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FAREHAM BOROUGH LOCAL PLAN
Land at Meon View Farm, Stubbington
Fareham, Hampshire.

Agricultural Land Classification
ALC Map and Report

September 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

FAREHAM BOROUGH LOCAL PLAN
LAND AT MEON VIEW FARM, STUBBINGTON, FAREHAM, HAMPSHIRE.

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 51.8 ha of land located to the west of Old Street and Cuckoo Lane, including Meon View Farm at Stubbington near Fareham in Hampshire. The survey was carried out during September 1997.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the Fareham Borough Local Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of the FRCA. 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 land use on the site comprised permanent and rough grassland and land set-aside from arable use. Some of the grassland was being used to graze horses. The areas mapped as 'Other land' include farm buildings, dwellings, unmetalled tracks and scrub, partly surrounding an open field drain.

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.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	4.3	9.1	8.3
3a	17.3	36.4	33.4
3b	25.9	54.5	50.0
Other land	4.3	N/A	8.3
Total surveyed area	47.5	100	91.7
Total site area	51.8	-	100

[1] FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of approximately 1 boring per hectare of agricultural land. A total of 46 borings and 4 soil pits were described.

8. The agricultural land on this site has been classified in the range Grade 2 (very good quality) to Subgrade 3b (moderate quality), including a substantial proportion of Subgrade 3a (good quality). Principal limitations to land quality include soil wetness and soil droughtiness.

9. Towards the south west of the site, the land is principally limited by soil droughtiness, with soil wetness also significant in a number of cases. The soils comprise light loam topsoils overlying medium loamy subsoils which, on occasion, exhibit signs of soil wetness. Given the local climate, the combination of soil properties results, overall, in water availability to plants being slightly restricted. Crop growth and yields may therefore be adversely affected. Grade 2 has been mapped as a result.

10. Towards the east and south of the site, the land is principally limited by soil droughtiness. Soils comprise light loamy topsoils overlying similar upper subsoils which become progressively more stony and/or sandy with depth. The stones in the profile inhibit the amount of water that is available for uptake to the extent that this area is mapped as Subgrade 3a on the basis of soil droughtiness. Because of the potential lack of available water, the level and consistency of crop yields are likely to be affected, especially in drier years.

11. Across the majority of the site, principally to the north, the land is limited by soil wetness. The soils comprise loamy topsoils overlying clayey and loamy subsoils. The clayey and some of the loamy subsoil horizons impede soil drainage. The depth to such horizons determines the severity of the soil wetness problem and, therefore, the ALC grade. Soil wetness reduces the versatility of the land in terms of access by machinery (e.g. for cultivations or harvesting) and for grazing if damage to the soil is to be avoided. It also has the effect of reducing the level and consistency of yields by inhibiting crop growth and development. Subgrades 3a and 3b have been mapped in these areas.

FACTORS INFLUENCING ALC GRADE

Climate

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

13. 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).

14. 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.

15. 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.

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 545 039	SU 541 028
Altitude	m, AOD	5	10
Accumulated Temperature	day°C (Jan-June)	1551	1547
Average Annual Rainfall	mm	776	773
Field Capacity Days	days	156	157
Moisture Deficit, Wheat	mm	119	119
Moisture Deficit, Potatoes	mm	116	116
Overall climatic grade	N/A	Grade 1	Grade 1

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. However, the south of the site is in an area shown as being 'exposed', with the north mapped as 'rather exposed' by the Met. Office (unpublished data, 1968). During the survey, there was no evidence of significant exposure across the site, in terms of the impact of wind on perennial vegetation, such as trees and hedgerows. No detailed assessment of exposure was carried out as soil factors are more significant overall in determining land quality at this site. Other local climatic factors such as frost risk are not believed to affect the site.

Site

17. The site lies between approximately 5 and 10m AOD overall. The land rises gently from the west towards the east. Slope gradients within the site are slight and are not sufficient to adversely affect land quality. Other site factors such as microrelief and flooding are also not significant.

Geology and soils

18. The published geological information for the site (BGS, 1970 and 1971) show the north of the site to be underlain by brickearth drift deposits overlying Bracklesham Beds solid deposits. The Bracklesham Beds deposit outcrops to the west of the site, on the lowest lying land. Towards the east and south of the site, plateau gravel drift deposits are mapped. In addition, alluvial deposits are shown in a small area towards the centre of the site.

19. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows it to comprise soils of the Hamble 2 and Wickham 4 associations. The Hamble soils are described as, 'deep stoneless well drained silty soils and similar soils affected by groundwater; over gravel locally. Usually flat land.' (SSEW, 1983). Some of the stony profiles, towards the east of the site fit this description. Towards the north of the site, Wickham 4 soils are mapped. These are described as, 'Slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils, often with brown subsoils.' (SSEW, 1983). Soils of this broad type were encountered towards the north of the site.

AGRICULTURAL LAND CLASSIFICATION

20. 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.

21. 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 II.

Grade 2

22. Land of very good quality has been mapped towards the south west of the site. The land in this area is principally limited by soil droughtiness with soil wetness also being significant in a number of cases. In part, soil pits 2P and 4P (see Appendix II) represent the soil types observed.

23. The soils in this area are variable and are derived from the Bracklesham Beds deposits. The topsoils are either fine sandy loam or fine sandy silt loam. The upper subsoils are similar to the topsoils or occasionally medium sandy loam or sandy clay loam. The lower subsoils either remain sandy, sandy clay loam or loamy fine sand, or pass to medium and heavy silty clay loams. As a whole the profiles are generally relatively stone free, up to a maximum of 5% flints by volume in the topsoil and upper subsoil and fewer in the lower subsoil. The subsoil horizons were gleyed from between 33 and 65cm and, where of sandy clay loam or heavy silty clay loam texture were poorly structured and slowly permeable. Given the local climate, these drainage characteristics result in soils being assigned to Wetness Classes II and III. This gives rise to wetness grades of 1 and 2, when the light, easily workable topsoils are taken into account. The sandy nature of the soils restricts the availability of soil moisture to a growing crop such that Grade 2 is appropriate for this land on the basis of minor soil droughtiness.

24. Soil wetness restricts the versatility of the land by limiting the opportunities for cultivation or grazing without damaging the soil, as well as restricting plant growth and the level and consistency of yields. Soil droughtiness has the effect of causing plants to suffer drought stress thereby yields may be adversely affected and less consistent.

Subgrade 3a

25. Land of good quality has been mapped in two separate units across the site. Principal limitations to land quality in these areas are soil droughtiness and soil wetness. Soils are characterised by the soil pits, 2P and 3P (see Appendix II).

26. In these areas, soils are of two distinctly different types. Towards the east and south east of the site, the soils comprise a fine sandy silt loam or medium clay loam topsoil which overlies a similar, or more sandy (medium sandy loam) upper subsoil, which was often impenetrable to the soil auger. Soil pit 3 confirmed that this passes to progressively more sandy lower subsoil horizons comprising sandy clay loam and coarse sandy loam textures. The stone content varies throughout the profile. In the topsoil stone contents in the range 8 to 25% flints (including up to 5% flints >2cm) by volume were measured. In the upper subsoil 32% flints by volume (15% >2cm) were measured at the pit observation 3P. The third horizon contained 60% flints (35%>2cm) by volume with the sandy and gritty lower subsoil containing 51% flints >2mm and 25%>2cm, by volume. All the subsoil stone measurements

relate to the pit, 3P, as the other observations were impenetrable to the soil auger in the upper subsoil due, in part to the dry soil conditions encountered during the survey and the stone contents encountered. No evidence of soil wetness was observed in these free draining (Wetness Class I) profiles derived from the plateau gravel drift deposits. In the relatively mild and wet local climate, this combination of soil textures and stone contents results in Subgrade 3a being appropriate on the basis of a soil droughtiness limitation, the effects of this are described above in para. 24. The effects of soil droughtiness on land mapped as Subgrade 3a is more severe than that classified as Grade 2.

27. The second soil type encountered within this subgrade is principally located to the west of Meon View Farm and is represented by the pit observation, 2P. The soils in this area comprise a fine sandy silt loam topsoil, which overlies subsoil horizons of sandy clay loam and clay. Evidence of soil wetness occurs throughout the profile. The topsoil and sandy clay loam upper subsoil are gleyed. The heavier sandy clay loam and clay lower subsoils are, in addition, poorly structured and slowly permeable, thereby impeding soil drainage. Significant seasonal waterlogging is likely to occur, which, given the local climatic parameters causes these soils to be appropriately placed in Wetness Class IV. Excessive soil wetness is partially offset by the light, easily workable topsoils and Subgrade 3a is therefore mapped. The effects of soil wetness are described in para. 24. In these areas they are slightly more significant than on the land classified as Grade 2.

Subgrade 3b

28. Land of moderate quality has been mapped in a single unit towards the north of the site. The principal limitation in this area is soil wetness. Soils in this mapping unit are characterised by the soil pit observation 1P.

29. Across the majority of this unit, the soils are of a single type. They mostly comprise a medium or heavy clay loam topsoil overlying poorly structured gleyed and slowly permeable clay at shallow depth, with an occasional thin heavy clay loam upper subsoil horizon. The profiles are commonly stoneless, but occasionally, including the pit observation, 1P, up to 20% flints by volume were measured in the upper subsoil and the upper part of the clay lower subsoil. The stones were insufficient to improve the drainage of the clay. Given the local climate, the shallow depth of the slowly permeable horizon is such that Wetness Class IV is appropriate, since prolonged seasonal wetness is likely to occur. Subgrade 3b is mapped given the slightly heavier topsoil textures. The effects of soil wetness are described in para. 24. However, Subgrade 3b land is less versatile than that classified as Subgrade 3a or Grade 2, because the limitations are more severe, ie access restrictions are greater and crop yields are likely to be adversely affected in most years. Occasional observations of slightly better quality have been included in this unit as they were of too scattered a distribution to be mapped separately.

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SOURCES OF REFERENCE

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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 DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

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

Boring Header Information

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

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

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

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

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

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

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

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

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column:

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN**:	Soil erosion risk
EXP:	Exposure limitation	**FROST**:	Frost prone	**DIST**:	Disturbed land
CHEM:	Chemical limitation				

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

OC:	Overall Climate	**AE**:	Aspect	**ST**:	Topsoil Stoniness
FR:	Frost Risk	**GR**:	Gradient	**MR**:	Microrelief
FL:	Flood Risk	**TX**:	Topsoil Texture	**DP**:	Soil Depth
CH:	Chemical	**WE**:	Wetness	**WK**:	Workability
DR:	Drought	**ER**:	Erosion Risk	**WD**:	Soil Wetness/Droughtiness
EX:	Exposure				

Soil Pits and Auger Borings

1. **TEXTURE**: soil texture classes are denoted by the following abbreviations:

S:	Sand	**LS**:	Loamy Sand	**SL**:	Sandy Loam
SZL:	Sandy Silt Loam	**CL**:	Clay Loam	**ZCL**:	Silty Clay Loam
ZL:	Silt Loam	**SCL**:	Sandy Clay Loam	**C**:	Clay
SC:	Sandy Clay	**ZC**:	Silty Clay	**OL**:	Organic Loam
P:	Peat	**SP**:	Sandy Peat	**LP**:	Loamy Peat
PL:	Peaty Loam	**PS**:	Peaty Sand	**MZ**:	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:
M: Medium (<27% clay) **H**: Heavy (27-35% clay)

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

3. **MOTTLE ABUN**: Mottle abundance, expressed as a percentage of the matrix or surface described:

F: few <2% **C**: common 2-20% **M**: many 20-40% **VM**: very many 40% +

4. **MOTTLE CONT**: Mottle contrast:

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

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

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

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

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

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

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	**WK**:	weakly developed	**MD**:	moderately developed
	ST:	strongly developed		
Ped size	**F**:	fine	**M**:	medium
	C:	coarse		
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	**FM**: firm	**EH**: extremely hard
VF: very friable	**VM**: very firm	
FR: friable	**EM**: extremely firm	

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

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	SU54900420	SAS	N	1			1	1	56	-62	56	-59	4				DR	3A	IMP 30 SEE 3P
2	SU54800410	SAS	W	1	28	38	4	3A		0		0					WE	3A	
3	SU54900410	SAS	W	1	30	40	4	3B		0		0					WE	3B	
4	SU54700400	SAS	N	1	25	25	4	3B		0		0					WE	3B	
5	SU54800440	SAS	NW	1	30	30	4	3B		0		0					WE	3B	
6	SU54500390	SAS	W	1	30	30	4	3B		0		0					WE	3B	
7	SU54600390	SAS	W	1	30	30	4	3B		0		0					WE	3B	
8	SU54700390	SAS	N	1	35	35	4	3B		0		0					WE	3B	
9	SU54500380	SAS	SW	3	30	30	4	3B		0		0					WE	3B	
10	SU54600380	SAS	S	1	30	30	4	3B		0		0					WE	3B	
11	SU54700380	SAS			28	28	4	3B		0		0					WE	3B	
12	SU54400370	SAS			30	65	3	2	142	24	121	6	2				WD	2	
13	SU54500370	SAS	NW	2	30	30	4	3B		0		0					WE	3B	
14	SU54600370	SAS	NW	1	30	30	4	3B		0		0					WE	3B	
15	SU54700370	SAS			0	30	4	3B		0		0					WE	3B	
16	SU54400360	PGR	NW	2	30	30	4	3B		0		0					WE	3B	
17	SU54500360	PGR	W	2	32	32	4	3B		0		0					WE	3B	
18	SU54600360	PGR	W	1	52	52	3	2	129	11	99	-16	3A				DR	3A	
19	SU54300350	PGR	W	1	0	28	4	3B		0		0					WE	3B	
20	SU54400350	PGR	W	1	0	28	4	3B		0		0					WE	3B	
21	SU54500350	PGR	W	1	0		2	1	65	-53	65	-50	4				DR	3A	IMP 35 SEE 3P
22	SU54600350	RGR	NW	1			1	1	63	-52	63	-52	4				DR	3A	IMP 30 SEE 3P
23	SU54300340	PGR	SW	3	0	30	4	3B		0		0					WE	3B	
24	SU54400340	PGR			0	37	4	3B		0		0					WE	3B	IMP 55 SEE 3P
25	SU54500340	PGR			0	45	4	3B		0		0					WE	3B	SEE 1P NEARBY
27	SU54300330	PGR	NW	2	28	40	4	3A		0		0					WE	3A	
28	SU54400330	PGR	W	1	25	25	4	3B	120	2	97	-18	3A				WE	3B	
31	SU54200320	PGR	W	2	25	40	4	3A	140	22	115	0	2				WE	3A	SEE 2P
32	SU54300320	PGR	W	2	30	55	3	3A	133	15	107	-8	3A				WD	3A	
33	SU54400320	PGR			30	40	4	3A	140	22	117	2	2				WE	3A	BDR 3B
34	SU54500319	PGR					1	1	46	-72	46	-69	4				DR	3A	IMP 30 SEE 3P
35	SU54200310	RGR	W	1	0		4	3B		0		0					WE	3B	IMP35 SEE1P/3P
36	SU54300312	PGR			52	52	3	2	152	34	128	13	1				WE	2	
37	SU54400310	RGR	N	2	0		1	1	82	-36	82	-33	3B				DR	3A	IMP 50 SEE 3P
38	SU54100300	PGR			60	75	2	1	133	15	112	-3	2				DR	2	
39	SU54200300	PGR	N	2	33	45	3	2	135	17	111	-4	2				WD	2	
40	SU54300300	RGR	W	1	0		2	1	46	-72	46	-69	4				DR	3A	IMP 30 SEE 3P
41	SU54000290	SAS	NW	1	65	65	2	1	155	37	125	10	2				DR	2	BORDER 1
42	SU54100290	SAS			48	48	3	2	125	7	121	6	2				WD	2	
43	SU54200290	PGR			28	28	4	3A		0		0					WE	3A	
44	SU54300290	PGR					1	1	57	-61	57	-58	4				DR	3A	IMP 35 SEE 3P
45	SU53900280	SAS	SW	3	40		2	1	166	48	118	3	2				DR	2	

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
46	SU54000280	SAS			70		1	1	179	61	118	3	2				DR	2	SEE 4P
47	SU54100280	SAS					1	1	59	-59	59	-56	4				DR	3A	IMP 40 SEE 3P
48	SU54200280	SAS			42		1	1	94	-24	95	-20	3B				DR	3A	IMP 52 SEE 3P
50	SU54000270	SAS					1	1	81	-37	81	-34	3B				DR	3A	IMP 40 SEE 3P
1P	SU54530338	PGR			0	30	4	3B		0		0					WE	3B	PIT 60 AUG 80
2P	SU54200320	PGR	S	3	0	40	4	3A		0		0					WE	3A	PIT 70 AUG 100
3P	SU54200280	SAS					1	1	111	-7	107	-8	3A				DR	3A	PIT 90 ROOTS
4P	SU54000380	SAS	W	1	48		1	1	94	-24	78	-37	3B				DR	3B	PIT100 AUG120

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	FSZL	10YR42						3	0	HR	10						
	25-30	SCL	10YR43						0	0	HR	15		M				IMP FLINTS 30
2	0-28	FSZL	10YR42 43						2	0	HR	5						
	28-38	HCL	10YR42	75YR54	C			Y	0	0	HR	5		M				BORDER SCL
	38-70	C	25Y 63 64	75YR58	M			Y	0	0		0		P		Y		PLASTIC
3	0-30	MCL	10YR42						0	0	HR	5						WITH FINE SAND
	30-40	HCL	25Y 52	75YR56	C		MN	Y	0	0	HR	5		M				
	40-70	C	25Y 53 61	75YR58	M		MN	Y	0	0	HR	2		P		Y		
4	0-25	HCL	10YR43						0	0	HR	1						
	25-70	C	25Y 63 71	75YR68	M			Y	0	0		0		P		Y		PLASTIC
5	0-30	MCL	10YR43						0	0	HR	2						
	30-70	C	25Y 63 71	75YR68	M			Y	0	0		0		P		Y		PLASTIC
6	0-30	HCL	10YR43						0	0	HR	1						
	30-70	C	25Y 61 62	75YR56	M			Y	0	0		0		P		Y		
7	0-30	HCL	10YR42						0	0	HR	2						
	30-70	C	25Y 62 61	75YR56	M		MN	Y	0	0	HR	2		P		Y		
8	0-35	HCL	10YR42						0	0	HR	2						
	35-70	C	25Y 62 61	75YR56	M		MN	Y	0	0	HR	2		P		Y		PLASTIC
9	0-30	HCL	25Y 42	10YR56	F				2	0	HR	8						
	30-80	C	25Y 62	10YR58 68	M	D		Y	0	0	HR	5		P		Y		
10	0-30	HCL	10YR43						0	0	HR	1						
	30-70	C	25Y 53 71	75YR68	M			Y	0	0		0		P		Y		PLASTIC
11	0-28	HCL	10YR43						0	0	HR	2						
	28-70	C	05Y 71	75YR56	M			Y	0	0		0		P		Y		PLASTIC
12	0-30	FSZL	10YR42	10YR46	F	F		N	2	0	HR	8						
	30-55	MCL	25Y 41	10YR46	C	F		Y	0	0	HR	5		M				WITH MED SAND
	55-65	MCL	25Y 53	10YR56	C	D	MN	Y	0	0	HR	5		M				WITH MED SAND
	65-120	C	25Y 52 62	10YR58	M	D		Y	0	0	HR	5		P		Y		
13	0-30	MCL	10YR42						3	0	HR	8						
	30-70	C	25Y 61	10YR58 68	M	D		Y	0	0	HR	5		P		Y		PLASTIC
14	0-30	MCL	10YR42				MN		3	0	HR	8						
	30-80	C	25Y 61	10YR58 68	M	D		Y	0	0	HR	5		P		Y		
15	0-30	MZCL	25Y 32	10YR46	C	F		Y	2	0	HR	5						
	30-80	C	25Y 61 52	10YR58	M	D		Y	0	0	HR	5		P		Y		
	80-120	C	25Y 61	10YR58	M	D		Y	0	0		0		P		Y		PLASTIC

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
16	0-30	MZCL	10YR42						0	0	HR	2							
	30-45	HZCL	10YR53	10YR58	C			Y	0	0	HR	2		P			Y		
	45-90	ZC	10YR54 53	10YR58	M			Y	0	0		0		P			Y		
17	0-32	MCL	10YR42						0	0	HR	2						N	
	32-40	C	25Y 53 61	10YR58	C			Y	0	0		0		P			Y		
	40-55	C	25Y 71	75YR68	M			Y	0	0		0		P			Y		
	55-80	C	25Y 71	75YR68	M			Y	0	0		0		P			Y		SLIGHTLY SANDY
18	0-25	MSL	10YR42						2	0	HR	5							
	25-52	SCL	10YR43						0	0	HR	10		M					
	52-60	HCL	10YR53	10YR58	C			Y	0	0	HR	5		P			Y		SLIGHTLY SANDY
	60-80	SCL	10YR53	10YR58	C			Y	0	0	HR	5		P			Y		
	80-120	SCL	10YR73	75YR68	M			Y	0	0		0		P			Y		
19	0-28	MZCL	10YR41 42	10YR58	C			Y	0	0		0							
	28-70	C	25Y 71 72	75YR68	M			Y	0	0		0		P			Y		PLASTIC
20	0-28	MCL	10YR41 42	10YR58	C			Y	0	0	HR	2							BORDER HCL
	28-70	C	25Y 71	75YR58	M			Y	0	0		0		P			Y		PLASTIC
21	0-25	FSZL	10YR42	10YR58	C			Y	3	0	HR	8							BORDER MCL
	25-35	MCL	10YR53	10YR58	C			Y	0	0	HR	15		M					IMP FLINTS 35
22	0-25	FSZL	10YR42						0	0	HR	2							
	25-30	FSZL	10YR43						0	0	HR	15		M					IMP FLINTS 30
23	0-30	MCL	10YR42	75YR56	C			Y	2	0	HR	7							WITH FINE SAND
	30-60	C	25Y 51 53	10YR58 68	M		MN	Y	0	0	HR	7		P			Y		
24	0-25	MCL	10YR42	10YR58	C			Y	2	0	HR	5							
	25-37	MCL	10YR42 52	10YR58	C			Y	0	0	HR	5		M					
	37-55	C	25Y 53	10YR58 56	M		MN	Y	0	0	HR	5		P			Y		IMP FLINTS 55
25	0-27	MCL	10YR42	75YR46	C			Y	2	0	HR	7							SEE 1P
	27-45	HCL	10YR63 53	10YR58 46	C		MN	Y	0	0	HR	10		M					
	45-55	HCL	10YR53 63	10YR58	M		MN	Y	0	0	HR	5		P			Y		
	55-75	C	10YR62 61	75YR58	M			Y	0	0	HR	10		P			Y		PLASTIC
27	0-28	FSZL	10YR42						0	0	HR	5							
	28-40	SCL	25Y 52	10YR58	C	D		Y	0	0	HR	5		M					INC FINE SAND
	40-60	C	25Y 52 53	10YR58	M	D		Y	0	0		0		P			Y		SL SANDY
	60-90	C	05Y 62	75YR58	M	D		Y	0	0		0		P			Y		PLASTIC
28	0-25	MCL	10YR42						5	1	HR	10							
	25-80	C	05Y 62	10YR58	M	D		Y	0	0	HR	5		P			Y		
	80-120	C	05Y 61	75YR58	M	D		Y	0	0		0		P			Y		SOME FINE SAND

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
31	0-25	FSZL	10YR32 42						0	0	HR	2							SEE 2P BRDR MSZL
	25-40	SCL	10YR42	10YR46	C	D		Y	0	0		0		M					INC FINE SAND
	40-70	SCL	05Y 52	75YR58	M	D		Y	0	0		0		P		Y			HEAVY SCL
	70-120	C	05Y 61	75YR68	M	D		Y	0	0		0		P		Y			SLIGHTLY SANDY
32	0-30	SCL	10YR41						0	0	HR	3							
	30-55	SCL	10YR42 52	10YR56	C	D		Y	0	0		0		M					
	55-90	C	05Y 52	75YR58	M	D		Y	0	0		0		P		Y			SLIGHTLY SANDY
	90-120	SCL	25Y 52	75YR58	M	D		Y	0	0		0		P		Y			
33	0-30	FSZL	10YR41 42						0	0	HR	5							BORDER MCL
	30-40	MCL	10YR52	10YR56	C	F		Y	0	0	HR	5		M					
	40-90	C	25Y 52 53	10YR58	M	D		Y	0	0		0		P		Y			SLIGHTLY SANDY
	90-120	C	05Y 61	75YR58	M	D		Y	0	0		0		P		Y			PLASTIC
34	0-30	MCL	10YR43						5	0	HR	15							IMP FLINTS 30
35	0-30	MCL	10YR42	10YR58	C			Y	3	0	HR	10							BORDER HCL
	30-35	C	25Y 53	75YR58	C			Y	0	0	HR	15		P					IMP FLINTS 35
36	0-30	FSZL	10YR42	75YR56	C			Y	0	0	HR	10							ROOT MOTTLES
	30-52	FSZL	10YR42						0	0	HR	2		M					
	52-105	C	05Y 63	75YR68	M		MN	Y	0	0	HR	2		P		Y			SLIGHTLY SANDY
	105-120	SCL	05Y 62	10YR68	M			Y	0	0		0		P		Y			
37	0-25	FSZL	10YR41	75YR46	C			Y	3	0	HR	10							
	25-50	MSL	10YR63	10YR58	C			Y	0	0	HR	15							IMP FLINTS 50
38	0-35	FSL	10YR43						2	0	HR	8							
	35-45	MSL	10YR46 56						0	0	HR	2		M					
	45-60	MSL	75YR56	10YR66	C	D		S	0	0	HR	2		M					
	60-75	MZCL	25Y 61 71	10YR68	M	D		Y	0	0		0		M					
	75-120	HZCL	25Y 61 71	10YR68	M	D		Y	0	0		0		P		Y			
39	0-33	FSL	10YR42						0	0	HR	5							
	33-45	FSZL	25Y 52	10YR56	C	D		Y	0	0	HR	5		M					
	45-90	HZCL	25Y 61	10YR68	M	D		Y	0	0		0		P		Y			
	90-120	SCL	25Y 62	75YR58	M	D		Y	0	0		0		P		Y			
40	0-30	MCL	10YR53	10YR58	C			Y	6	0	HR	15							IMP FLINTS 30
41	0-35	FSZL	10YR33						0	0	HR	2						Y	
	35-65	SCL	10YR43	10YR46	F	D		N	0	0	HR	5		M					
	65-80	SCL	10YR43	10YR58	C	D	MN	Y	0	0	HR	2		P		Y			HEAVY SCL
	80-120	SCL	10YR63 64	10YR56	M	D	MN	Y	0	0		0		P		Y			
42	0-35	FSZL	10YR34						0	0	HR	5							
	35-48	SCL	10YR44						0	0	HR	2		M					
	48-65	SCL	10YR53	10YR46	C	D		Y	0	0		0		P		Y			HEAVY SCL
	65-90	C	25Y 71	75YR46	M	D		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	
43	0-28	FSZL	10YR42						1	0	HR	8							
	28-80	C	25Y 61	10YR68	M	D		Y	0	0	HR	5		P			Y		SOME FINE SAND
44	0-28	FSZL	10YR41						2	0	HR	25							
	28-35	FSZL	10YR42						0	0	HR	30		M					IMP FLINTS 35
45	0-40	FSL	10YR33						0	0	HR	2							
	40-50	FSL	10YR42	000C00	M			Y	0	0	HR	2		M					
	50-78	LFS	10YR56	000C00	M			Y	0	0	HR	2		M					
	78-120	SCL	25Y 63	000C00	M			Y	0	0		0		P			Y		
46	0-35	FSL	10YR33						0	0	HR	2							SEE 4P
	35-50	FSL	10YR44	000C00	C			S	0	0	HR	2		M					
	50-70	LFS	10YR54	000C00	C			S	0	0		0		M					
	70-120	LFS	25Y 63	000C00	C			Y	0	0		0		M					
47	0-30	SCL	10YR42						5	0	HR	10							
	30-40	SCL	10YR44						0	0	HR	15		M					IMP FLINTS 40
48	0-30	FSZL	10YR43						3	0	HR	7							SEE 3P
	30-42	SCL	10YR43						0	0	HR	5		M					
	42-52	HZCL	10YR53	000C00	C		MN	Y	0	0	HR	5		M					IMP FLINTS 52
50	0-30	FSZL	10YR43						2	0	HR	4							
	30-40	FSL	10YR54						0	0	HR	5		M					IMP FLINTS 40

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1P	0-22	MCL	10YR41	10YR46	C			Y	2	0	HR	8							
	22-30	HCL	25Y 42	75YR46	C			Y	12	5	HR	20	WKCSAB	VM M					NOTSPL TOOPOROUS
	30-40	C	05Y 52	75YR68	M		05Y 61	Y	0	0	HR	20	WKCSAB	VM P		Y		Y	TENDING CPR
	40-75	C	05Y 61 71	75YR68	M		25Y 63	Y	0	0	HR	10	MDCPR	VM P		Y		Y	PIT 60 AUG 75
2P	0-20	FSZL	10YR42	10YR46	C			Y	0	0	HR	10							
	20-40	SCL	10YR41	75YR66	C		MN	Y	0	0	HR	10	WKCSAB	FR M					NOTSPL TOOPOROUS
	40-50	SCL	05Y 42	75YR68	M		05Y 53	Y	0	0	HR	2	MDVCPR	VM P		Y		Y	
	50-100	C	05Y 62	75YR68	M		05Y 61	Y	0	0	HR	2	WVCSAB	VM P		Y		Y	PIT 70 AUG 100
3P	0-38	FSZL	10YR33						2	0	HR	8							
	38-56	MCL	10YR33						15	5	HR	32	MCSAB	FR M					SL SANDY SIEVED
	56-75	SCL	10YR34						35	15	HR	60		M					WET SIEVED
	75-90	CSL	10YR44						25	0	HR	51		M					VFEWROOTS SIEVED
4P	0-35	MSL	10YR42						4	2	HR	8							
	35-48	LMS	10YR56						6	2	HR	15	MDCOAB	FR G					
	48-120	MS	25Y 64 72	10YR58	C			Y	0	0	HR	2	WKCOAB	VF G					INC FE COLOURS