site. The key limitation here is soil wetness. Drought risk is less common occurring through the centre of the site.

9. Land to the north and west of the site corresponds to the Gault Clay and as such comprises poorly drained clayey profiles. Shallow slowly permeable clay horizons impede drainage and cause prolonged waterlogging thus inhibiting seed germination and growth. Given the local climatic regime the heavy topsoil textures can also limit the timing of cultivations as trafficking by farm machinery and grazing livestock can lead to structural damage. The majority of these profiles have therefore been classified as Subgrade 3b due to soil wetness. Occasional better quality profiles also occur within this mapping unit but these were too limited in number and extent to map separately.

10. Through the centre of the site and to the north east the profiles comprise very slightly to moderately flinty (1-2% >2cm, 3-10% total flint) clay loams and clays over gravelly horizons (chalk, flint or limestone) at shallow depths. In this local climatic regime the combination of soil textures, structures, stone contents and depth to gravel acts to reduce the amount of profile available water for crops. As a result the level and consistency of crop yields is restricted. The gleyed upper subsoils also indicate a slight drainage restriction which in combination with the heavy topsoil textures results in a moderate soil wetness limitation. Seed germination and development may be slightly affected while topsoils workability restrictions can reduce the flexibility of cropping and stocking. This land has therefore been classified as Subgrade 3a on the basis of moderate soil wetness and soil droughtiness limitations. Occasional borings of better and worse quality occur within this mapping unit. However, these were not shown separately as they were too limited in number and extent.

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	SP 843 116	SP 848 129
Altitude	m, AOD	95	85
Accumulated Temperature	day°C (Jan-June)	1395	1406
Average Annual Rainfall	mm	657	646
Field Capacity Days	days	143	139
Moisture Deficit, Wheat	mm	108	109
Moisture Deficit, Potatoes	mm	100	102

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 temperature at this site mean that there is no overall climatic limitation (Climatic Grade 1). However, climatic factors can interact with soil properties to influence soil wetness and droughtiness. At this locality the crop adjusted soil moisture deficits are slightly high thus increasing the likelihood of soil droughtiness. Correspondingly the field capacity day values are low thus decreasing the likelihood of soil wetness.

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

Site

17. The land on this site slopes very gently from 95m AOD in the south west to 85m AOD in the north.

18. Flooding is not likely to affect land quality in this area.

Geology and soils

19. The relevant geological sheet (BGS, 1972) maps Cretaceous Upper Greensand and Gault Clay across the majority of the site with valley gravel to the central south and south east.

20. The most recently published soils information for this area (SSEW, 1983) maps the Grove soil association across the majority of the site. These soils are described as 'moderately permeable fine loamy calcareous soils over chalky gravel affected by groundwater. Some fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged clayey soils.' (SSEW, 1983). The Ruskington association is also shown to correspond to the valley gravel. These soils are 'deep permeable calcareous coarse and fine loamy and sandy soils affected by groundwater. Flat land. Glaciofluvial sand and gravel.' (SSEW, 1983).

21. Detailed field examination revealed soils of a similar nature to those described above across the site.

Agricultural Land Classification

22. 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.

23. 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.

Subgrade 3a

24. Good quality agricultural land (Subgrade 3a) has been mapped to the north east and through the centre of the site where the land is moderately well drained. The majority of soil profiles here are non-calcareous, comprising very slightly to slightly stony (2-10% total flints) heavy clay loam topsoils over similarly stony (2-15% total flints), poorly, or occasionally moderately structured, gleyed, heavy clay loam or clay upper subsoils. At 35-48cm depth the profiles generally become impenetrable to the soil auger over chalky-gravel deposits. Soil inspection pits 1 and 2 revealed that the soil resource continues to depth. The subsoil horizons are generally moderately well structured, comprising a moderately stony (30% flint and 15% Chalk) heavy clay loam over a very stony (55% flint and 10% Chalk) medium clay loam lower subsoil. In this locally cool and dry climatic regime the combined effects of soil texture, structure, stone content and the depth to gravelly deposits leads to a moderate soil droughtiness limitation as the amount of profile available water for crops is reduced. Where the profile is impenetrable at very shallow depths the land has been graded Subgrade 3a, elsewhere it is consistent with Grade 2 although no Grade 2 is mapped due to the limited number and extent of such observations.

25. Soil wetness is also slightly limiting in the profiles assigned to Subgrade 3a. The combination of heavy topsoil textures and impeded drainage, as evidebced by gleying from the upper subsoil, results in a slight wetness and workability limitation which is consistent with Wetness Class II (Appendix III), Subgrade 3a. Wet soils such as these can inhibit seed germination and growth. The heavy topsoils are also more susceptible to structural damage through trafficking by grazing livestock and agricultural machinery. This land has therefore been classified as Subgrade 3a due to both soil wetness and soil droughtiness limitations.

26. Other profiles comprise slightly stony (15% flint), heavy clay loam topsoils over moderately stony (25% flint), clay upper subsoils. These profiles became impenetrable at 30-35cm depth. However, soil inspection pit 4 showed that the subsoils continue to depth with very stony (53-55% flint), moderately structured clays and heavy clay loams. Again the combination of soil texture, structure, stone content and depth to gravelly horizons reduces the amount of profile available water for plants. As a result crop growth and yields will be diminished. This land has been classified as Subgrade 3a due to soil droughtiness.

27. Occasional borings of slightly higher and lower quality were also recorded in this mapping unit. They were not mapped separately, however, due to their limited number and extent.

Subgrade 3b

28. The majority of the site has been classified as moderate quality agricultural land (Subgrade 3b) due to a significant soil wetness limitation. The soil profiles are variably calcareous, generally comprising very slightly stony (2-5% flint) medium or heavy clay loam topsoils over very slightly or slightly stony (1-10% flint, 2% chalk), poorly structured clay to depth. Soil inspection Pits 3 and 5 showed the clay subsoils to be slowly permeable and thus responsible for a significant drainage impedance. The site has therefore been assessed as Wetness Class IV (Appendix III), Subgrade 3b as wet soils such as these can restrict seed development and growth. The medium and heavy topsoil textures can also restrict the flexibility of cropping and stocking as over trafficking of the land can lead to structural damage.

29. Again, occasional borings of slightly higher and lower quality were also recorded in this mapping unit but, were not mapped separately due to their limited number and extent.

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SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No. 238, Aylesbury.* 1:50,000 Series. Solid & Drift.
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.*
SSEW: Harpenden.

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

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 sandstone	**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 **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

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 : ASTON CLINTON/WENDOVER R Pit Number : 1P

Grid Reference: SP85101240 Average Annual Rainfall : 657 mm
Accumulated Temperature : 1395 degree days
Field Capacity Level : 143 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	HCL	10YR42 00	2	5	HR					
25- 43	C	25Y 52 00	0	10	HR	M	MDCAB	FM	P	
43- 80	HCL	10YR64 00	0	30	HR	C	WKCSAB	FR	M	Y
80-120	MCL	25Y 63 64	0	55	HR	M		FR	M	Y

Wetness Grade : 3A Wetness Class : II
Gleying :025 cm
SPL : No SPL

Drought Grade : 2 APW : 113mm MBW : 7 mm
APP : 95 mm MBP : -3 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : ASTON CLINTON/WENDOVER R Pit Number : 2P

Grid Reference: SP85701260
Average Annual Rainfall : 657 mm
Accumulated Temperature : 1395 degree days
Field Capacity Level : 143 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	HCL	10YR32 00	2	5	HR					
28- 65	C	25 Y52 00	0	3	HR	C	MDCSAB	FR	M	
65- 75	C	25 Y64 00	0	15	HR	C			M	Y
75- 85	SCL	25 Y62 00	0	30	HR	C			M	Y

Wetness Grade : 3A
Wetness Class : II
Gleying :028 cm
SPL : No SPL

Drought Grade : 3A
APW : 105mm MBW : -1 mm
APP : 111mm MBP : 13 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : ASTON CLINTON/WENDOVER R Pit Number : 3P

Grid Reference: SP85401250 Average Annual Rainfall : 657 mm
Accumulated Temperature : 1395 degree days
Field Capacity Level : 143 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	HCL	10YR42 00	2	5	HR					
27- 37	C	10YR53 00	0	5	HR	C	WKCSAB	FM	P	
37- 60	C	25Y 62 00	0	2	CH	M	MDCAB	FM	P	Y

Wetness Grade : 3B Wetness Class : IV
Gleying :027 cm
SPL :027 cm

Drought Grade : 3B APW : 83 mm MBW : -23 mm
APP : 88 mm MBP : -10 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : ASTON CLINTON/WENDOVER R Pit Number : 4P

Grid Reference: SP85001210 Average Annual Rainfall : 657 mm
Accumulated Temperature : 1395 degree days
Field Capacity Level : 143 days
Land Use : Ley
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	HCL	10YR32 00	4	15	HR					
35- 45	C	10YR42 00	0	53	HR			FM	M	
45- 60	C	25Y 52 00	0	55	HR	C		FR	M	Y
60-120	HCL	25Y 62 00	0	55	HR	C		FR	M	Y

Wetness Grade : 1 Wetness Class : I
Gleying :045 cm
SPL : No SPL

Drought Grade : 3A APW : 99 mm MBW : -7 mm
APP : 82 mm MBP : -16 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ASTON CLINTON/WENDOVER R Pit Number : SP

Grid Reference: SP84201190 Average Annual Rainfall : 657 mm
Accumulated Temperature : 1395 degree days
Field Capacity Level : 143 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 19	HCL	10YR32 00	1	5	HR					
19- 29	C	10YR52 00	0	5	HR	C	WKCSAB	FM	P	
29- 52	C	25Y 52 00	0	0		M	MDCAB	FM	P	

Wetness Grade : 3B Wetness Class : IV
Gleying :019 cm
SPL :019 cm

Drought Grade : 3B APW : 74 mm MBW : -32 mm
APP : 75 mm MBP : -23 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT		--WETNESS--		-WHEAT-		-POTS-		M.REL	EROSN	FROST	CHEM	ALC	COMMENTS
			GRONT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	SP84651316	PGR	0		5	4	60	-46	60	-38	3B				WE 4	Rushy;I3Bflinty
1P	SP85101240	WHT	025		2	3A	113	7	95	-3	2				WE 3A	At boring 42
2	SP84801310	PGR	0	028	4	3B		0		0					WE 3B	
2P	SP85701260	CER	028		2	3A	105	-1	111	13	3A				WD 3A	At boring 29
3	SP84701300	PGR	0		2	3A	65	-41	65	-33	3B				WE 3A	Imp45 see 1P
3P	SP85401250	WHT	027	027	4	3B	83	-23	88	-10	3B				WE 3B	At boring 35
4	SP85301290	PGR	015	015	4	3B		0		0					WE 3B	
4P	SP85001210	LEY	045		1	1	99	-7	82	-16	3A				DR 3A	At boring 74
5	SP84801290	PGR	030	030	4	3B		0		0					WE 3B	
5P	SP84201190	PGR	019	019	4	3B	74	-32	75	-23	3B				WE 3B	At boring 90
6	SP85201290	PGR	015	015	4	3B		0		0					WE 3B	
7	SP85421290	WHT	025	025	4	3B		0		0					WE 3B	
8	SP84701280	PGR	0	030	4	3B		0		0					WE 3B	
9	SP84901280	PGR	030	030	4	3B		0		0					WE 3B	
10	SP85101280	PGR	0	030	4	3B		0		0					WE 3B	
11	SP85301280	PGR	0	030	4	3B		0		0					WE 3B	
12	SP85501280	WHT	025	025	4	3B		0		0					WE 3B	Imp60 flinty
13	SP85601280	WHT	028		2	3A		0		0					WE 3A	Imp52 see 2P
14	SP85701280	CER	025		2	3A	63	-43	63	-35	3B				WE 3A	Imp40 gravelly
15	SP84801270	SAS	025		2	2	41	-65	41	-57	4				DR 3A	Imp30 see 4P
16	SP84901270	SAS	028		2	2	58	-48	58	-40	3B				DR 3A	Imp38 see 1P
17	SP85001270	PGR	0	020	4	3B		0		0					WE 3B	
18	SP85101270	PGR	0	055	3	3A	103	-3	109	11	3A				WE 3A	Ridge + furrow
19	SP85201270	WHT	0	028	4	3B		0		0					WE 3B	
20	SP85401270	WHT			1	1	66	-40	66	-32	3B				DR 3A	Imp40 see 4P
21	SP85601270	CER	025	025	4	3B		0		0					WE 3B	Imp 100
22	SP85801270	CER	030		2	3A		0		0					WE 3A	Imp40 see 1P
23	SP84801260	PGR	030		2	3A	78	-28	81	-17	3B				WE 3A	Imp48 see 1P
24	SP84901260	WHT	028	028	4	3B		0		0					WE 3B	
25	SP85201260	WHT	030		2	3A	75	-31	75	-23	3B				WE 3A	Imp48 see 1P
26	SP85301260	WHT	048	048	3	3B		0		0					WE 3B	
27	SP85501260	CER	0		2	3A	57	-49	57	-41	3B				WD 3A	Imp35 see 1P
28	SP85601260	WHT	030	030	4	3B		0		0					WE 3B	
29	SP85701260	CER	022		2	3A	95	-11	100	2	3A				WE 3A	See 2P
30	SP85801260	WHT	030	030	4	3B		0		0					WE 3B	
31	SP84801250	WHT	030		2	2	63	-43	63	-35	3B				DR 2	Imp40 see 1P
32	SP84901250	WHT	030		2	3A	73	-33	73	-25	3B				WE 3A	Imp48 see 1P
33	SP85041249	WHT	0		2	3A	75	-31	76	-22	3B				WE 3A	Imp52 see 1P
34	SP85201250	WHT	030		2	3A	74	-32	74	-24	3B				WE 3A	Imp50 see 1P
35	SP85401250	WHT	025	025	4	3B		0		0					WE 3B	See 3P
36	SP85601250	CER	028	028	4	3B		0		0					WE 3B	Very plastic
37	SP85701250	WHT	030	030	4	3B		0		0					WE 3B	Borderline 3a

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
38	SP85801250	CER				025		2	3A	76	-30	76	-22	3B				WE	3A	Imp48 see 1P
39	SP84701240	PGR				025	025	4	3B	89	-17	93	-5	3A	Y			WE	3B	
40	SP84801240	PGR				030	030	4	3B		0		0					WE	3B	
41	SP84901240	PGR				040		1	2	82	-24	82	-16	3B				DR	3A	Imp50 see 4P
42	SP85101240	WHT				025		2	3A	80	-26	82	-16	3B				WE	3A	Imp55 see 4P
43	SP85301240	WHT				030		2	2	55	-51	55	-43	4				DR	3A	Imp35 see 4P
44	SP85401240	WHT				030		2	3A	91	-15	100	2	3A				WE	3A	
45	SP85501240	CER				025		2	3A	85	-21	88	-10	3B				WE	3A	Imp55
46	SP85601240	WHT				030		2	3A	69	-37	69	-29	3B				WE	3A	Imp45 see 1P
47	SP85701240	CER				028	028	4	3B		0		0					WE	3B	
48	SP84501230	PGR				030	030	4	3B		0		0		Y			WE	3B	
49	SP84601230	PGR				035		2	3A	84	-22	84	-14	3B	Y			WE	3A	Imp48 see 1P
50	SP84801230	PGR				0	015	4	3B		0		0		Y			WE	3B	
51	SP84901230	PGR				0		2	3B		0		0					WE	3B	Imp30;C t/soil
52	SP85001230	PGR						1	2	66	-40	66	-32	3B				DR	3A	See 4P
53	SP85201230	WHT				030		2	3A	75	-31	75	-23	3B				WE	3A	Imp50 see 1P
54	SP85401230	CER				038	038	4	3B		0		0					WE	3B	Borderline 3a
55	SP85601230	CER				028		2	3A	75	-31	75	-23	3B				WE	3A	Imp45 see 1P
56	SP84401220	PGR				0	025	4	3B		0		0					WE	3B	
57	SP84501220	PGR				055	055	2	3B		0		0					WE	3B	
58	SP84701220	PGR				0	035	4	3B		0		0					WE	3B	
59	SP84801220	PGR				030		2	3A	83	-23	83	-15	3B				WE	3A	Imp48 see 1P
60	SP84901220	PGR				028		2	3A	113	7	114	16	2				WE	3A	Imp85
61	SP85101220	PGR				030	030	4	3B		0		0					WE	3B	I60chalky grvl
62	SP85301220	PGR				028		2	3A	68	-38	68	-30	3B				WE	3A	Imp45 see 1P
63	SP85501220	CER				025		2	3A	65	-41	65	-33	3B				WE	3A	Imp40 see 1P
64	SP85601220	WHT				030		2	3A	64	-42	64	-34	3B				WE	3A	Imp40 see 1P
65	SP85701220	CER				020	020	4	3B		0		0					WE	3B	Imp60 see 1P
66	SP84201210	PGR	E		01	022	022	4	3B		0		0					WE	3B	Plastic 22
67	SP84301210	PGR				015	015	4	3B		0		0					WE	3B	
68	SP84401210	PGR				025		2	3A	65	-41	65	-33	3B				WE	3A	Imp45 see 1P
69	SP84501210	PGR				025		2	2	52	-54	52	-46	4				WD	2	Imp35 see 1P
70	SP84601210	PGR				025	025	2	3B		0		0		Y			WE	3B	Imp55gravelly
71	SP84701210	PGR				025	025	4	3B		0		0					WE	3B	
72	SP84801210	PGR				025		2	2	81	-25	86	-12	3B				WD	2	Imp60 see 1P
73	SP84901210	PGR				050		1	2	100	-6	109	11	3A				DR	3A	Imp68
74	SP85001210	LEY						1	1	52	-54	52	-46	4				DR	3A	Imp35 see 4P
75	SP85101210	LEY				030		2	3A	90	-16	100	2	3A				WE	3A	I70chalky grvl
76	SP85201210	PGR				028		2	3A	65	-41	65	-33	3B				WE	3A	Imp40 see 1P
77	SP85401210	PGR				028		2	3A	73	-33	73	-25	3B				WE	3A	Imp45 see 1P
78	SP84101200	PGR	E		01	028	028	4	3B		0		0					WE	3B	
79	SP84301200	PGR	NE		02	025	025	4	3B		0		0					WE	3B	

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
80	SP84401200	PGR			028	028	4	3B		0		0					WE	3B	
81	SP84501200	PGR			028		2	3A	74	-32	74	-24	3B				WD	3A	Imp50 see 1P
82	SP84601200	PGR			025		2	2	93	-13	101	3	3A				DR	2	Imp65 see 1P
83	SP84701200	PGR			027		2	3A	75	-31	75	-23	3B				WE	3A	Imp48 see 1P
84	SP84801200	PGR			025		2	2	65	-41	65	-33	3B				WD	2	Imp40 see 1P
85	SP84901200	PGR					1	2	83	-23	83	-15	3B				DR	3A	Imp50 see 4P
86	SP85001200	PGR			020		2	3A	66	-40	66	-32	3B				WE	3A	I45chalky grvl
87	SP85101200	PGR					1	1	46	-60	46	-52	4				DR	3A	Imp30 see 4P
88	SP85301200	PGR			030		2	3A	59	-47	59	-39	3B				WE	3A	Imp35 see 1P
89	SP84001190	PGR			028	028	4	3B		0		0					WE	3B	Plastic 28
90	SP84201190	PGR			028	028	4	3B		0		0					WE	3B	Plastic 28
91	SP84401190	PGR			0	025	4	3B		0		0					WE	3B	
92	SP84501190	PGR			028		2	2	109	3	110	12	3A				WD	2	Imp80 see 1P
93	SP84621188	PLO			020	020	4	3B		0		0					DR	3B	Borderline 3a
94	SP84701190	ARA			028		2	2	60	-46	60	-38	3B				WD	2	Imp40 see 1P
95	SP84801190	PGR			030	030	4	3B		0		0					WE	3B	Imp55 border 3
96	SP84901190	LEY			050	050	2	3A	88	-18	100	2	3A				WE	3A	
97	SP85001190	PGR			020		2	3A	59	-47	59	-39	3B				WD	3A	Imp40 see 1P
98	SP83921176	CER			028	028	4	3B		0		0					WE	3B	Plastic 28
99	SP84101180	PGR			0	020	4	3B		0		0					WE	3B	
100	SP84301180	PGR	NE	02	0	025	4	3B		0		0					WE	3B	Plastic 25
101	SP84501180	PLO			015	015	4	3B		0		0					WE	3B	
102	SP84601180	ARA			030		2	2	96	-10	105	7	3A				DR	3A	Imp65 see 4P
103	SP84701180	PLO			020		2	3A	110	4	102	4	3A				WE	3A	I90chalky grvl
104	SP84801180	ARA			025	025	4	3B		0		0					WE	3B	
105	SP84051170	PGR			0	025	4	3B		0		0					WE	3B	Plastic 25
106	SP84201172	PGR			0	025	4	3B		0		0					WE	3B	Plastic 35
107	SP84421170	PLO			018	018	4	3B		0		0					WE	3B	
108	SP84601170	PLO			020	020	4	3B		0		0					WE	3B	
109	SP84701170	ARA			025		2	2	92	-14	102	4	3A				WE	2	I70chalky grvl
110	SP84301160	CER	SE	02	0	025	4	3B		0		0					WE	3B	Plastic 25
111	SP84501160	PLO			0	020	4	3B		0		0					WE	3B	

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	0-25	hcl	10YR42 00	75YR46 00	M			Y	0	0	HR	5							
	25-38	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	20		M					Friable;Imp-flints
1P	0-25	hcl	10YR42 00						2	0	HR	5							
	25-43	c	25Y 52 00	10YR58 00	M		00MN00 00	Y	0	0	HR	10	MDCAB	FM P	Y				
	43-80	hcl	10YR64 00	10YR58 00	C			Y	0	0	HR	30	WKCSAB	FR M				Y	+ 15% chalk
	80-120	mcl	25Y 63 64	10YR58 00	M			Y	0	0	HR	55		FR M				Y	
2	0-28	hcl	10YR42 00	10YR58 00	C			Y	1	0	HR	5						Y	
	28-55	c	25Y 52 53	75YR58 00	M		00MN00 00	Y	0	0	HR	10		P			Y	Y	
	55-70	c	25Y 71 00	75YR58 00	M		00MN00 00	Y	0	0	SLST	10		P			Y	Y	
2P	0-28	hcl	10YR32 00						2	0	HR	5							
	28-65	c	25 Y52 00	10YR56 00	C			Y	0	0	HR	3	MDCSAB	FR M					
	65-75	c	25 Y64 00	10YR58 00	C			Y	0	0	HR	15		M				Y	+ 15% chalk
	75-85	scl	25 Y62 00	75YR58 00	C			Y	0	0	HR	30		M				Y	+ 20% chalk
3	0-25	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	5							
	25-45	c	25Y 52 53	10YR58 00	M			Y	0	0	HR	15		P					Imp40 gravelly
3P	0-27	hcl	10YR42 00						2	0	HR	5							
	27-37	c	10YR53 00	10YR56 00	C			Y	0	0	HR	5	WKCSAB	FM P	Y		Y		Tending AB
	37-60	c	25Y 62 00	10YR58 00	M			Y	0	0	CH	2	MDCAB	FM P	Y		Y	Y	Very heavy
4	0-15	mcl	10YR41 00						0	0	HR	3							
	15-45	c	25Y 63 00	10YR66 00	M			Y	0	0	HR	3		P			Y		
	45-60	c	25Y 61 63	10YR66 68	M			Y	0	0		0		P			Y	Y	
4P	0-35	hcl	10YR32 00						4	0	HR	15							
	35-45	c	10YR42 00						0	0	HR	53		FM M					Too stony-not spl
	45-60	c	25Y 52 00	10YR58 00	C			Y	0	0	HR	55		FR M				Y	Too stony-not spl
	60-120	hcl	25Y 62 00	10YR66 00	C			Y	0	0	HR	55		FR M				Y	Too stony-not spl
5	0-30	hcl	10YR42 32						0	0	HR	10						Y	
	30-38	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	5		P			Y	Y	Very firm
	38-60	hcl	25Y 41 00	75YR58 00	C			Y	0	0	SLST	5		P			Y	Y	Firm
5P	0-19	hcl	10YR32 00						1	0	HR	5							
	19-29	c	10YR52 00	10YR56 00	C			Y	0	0	HR	5	WKCSAB	FM P	Y		Y		
	29-52	c	25Y 52 00	10YR58 51	M			Y	0	0		0	MDCAB	FM P	Y		Y		Very plastic
6	0-15	mcl	10YR41 00						0	0	HR	3							
	15-38	c	25Y 63 00	10YR66 00	M			Y	0	0	HR	3		P			Y		
	38-60	c	25Y 61 63	10YR66 00	M			Y	0	0	HR	3		P			Y	Y	
7	0-25	hcl	10YR42 00						0	0	HR	2							
	25-48	c	25Y 53 00	10YR58 00	C			Y	0	0	HR	2		P			Y		
	48-70	c	25Y 62 00	10YR66 00	C			Y	0	0	CH	2		P			Y	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	
8	0-30	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	5						Y	
	30-55	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	10		P			Y	Y	
	55-70	c	10YR52 00	75YR88 00	M			Y	0	0	HR	5		P			Y	Y	
9	0-30	hcl	10YR42 00						0	0	HR	10						Y	
	30-50	c	25Y 52 53	10YR58 00	C			Y	0	0	HR	10		P			Y	Y	
	50-65	c	25Y 52 00	75YR58 00	M			Y	0	0	SLST	5		P			Y	Y	
10	0-15	mcl	10YR42 41	75YR46 00	C			Y	0	0	HR	3							
	15-30	hcl	10YR62 00	10YR66 00	M			Y	0	0	HR	3		M					
	30-60	c	25Y 62 61	10YR66 00	M			Y	0	0	HR	3		P			Y		
11	0-30	hcl	10YR41 00	75YR46 00	C			Y	1	0	HR	5							
	30-60	c	10YR52 63	10YR68 61	M		00MN00 00	Y	0	0	HR	5		P			Y		
12	0-25	hcl	10YR42 00						1	0	HR	5							
	25-60	c	25Y 61 00	10YR58 00	C			Y	0	0	CH	2		P			Y	Y	Imp60 gravelly
13	0-28	c	10YR42 00						2	0	HR	5							
	28-48	c	10YR63 00	10YR66 00	M			Y	0	0	HR	10		M				Y	Soft/sandy
14	0-25	hcl	10YR32 00						0	0	HR	3							
	25-40	c	25Y 42 00	10YR46 00	C			Y	0	0	HR	2		P					Imp40 gravelly
15	0-25	hcl	10YR42 00						6	0	HR	20						Y	
	25-30	c	25Y 52 53	75YR58 00	C			Y	0	0	HR	30		P				Y	+5%ch;Imp-flints
16	0-28	hcl	10YR42 00						3	0	HR	10						Y	Borderline c
	28-38	c	25Y 52 53	10YR58 00	M			Y	0	0	SLST	12		P				Y	I38chalky gravel
17	0-20	omcl	10YR31 00	75YR46 00	C			Y	0	0		0							
	20-55	c	25Y 62 00	10YR58 00	M			Y	0	0	CH	2		P			Y	Y	
	55-60	c	25Y 62 00	10YR58 00	M			Y	0	0	HR	20		P			Y	Y	I60chalky gravel
18	0-25	mcl	10YR41 00	75YR46 00	C			Y	1	0	HR	5							
	25-55	c	10YR53 00	10YR58 00	M			Y	0	0	HR	3		M				Y	Borderline hcl
	55-80	c	25Y 61 00	10YR58 00	M		00MN00 00	Y	0	0		0		P			Y	Y	Very plastic
19	0-28	hcl	10YR42 00	10YR58 00	C			Y	1	0	HR	5							
	28-65	c	25Y 61 62	10YR58 00	C		00MN00 00	Y	0	0	HR	1		P			Y		
20	0-30	hcl	10YR42 00						1	0	HR	5							
	30-40	c	25Y 64 00				00MN00 00	Y	0	0	HR	10		M					I40chalky gravel
21	0-25	hcl	25 Y32 00						0	0	HR	2							
	25-100	c	25 Y53 00	75YR46 00	C			Y	0	0	HR	2		P			Y	Y	I100chalky gravl
22	0-30	hcl	10YR31 00						2	0	HR	5							
	30-40	c	25YR52 00	25Y 56 00	C			Y	0	0	HR	5		P					I40chalky gravel

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	
23	0-30	hcl	10YR42 00						0	0	HR	5							
	30-48	c	25Y 52 53 75YR58 00	M				Y	0	0	HR	10		P					I48chalky gravel
24	0-28	hcl	10YR42 00						0	0	HR	10							
	28-55	c	25Y 52 62 10YR58 00	M				Y	0	0	HR	5		P		Y			
	55-60	hcl	25Y 63 00 10YR68 00	M				Y	0	0	SLST	15		M			Y		Friable
25	0-30	hcl	10YR42 00						2	0	HR	5							
	30-48	c	10YR52 53 75YR58 00	C				Y	0	0	HR	10		P					Imp48 gravelly
26	0-25	hcl	10YR42 00						0	0	HR	2							
	25-48	c	25Y 54 00						0	0	HR	2		M					
	48-70	c	25Y 52 53 75YR58 00	C			00MN00 00	Y	0	0	HR	5		P		Y			
27	0-30	c	10YR32 00 10YR46 00	C			00MN00 00	Y	0	0	HR	2					Y		
	30-35	c	10YR53 00 10YR46 00	C				Y	0	0	HR	15		P			Y		Imp35 flinty
28	0-30	c	10YR32 00						1	0	HR	3							
	30-45	c	10YR52 53 10YR58 00	C				Y	0	0	HR	5		P		Y			
	45-80	c	25Y 62 00 10YR66 00	C				Y	0	0	CH	2		P		Y	Y		
29	0-22	hcl	10YR32 00						0	0	HR	2							See 2P
	22-75	c	10YR53 00 75YR58 00	C				Y	0	0	HR	2		M					
	75-80	c	10YR53 00 75YR58 00	C				Y	0	0	HR	2		M			Y		
30	0-30	hcl	10RY32 00						2	0	HR	5							
	30-55	c	25Y 52 00 75YR58 00	M				Y	0	0	HR	10		P		Y			
	55-80	c	25Y 62 00 10YR66 00	C				Y	0	0	CH	2		P		Y	Y		
31	0-30	hcl	10YR42 00						5	0	HR	10					Y		
	30-40	c	25Y 52 53 10YR58 00	C				Y	0	0	SLST	15		M			Y		+10%hr;Imp-gravelly
32	0-30	hcl	10YR42 00						0	0	HR	10							
	30-48	c	25Y 52 53 75YR58 00	M				Y	0	0	HR	10		P					I48chalky gravel
33	0-28	hcl	10YR42 00 10YR56 00	C				Y	0	0	HR	5							
	28-48	c	25Y 52 53 10YR58 00	C			00MN00 00	Y	0	0	HR	10		P					I48chalky gravel
34	0-30	hcl	10YR42 00						1	0	HR	5							
	30-48	c	25Y 53 52 10YR58 00	C			00MN00 00	Y	0	0	HR	15		P					I48chalky gravel
35	0-25	hcl	10YR42 00						0	0	HR	2							
	25-48	c	25Y 53 00 10YR58 00	C				Y	0	0	HR	2		P		Y			
	48-70	c	25Y 62 00 10YR66 00	C				Y	0	0	CH	2		P		Y	Y		
36	0-28	c	10YR32 00 10YR58 00	F					0	0	HR	2					Y		
	28-80	c	10YR62 00 10YR46 00	M				Y	0	0		0		P		Y	Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
37	0-30	hcl	10YR42 00						2	0	HR	5							
	30-50	c	25Y 52 00	75YR58 00	C			Y	0	0	HR	10		P		Y			
	50-55	hcl	25Y 53 00	75YR58 00	M			Y	0	0	HR	25		M				Y	I55chalky gravel
38	0-25	hcl	10YR31 00						0	0	HR	3							
	25-48	c	10YR31 32	10YR46 00	C			Y	0	0	HR	2		P					I48chalky gravel
39	0-25	hcl	10YR32 00						0	0		0							Ridge and furrow
	25-55	c	10YR53 00	75YR58 00	C			Y	0	0		0		P		Y			I55chalky gravel
40	0-20	hcl	10YR41 00	75YR46 00	F				0	0		0						Y	
	20-30	c	25 Y52 00						0	0	HR	5		M				Y	
	30-50	c	25 Y52 00	10YR46 00	C			Y	0	0	HR	5		P		Y		Y	
	50-70	c	25 Y60 70	10YR68 00	M			Y	0	0		0		P		Y		Y	
41	0-30	hcl	10YR32 00						0	0	HR	5							
	30-40	c	10YR52 42						0	0	HR	6		M					
	40-50	c	25Y 53 43	10YR58 00	M			Y	0	0	HR	3		M				Y	Friable
42	0-25	hcl	10YR42 00						1	0	HR	5							
	25-43	c	25Y 53 52	75YR58 00	C		00MN00 00	Y	0	0	HR	5		P					
	43-55	scl	25Y 64 53	10YR58 00	C			Y	0	0	HR	25		M				Y	I55chalky gravel
43	0-30	hcl	10YR42 00						2	0	HR	10						Y	
	30-35	scl	25Y 64 00	10YR58 00	C			Y	0	0	HR	25		M				Y	Imp35 gravelly
44	0-30	hcl	10YR42 00						2	0	HR	5							
	30-40	c	10YR53 52	75YR58 00	C			Y	0	0	HR	10		P					Too thin for spl
	40-50	hcl	10YR52 00	75YR46 00	M			Y	0	0	HR	20		M					Friable
	50-65	hcl	25Y 62 00	75YR58 00	C			Y	0	0	HR	5		M				Y	+10%chalk;Imp
45	0-25	hcl	10YR31 00						0	0	HR	3							
	25-45	c	10YR42 00	75YR46 00	M			Y	0	0	HR	2		M				Y	
	45-55	c	10YR52 00	10YR46 00	M			Y	0	0	HR	20		M				Y	Too stony for spl
46	0-30	hcl	10YR42 00						2	0	HR	5							
	30-45	c	10YR52 53	75YR58 00	C			Y	0	0	HR	10		P					Imp45 gravelly
47	0-28	c	10YR32 00						0	0	HR	2							
	28-45	c	10YR53 00	10YR46 00	C			Y	0	0	HR	2		P		Y			
	45-80	c	10YR62 00	10YR46 00	M			Y	0	0		0		P		Y		Y	
48	0-30	hcl	10YR32 00						0	0		0							
	30-70	c	10YR53 00	10YR58 00	C		10YR61 00	Y	0	0	HR	2		P		Y			
49	0-35	hcl	10YR32 00						0	0	HR	5							Ridge and furrow
	35-48	c	10YR41 00	10YR46 00	C			Y	0	0	HR	2		M					Imp48 gravelly

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	
50	0-15	mcl	10YR31 00	10YR46 00	C			Y	0	0		0							Ridge and furrow
	15-70	c	10YR52 00	75YR58 00	C			Y	0	0	HR	5		P		Y			Imp70 gravelly
51	0-20	c	10YR41 00	10YR46 00	C			Y	0	0	HR	5							
	20-30	c	25 Y52 00	10YR46 00	C			Y	0	0	HR	10		P				Y	Imp30 gravelly
52	0-25	hcl	10YR32 00						0	0	HR	5							
	25-40	hcl	10YR52 00						0	0	HR	3		M				Y	Imp40 gravelly
53	0-30	hcl	10YR42 00						1	0	HR	5							
	30-48	c	25Y 52 53	10YR58 00	C		00MN00 00	Y	0	0	HR	10		P					Imp48 gravelly
54	0-28	hcl	10YR32 00						0	0	HR	3							
	28-38	hcl	10YR43 00						0	0	HR	4		M				Y	
	38-55	c	25 Y44 00	10YR46 00	C			Y	0	0	HR	15		P		Y		Y	Imp55 gravelly
55	0-28	hcl	10YR32 00						0	0	HR	3							
	28-40	c	10YR52 00	75YR46 00	C			Y	0	0	HR	5		M				Y	
	40-45	c	10YR52 00	75YR46 00	C			Y	0	0	HR	10		M				Y	Imp45 gravelly
56	0-25	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	5							
	25-50	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	2		P		Y		Y	
	50-65	c	25Y 71 00	10YR58 00	M			Y	0	0	SLST	2		P		Y		Y	
57	0-25	c	10YR42 00						2	0	HR	5							
	25-55	c	10YR53 00						0	0	HR	5		M					
	55-75	c	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0	HR	5		P		Y			Sl. sandy
58	0-15	mcl	10YR41 00	75YR46 00	C			Y	0	0		0							
	15-35	hcl	10YR52 00	75YR58 00	C		10YR61 00	Y	0	0	HR	2		M				Y	
	35-60	c	25 Y52 00	75YR58 00	C		10YR61 00	Y	0	0	CH	10		P		Y		Y	Plastic
	60-80	c	25 Y62 00	10YR46 00	M			Y	0	0		0		P		Y		Y	Very plastic
59	0-30	hcl	10YR32 00	75YR46 00	F			Y	0	0	HR	5							
	30-48	c	10YR53 00	75YR58 00	C			Y	0	0	HR	2		M				Y	Friable;Imp48
60	0-28	hcl	10YR32 00						0	0	HR	5							
	28-70	c	10YR53 00	10YR58 00	M			Y	0	0	HR	2		M					
	70-85	scl	25Y 52 62	10YR58 00	M			Y	0	0	CH	15		M				Y	
61	0-30	hcl	10YR32 00						0	0	HR	3							
	30-45	c	10YR53 00	10YR56 52	M			Y	0	0	HR	10		P		Y			
	45-60	c	10YR53 00	10YR56 52	M			Y	0	0	HR	10		P		Y		Y	
62	0-28	hcl	10YR32 00						0	0	HR	5						Y	
	28-45	c	10YR52 00	75YR46 00	C			Y	0	0	HR	10		P				Y	Imp45 gravelly
63	0-25	hcl	10YR32 00						0	0	HR	2							
	25-40	c	10YR52 53	10YR46 00	C			Y	0	0	HR	15		M				Y	Imp40 gravelly

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
64	0-30	hcl	10YR42 00						2	0	HR	5							
	30-40	c	10YR52 53	10YR58 00	C			Y	0	0	HR	15		P					Imp40 gravelly
65	0-20	hcl	10YR32 00						0	0	HR	5							
	20-45	c	10YR52 00	10YR46 00	C			Y	0	0	HR	2		P		Y			
	45-55	c	25Y 52 00	75YR56 00	C		10YR51 00	Y	0	0	HR	2		P		Y	Y		
	55-60	c	25Y 52 00	75YR56 00	C		10YR51 00	Y	0	0	HR	15		P		Y	Y		Imp60 gravelly
66	0-22	hcl	10YR42 00						0	0	HR	3							
	22-45	c	25Y 51 00	75YR58 00	M			Y	0	0		0		P		Y			
	45-60	c	25Y 51 52	10YR58 00	M			Y	0	0		0		P		Y			
67	0-15	hcl	10YR42 00						1	0	HR	5							
	15-50	c	25Y 51 53	10YR68 00	M			Y	0	0	HR	2		P		Y			
	50-70	c	25Y 51 53	75YR58 68	M		00MN00 00	Y	0	0	HR	10		P		Y			
68	0-25	c	10YR42 00						0	0	HR	5						Y	
	25-40	c	25Y 53 00	10YR58 00	C			Y	0	0	HR	5		P				Y	
	40-45	hcl	10YR64 54	10YR58 00	C			Y	0	0	HR	30		M				Y	I48chalky gravel
69	0-25	hcl	10YR42 00						2	0	HR	10						Y	
	25-35	c	25Y 53 00	10YR56 00	C			Y	0	0	SLST	20		P				Y	I35flinty gravel
70	0-25	hcl	10YR32 00	10YR46 00	F				0	0		0							
	25-55	c	10YR53 00	75YR58 00	C		10YR61 00	Y	0	0	CH	10		P		Y		Y	Imp55 gravelly
71	0-25	hcl	10YR42 41						1	0	HR	5						Y	
	25-60	c	25Y 62 61	75YR58 00	M			Y	0	0	SLST	5		P		Y		Y	Imp60 gravelly
72	0-25	hcl	10YR31 00						0	0	HR	5						Y	
	25-40	c	25 Y52 00	75YR58 00	C		25 Y62 00	Y	0	0	HR	5		P				Y	Plastic
	40-60	c	25 Y62 00	10YR68 00	C			Y	0	0	CH	30		M				Y	Very wet; Imp60
73	0-30	hcl	10YR32 00						0	0	HR	3							
	30-40	c	25Y 44 00						0	0	HR	2		M					
	40-50	c	25Y 56 54						0	0	CH	15		M				Y	
	50-68	scl	25Y 53 00	10YR58 00	C			Y	0	0	CH	15		M				Y	
74	0-30	hcl	10YR42 00						0	0	HR	15							
	30-35	c	10YR42 00						0	0	HR	25		M					Imp35 gravelly
75	0-30	hcl	10YR42 00						2	0	HR	5							
	30-48	c	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	HR	10		P					Too shallow for spl
	48-70	hcl	10YR64 63	10YR68 00	C			Y	0	0	HR	25		M				Y	+15% chalk
76	0-28	hcl	10YR32 00						0	0	HR	5							
	28-40	hcl	10YR53 00	75YR58 00	C			Y	0	0	HR	10		M				Y	Imp40 gravelly

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
77	0-28	hcl	10YR32 00						0	0	HR	5							
	28-45	c	10YR53 00	75YR56 00	C			Y	0	0	HR	10		P				Y	Imp45 gravelly
78	0-28	hcl	10YR42 00						0	0	HR	5							
	28-45	c	25Y 52 00	10YR68 00	M			Y	0	0	HR	10		P		Y			
	45-65	c	25Y 51 62	10YR58 00	M			Y	0	0		0		P		Y			Sl. sandy
79	0-25	c	10YR42 32						0	0	HR	3							
	25-50	c	25Y 51 53	10YR56 00	M			Y	0	0	HR	2		P		Y			
	50-70	c	25Y 51 52	10YR68 00	M			Y	0	0		0		P		Y			
80	0-28	hcl	10YR42 00	10YR56 00	F				1	0	HR	5							
	28-55	c	25Y 51 53	10YR58 00	M			Y	0	0	HR	5		P		Y			
	55-70	c	25Y 61 52	10YR58 00	M			Y	0	0	HR	5		P		Y	Y		
81	0-28	c	10YR32 00						1	0	HR	5						Y	
	28-40	c	25Y 53 00	10YR56 00	C			Y	0	0	HR	5		P				Y	
	40-50	hcl	25Y 63 72	10YR58 00	C			Y	0	0	CH	30		M				Y	+5% flint
82	0-25	mcl	10YR41 00						1	0	HR	5							
	25-45	hcl	25Y 52 00	10YR58 00	M			Y	0	0	HR	5		M				Y	Borderline c
	45-65	hcl	10YR53 00	10YR58 62	M			Y	0	0	SLST	20		M				Y	V. calc;Imp65
83	0-27	hcl	10YR32 42						0	0	HR	4							
	27-48	c	25Y 32 00	10YR58 00	M			Y	0	0	HR	5		P					Imp48 gravelly
84	0-25	hcl	10YR32 00						0	0	HR	5						Y	
	25-40	c	10YR52 00	75YR46 00	C			Y	0	0	HR	10		M				Y	Imp40 gravelly
85	0-28	hcl	10YR32 00						0	0	HR	4							
	28-50	c	10YR42 32						0	0	HR	2		M					Imp50 gravelly
86	0-20	hcl	10YR42 00						0	0	HR	5							
	20-40	c	10YR53 00	10YR56 52	M			Y	0	0	HR	5		P					
	40-45	hcl	10YR53 00	10YR56 00	M			Y	0	0	HR	10		M				Y	
87	0-30	hcl	10YR42 00						4	0	HR	15							Imp30 gravelly
88	0-30	hcl	10YR32 00						0	0	HR	5							
	30-35	c	10YR53 00	75YR58 00	C			Y	0	0	CH	15		M				Y	Imp35 gravelly
89	0-20	hcl	10YR42 00						1	0	HR	5							
	20-28	c	10YR53 00						0	0	HR	5		M					
	28-60	c	25Y 51 52	10YR58 00	M			Y	0	0		0		P		Y			
90	0-20	hcl	10YR42 00						1	0	HR	5							
	20-28	c	10YR53 00						0	0	HR	5		M					
	28-60	c	25Y 51 52	10YR58 00	M			Y	0	0		0		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	
91	0-25	hcl	10YR42 00	75YR58 00	M			Y	1	0	HR	5							
	25-60	c	25Y 62 52	10YR56 00	M			Y	0	0	HR	2		P		Y			
92	0-28	hcl	10YR42 00						1	0	HR	5						Y	
	28-55	hcl	25Y 53 51	10YR58 00	C		00MN00 00	Y	0	0	CH	15		M				Y	
	55-80	hcl	25Y 63 00	10YR58 00	M			Y	0	0	CH	30		M				Y	
93	0-20	hcl	10YR32 00						0	0	HR	5							
	20-45	c	10YR53 00	10YR58 52	M			Y	0	0		0		P		Y			
	45-55	c	10YR53 00	10YR58 00	M			Y	0	0	CH	15		P		Y	Y	Q spl	
94	0-28	mcl	10YR43 00						1	0	HR	5						Y	
	28-40	hcl	25Y 53 63	10YR66 00	C			Y	0	0	HR	15		P				Y	+5%chalk;I40
95	0-30	hcl	10YR32 00						0	0	HR	5							
	30-55	c	25 Y52 53	75YR46 00	C			Y	0	0	HR	1		P		Y	Y	Imp55 gravelly	
96	0-30	hcl	10YR42 00						2	0	HR	5							
	30-50	c	10YR53 00	10YR58 00	F		00MN00 00		0	0	HR	10		P					
	50-70	c	10YR62 00	10YR68 00	C		00MN00 00	Y	0	0	HR	5		P		Y		Very heavy	
97	0-20	hcl	10YR32 00						0	0	HR	5							
	20-38	c	10YR53 00	10YR56 52	M			Y	0	0	HR	5		P					
	38-40	hcl	10YR53 00	10YR56 00	M			Y	0	0	HR	15		M				Y	+5%chalk;I40
98	0-28	hcl	10YR42 00						1	0	HR	5							
	28-35	c	10YR53 52	10YR58 00	M			Y	0	0		0		P		Y			
	35-60	c	05GY52 00	10YR68 00	C			Y	0	0		0		P		Y			
99	0-20	hcl	10YR42 00	10YR56 00	C			Y	1	0	HR	5							
	20-55	c	25Y 52 62	10YR58 00	M			Y	0	0	HR	5		P		Y	Y		
	55-70	c	25Y 51 00	10YR58 00	M			Y	0	0	HR	5		P		Y	Y		
100	0-25	hcl	10YR32 00	10YR58 00	C			Y	1	0	HR	5							
	25-60	c	25Y 62 53	75YR58 00	M		00MN00 00	Y	0	0		0		P		Y			
101	0-15	hcl	10YR32 00						1	0	HR	5							
	15-35	c	10YR53 52	10YR58 00	M			Y	0	0	HR	5		P		Y	Y		
	35-90	c	25Y 72 00	10YR56 00	C			Y	0	0	CH	15		P		Y	Y		
102	0-30	mcl	10YR43 00						1	0	HR	5							
	30-65	hcl	10YR42 00	10YR66 00	C		00MN00 00	Y	0	0	HR	5		M				Y	Soft;I65flinty
103	0-20	hcl	10YR42 00						0	0	HR	5							
	20-40	c	10YR52 53	10YR58 00	M			Y	0	0	HR	2		P					
	40-48	c	10YR52 53	10YR58 00	M			Y	0	0	HR	10		P					
	48-90	mcl	10YR64 63	10YR68 00	M			Y	0	0	CH	20		M				Y	+10% hr