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EAST HAMPSHIRE DISTRICT LOCAL PLAN
Land NE of Heath Farm, Petersfield

Agricultural Land Classification
ALC Map and Report

July 1998

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

EAST HAMPSHIRE DISTRICT LOCAL PLAN
LAND NE OF HEATH FARM, PETERSFIELD

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 39.9 hectares of land located north-east of Heath Farm, south-east of Petersfield, Hampshire. The survey was carried out during July 1998.

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 its statutory input to the second review of the East Hampshire District 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 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 the agricultural land use on the site consisted of permanent and ley grassland, cereals, maize and scrubland. The areas mapped as 'Other land' include farm buildings and tracks and 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 site are summarised in Table 1 overleaf.

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. In total 43 borings and 3 soil pits were described.

8. The site has mainly been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality) land with a small area of Grade 2 (very good quality agricultural land). The soil profiles are variable across the site and the principal limitations are soil droughtiness and soil texture. Soil wetness is restricting very occasionally.

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

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	2.9	7.4	7.3
3a	17.7	45.4	44.4
3b	18.4	47.2	46.1
Other land	0.9	N/A	2.2
Total surveyed area	39.0	100	97.8
Total site area	39.9	-	100

9. Land which is assigned to Grade 2 comprises deep, virtually stoneless, well drained, sandy soils. These are restricted in their agricultural use to a minor extent by topsoil texture and/or soil droughtiness limitations. The topsoils are light in texture, being loamy medium sands, or very occasionally medium sandy loams. Where loamy medium sand topsoils occur, this itself causes land to be limited to a maximum of Grade 2. A topsoil texture limitation means the land is likely to be easily worked, but susceptible to soil erosion. In addition, they may be prone to surface capping and slaking, thereby forming compacted layers if cultivated or traversed when wet. A soil droughtiness limitation also occurs due to the interaction between these freely draining, sandy soils, and the prevailing climate which causes profile available water to be insufficient in some years to fully meet crop needs, such that Grade 2 is appropriate on the basis of this minor limitation. Yield potential may be slightly affected as a result.

10. Subgrade 3a land comprises soils which are similar to, or lighter than, those described in the Grade 2 unit with upper subsoils often consisting of medium sand textures. Soil droughtiness is the major limitation within this unit which due to the higher sand content will be more masked than for the Grade 2 land and result in lower and less consistent crop yields. Occasional borings are restricted to Subgrade 3a quality on the basis of a soil wetness limitation where the soils are heavier in texture and are not as well drained. Soil wetness adversely affects crop growth or imposes restrictions on cultivations or grazing by livestock.

11. The majority of the land within the Subgrade 3b unit (moderate quality agricultural land) is limited by topsoil texture alone. Most of the soils have medium sand topsoils which means that they are not eligible for Grades 1, 2 or 3a. Due to the medium sand topsoils these soils are especially prone the adverse effects described in paragraph 9 above. In particular they are very susceptible to drought stress which is exaggerated by the coarse nature of the topsoils. Excessive drying after sowing may result in poor germination and establishment and a consequent loss of yield.

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.

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is believed not to be at risk from frost or exposure. The site is climatically Grade 1.

Table 2: Climatic and altitude data

Factors	Units	Values	Values	Values
Grid reference	N/A	SU 763 227	SU 767 231	SU 763 226
Altitude	m,AOD	55	55	59
Accumulated Temperature	day°C	1481	1481	1477
Average Annual Rainfall	mm	944	939	949
Field Capacity Days	days	207	206	208
Moisture Deficit, Wheat	mm	96	96	95
Moisture Deficit, Potatoes	mm	87	87	86
Overall Climatic Grade	N/A	Grade 1	Grade 1	Grade 1

Site

17. The majority of the site lies at an altitude of between 50m and 60m AOD and is flat or very gently sloping. Nowhere on the site does gradient, microrelief or flood risk limit land quality.

18. Across localised parts of the site, notably in the Subgrade 3b area in the far west, there was some evidence of slight soil erosion. The light topsoil textures have allowed a small extent of water erosion to occur, with small scale rills developing mid-slope and the resultant material being deposited on the colluvial footslopes. However, the extent of this phenomenon was not thought to be sufficient to cause the land utilisation, and therefore the ALC grade, to be affected.

Geology and soils

19. The published geological information for the area (BGS, 1975 and 1958) shows the majority of the site to be underlain by Folkstone Beds deposits which consist of sand and sandstone. In addition to this, Sandgate deposits are likely to occur along the extreme northern edge of the site.

20. The most recently published soil information for the area (SSEW, 1983) shows the Fyfield Association to cover the whole site. These soils are described as 'Deep well drained often stoneless coarse loamy and sandy soils. Some fine loamy over clayey soils. Risk of water erosion.' (SSEW, 1983).

21. Upon detailed field examination, soils similar to the above description were found to exist across the survey area.

Agricultural Land Classification

22. The details of the classification of the site and total area surveyed are shown on the attached ALC map and the area statistics of each grade are given in Table 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 II.

Grade 2

24. A limited area of very good quality agricultural land (2.9 hectares) has been mapped in the central south-east of the site. The land is restricted to a minor extent by a combination of soil droughtiness and/or soil texture. A wide range of crops producing a generally high level of yield would be expected, assuming a good standard of management.

25. The soils are found to comprise non-calcareous, loamy medium sand, or very occasionally medium sandy loam topsoils. These may contain up to 5% total flints by volume. Upper subsoils comprise similar textures and are similarly stony, although lower subsoil horizons are found to be variable, some passing to sandy clay loam or heavy clay loam. Relatively abrupt textural changes are not uncommon. Many subsoil horizons consist of interbedded and intermixed sand and clay. The majority of profiles within this mapping unit exhibit evidence of slight soil wetness, being gleyed from variable depths below the topsoil (between 37 and 90 cm). Such characteristics principally arise from a fluctuating watertable, rather than slowly permeable horizons. These soils are assigned to Wetness Class I, Wetness Grade 1. Soil pit 3 (see Appendix II) is representative of the soils described within this Grade 2 mapping unit.

26. The land assigned to Grade 2 is limited to a minor extent as a result of the light topsoil textures (a topsoil texture limitation) and/or soil droughtiness. Where loamy medium sand topsoils occur, the land is likely to be easily worked, but susceptible to drought stress, soil erosion and some soil structural problems. As a result, land is not eligible for Grade 1. In addition, the combination of these sandy soils and the prevailing climatic conditions results in a slight soil droughtiness restriction. Moisture balance calculations indicate that soil moisture reserves may not be sufficient to fully meet the demands of a growing crop throughout the year. Consequently, the crop may experience drought stress during the drier parts of the growing season.

Subgrade 3a

27. Just under half of the survey area is mapped as good quality agricultural land (Subgrade 3a). The soil profiles are variable within this unit. Soil droughtiness is the major

limitation with soil wetness being overriding occasionally.

28. Areas affected by soil droughtiness commonly have similar, though significantly more sandy and better drained, profiles than those described above. Topsoils comprise mainly non-calcareous, stoneless loamy medium sand or medium sandy loam textures. These rest upon similar or lighter (medium sand) upper subsoils which may contain up to 3% total flints by volume. Lower subsoils vary considerably in texture and horizon sequences from medium sands to sandy clay loam, with a combination of textural classes in between. The deep, sandy, well drained nature of these soils means that Wetness Class I is considered appropriate. On the whole, the profiles often have restricted reserves of available water, such that there is a greater risk of drought stress to plants in most years compared to the soils within the Grade 2 unit. Very occasional borings within this unit were impenetrable to the soil auger at moderate depths.

29. Soil wetness is limiting at occasional locations within the Subgrade 3a mapping unit. The topsoils and upper subsoils are similar to those already described. However, lower subsoils comprise clayey textures which are dense and have low porosity (from depths between 60 and 65cm). Such slowly permeable subsoils impede drainage causing gleying to occur at shallow depths in the profiles (between 30cm and 35cm). The combination of soil textures and local climatic regime places the soils in Wetness Class III. The utilisation of the land is likely to be restricted because the number of days when cultivation and/or grazing can occur without causing structural damage to the soil will be reduced. However, the light topsoil textures are advantageous since the soils are more workable than those with a higher clay content, consequently, Subgrade 3a is appropriate for this land.

Subgrade 3b

30. The remainder of the survey area is mapped as Subgrade 3b (moderate quality) on the basis of a topsoil texture limitation. The soils within this unit are excessively well drained, deep and sandy.

31. Topsoils are stoneless and very light in texture comprising medium sand. These overlie similar upper subsoils. Lower subsoils are variable in texture ranging from medium sand to clay (with a variety of textural classes in between which reflect the interbedded nature of the underlying lithology). Wetness Class I is considered appropriate for the soils within this mapping unit. Occasional borings were impenetrable to the auger at moderate depths (50cm). Soils with medium sand topsoils are not eligible for Grades 1, 2 or Subgrade 3a. In particular they are very susceptible to drought stress which is exaggerated by the coarse nature of the topsoils. Excessive drying after sowing may result in poor germination and establishment and a consequent loss of yield. The risk of erosion, capping and slaking, will also be greater than for higher quality land on the site.

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SOURCES OF REFERENCE

British Geological Survey (1975) Sheet No. 300, Alresford 1:50,000 scale (Drift Edition). BGS: London.

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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.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass that can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations that restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL 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	**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 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	SU76602310	SCB					1	1	76	-20	60	-27	3A				TX	3B	
2	SU76702310	PGR			30	58	3	3A	84	-12	71	-16	3A				TX	3B	
3	SU76502300	SCB					1	1	85	-11	58	-29	3A				TX	3B	SEE 1P
4	SU76602300	PGR					1	1	82	-14	65	-22	3A				TX	3B	SEE 1P
5	SU76702300	PGR					1	1	82	-14	65	-22	3A				TX	3B	SEE 1P
7	SU76502290	SCB					1	1	85	-8	62	-25	3A				TX	3B	PTY TOPSOIL
8	SU76602290	PGR					2	2	69	-27	52	-35	3B				TX	3B	Q W/T 70CM
9	SU76702290	PGR					1	1	78	-18	62	-25	3A				TX	3B	SEE 1P
10	SU76822286	PGR			65		1	1	97	1	75	-12	3A				DR	3A	Q DIST DRAIN
11	SU75782272	MZE					1	1	74	-22	57	-30	3B				TX	3B	SEE 2P
12	SU75902282	MZE			30	60	3	3A	116	20	100	13	2				WE	3A	Q DIST DRAIN
13	SU76002280	LEY					1	1	74	-22	57	-30	3B				TX	3B	SEE 2P
14	SU76102280	OAT					1	1	83	-13	66	-21	3A				DR	3A	
15	SU76202280	OAT					1	1	91	-5	75	-12	3A				DR	3A	
16	SU76302280	OAT					1	1	84	-12	67	-20	3A				DR	3A	
17	SU76402280	PGR					1	1	58	-38	58	-29	3B				DR	3B	IMP 50
18	SU76502280	PGR			37		1	1	142	46	98	11	1				TX	2	
19	SU76602280	PGR					1	1	85	-11	68	-19	3A				DR	3A	
20	SU76702280	PGR					1	1	84	-12	67	-20	3A				DR	3A	
21	SU76802280	MZE			85		1	1	128	32	89	2	2				DR	2	GL 70 SEE 3P
22	SU75802268	MZE					1	1	58	-38	62	-25	3B				DR	3A	I65 HARD/DRY
23	SU75902270	MZE			35	65	3	3A	105	9	89	-2	2				WE	3A	ORGANIC T/S
24	SU75982268	PGR					1	1	73	-23	56	-31	3B				TX	3B	SEE 2P
24A	SU76062270	PGR					1	1	72	-24	55	-32	3B				TX	3B	SEE 2P
25	SU76102270	OAT					1	1	79	-17	62	-25	3A				TX	3B	SEE 2P
26	SU76202270	OAT					1	1	94	-2	64	-23	3A				DR	3A	
27	SU76322270	OAT					1	1	82	-14	65	-22	3A				DR	3A	
28	SU76402270	OAT					1	1	130	34	92	5	2				DR	2	SEE 3P
29	SU76502270	OAT					1	1	81	-15	65	-22	3A				DR	3A	
30	SU76602270	OAT					1	1	82	-14	65	-22	3A				DR	3A	
31	SU76702270	OAT					1	1	94	-2	63	-24	3A				DR	3A	
32	SU75702260	PGR					1	1	88	-8	74	-13	3A				TX	3B	SEE 2P
33	SU75802260	PGR					1	1	58	-38	61	-26	3B				TX	3B	I70 ORG T/S
34	SU75902260	PGR			55		1	1	66	-30	58	-29	3B				TX	3B	IMP 100 SEE 2P
35	SU76002260	PGR					1	1	92	-4	57	-30	3A				TX	3B	SEE 2P
36	SU76102260	PGR			110		1	1	142	46	88	1	2				DR	2	SEE 3P ALSO TX
37	SU76202260	OAT					1	1	78	-18	61	-26	3A				DR	3A	
38	SU76312260	OAT					1	1	88	-8	71	-16	3A				DR	3A	
39	SU76402260	OAT			90		1	1	127	31	81	-6	2				DR	2	SEE 3P ALSO TX
40	SU76502260	OAT			45		1	1	138	42	100	13	1				TX	2	SEE 3P
41	SU76602260	OAT					1	1	96	0	78	-9	3A				DR	3A	
42	SU76702260	OAT					1	1	88	-8	71	-16	3A				DR	3A	

SAMPLE		ASPECT		--WETNESS--		-WHEAT-		-POTS-		M.REL	EROSN	FROST	CHEM	ALC	
NO.	GRID REF	USE	GRDNT GLEY SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	COMMENTS
43	SU75702251	PGR		1	1	72	-24	55	-32	3B				TX 3B	SEE 2P
1P	SU76602300	PGR		1	1	78	-18	61	-26	3A				TX 3B	SAND TOPSOIL
2P	SU76062270	LEY		1	1	73	-23	56	-31	3B				TX 3B	SAND TOPSOIL
3P	SU76402260	OAT	90	1	1	125	29	80	-7	2				DR 2	ALSO TX

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	
1	0-32	MS	10YR21						0	0		0							BORDERLINE LMS
	32-95	MS	10YR62						0	0		0		M					
	95-120	C	05YR71						0	0		0		M					
2	0-30	MS	10YR31						0	0		0							BORDERLINE LMS
	30-58	MS	10YR51	10YR66	C			Y	0	0		0		M					
	58-100	C	10YR66						0	0		0		M			Y		
3	0-30	MS	10YR21						0	0		0							BORDERLINE LMS
	30-90	MS	10YR62						0	0		0		M					
	90-120	LMS	10YR32						0	0		0		G					
4	0-40	MS	10YR21						0	0		0							BORDERLINE LMS
	40-100	MS	10YR42						0	0		0		M					
	100-120	MS	10YR32						0	0		0		M					
5	0-40	MS	10YR21						0	0		0							BORDERLINE LMS
	40-100	MS	10YR71						0	0		0		M					
	100-120	MS	10YR32						0	0		0		M					
7	0-35	MS	10YR21						0	0		0							BORDERLINE LMS
	35-90	MS	10YR62						0	0		0		M					
	90-120	LMS	10YR63						0	0		0		G					
8	0-20	MS	10YR2131						0	0		0							BORDERLINE LMS
	20-120	MS	10YR7172						0	0		0		M					
9	0-35	MS	10YR31						0	0		0							BORDERLINE LMS
	35-70	MS	10YR6371						0	0		0		M					
	70-120	MS	10YR3171						0	0		0		M					WET
10	0-30	LMS	10YR32						0	0		0							Q DISTURBED
	30-65	LMS	10YR3334						0	0		0		G					
	65-110	MS	10YR5363	10YR56	C			Y	0	0		0		M					
	110-120	SCL	25Y 63	10YR4656	C			Y	0	0		0		M					
11	0-28	MS	10YR21						0	0		0							
	28-120	MS	10YR7172						0	0		0		M					
12	0-30	LMS	10YR21						0	0		0							Q DISTURBED
	30-60	HCL	25Y 53	10YR4658	M	D		Y	0	0		0		M					
	60-95	C	25Y 5253	10YR5868	M	D		Y	0	0		0		P			Y		PLASTIC
	95-120	MS	10YR53	10YR58	M	D		Y	0	0		0		M					
13	0-28	MS	10YR21						0	0		0							
	28-120	MS	10YR72						0	0		0		M					
14	0-36	LMS	10YR31						0	0		0							
	36-80	MS	10YR41						0	0		0		M					
	80-120	MS	10YR34						0	0		0		M					

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
15	0-34	LMS	10YR31						0	0		0							
	34-60	LMS	10YR52						0	0		0		G					
	60-120	MS	75YR52						0	0		0		M					
16	0-38	LMS	10YR32						0	0		0							
	38-120	MS	10YR52						0	0		0		M					
17	0-28	LMS	10YR32						0	0		0							
	28-50	LMS	10YR42						0	0		0		G					IMP GRAVELLY
18	0-37	LMS	10YR32						0	0		0							
	37-95	MSL	10YR3242	75YR4658	M	D		Y	0	0		0		M					
	95-120	SCL	10YR53	75YR4658	M	D		Y	0	0		0		M					
19	0-33	LMS	10YR32						0	0		0							
	33-45	LMS	10YR42						0	0		0		G					
	45-120	MS	10YR5262						0	0		0		M					
20	0-30	LMS	10YR32						0	0		0							
	30-45	LMS	10YR32						0	0		0		G					
	45-120	MS	10YR5152						0	0		0		M					
21	0-30	MSL	10Y32						0	0		0							
	30-70	LMS	10YR4243						0	0		0		G					
	70-85	LMS	10YR5354	10YR46	C	D		Y	0	0		0		M					SEE 3P H3
	85-100	MSL	10YR5352	10YR4656	C	D		Y	0	0		0		M					
	100-120	HCL	10YR52	10YR4656	C	D		Y	0	0		0		M					
22	0-28	LMS	10YR32						0	0		0							
	28-60	MS	10YR7253						0	0		0		M					
	60-65	MSL	10YR4654						0	0		0		M					IMP 65 HARD/DRY
23	0-25	LMS	10YR21						0	0	HR	1							
	25-35	MS	10YR5272						0	0	HR	2		M					BLEACHED SAND
	35-45	MCL	10YR3231	10YR58	C	D		Y	0	0	HR	5		M					
	45-65	SCL	25Y 5262	10YR58	M	D		Y	0	0		0		M					
	65-90	C	25Y 7172	10YR5868	M	D		Y	0	0		0		P		Y			PLASTIC
	90-120	MS	10YR5254						0	0		0		M					
24	0-27	MS	10YR21						0	0		0							
	27-120	MS	25Y 6144						0	0		0		M					
24A	0-25	MS	10YR21						0	0		0							
	25-120	MS	10YR61						0	0		0		M					
25	0-36	MS	10YR21						0	0		0							
	36-120	MS	10YR53						0	0		0		M					

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	
26	0-34	LMS	10YR31						0	0		0							
	34-80	MS	10YR52						0	0		0		M					
	80-120	LMS	10YR56						0	0		0		G					
27	0-35	LMS	10YR53						0	0		0							
	35-120	MS	10YR54						0	0		0		M					
28	0-35	MSL	10YR53						0	0		0							BORDERLINE LMS
	35-95	LMS	10YR44						0	0	HR	3		G					
	95-120	SCL	10YR54						0	0		0		M					
29	0-35	LMS	10YR53						0	0		0							
	35-120	MS	10YR44						0	0	HR	3		M					
30	0-35	LMS	10YR53						0	0		0							
	35-120	MS	10YR64						0	0		0		M					
31	0-32	LMS	10YR53						0	0		0							
	32-96	MS	10YR63						0	0		0		M					
	96-120	MCL	10YR46						0	0		0		M					
32	0-27	MS	10YR21						0	0		0							BORDERLINE LMS
	27-45	MS	10YR21						0	0		0		M					
	45-60	MSL	10YR3631						0	0		0		G					
	60-120	MS	10YR3272						0	0		0		M					
33	0-30	LMS	10YR32						0	0		0							
	30-70	MS	10YR7153						0	0		0		M					
34	0-25	MS	10YR32						0	0		0							BORDERLINE LMS
	25-55	MS	10YR7141						0	0		0		M					
	55-85	LMS	10YR2171	10YR46	C	D		Y	0	0		0		M					WET 65 SEE 3P H3
	85-100	MS	10YR5364						0	0		0		M					IMP FE PAN/DRY
35	0-28	MS	10YR32						0	0		0							BORDERLINE LMS
	28-50	MS	10YR3252						0	0		0		M					
	50-65	MS	10YR3343						0	0		0		M					
	65-100	MS	10YR5664						0	0		0		M					
	100-120	MSL	10YR5664						0	0		0		G					
36	0-35	LMS	10YR32						0	0		0							BORDERLINE MS
	35-50	MS	10YR4262						0	0		0		M					
	50-110	MSL	10YR5354						0	0		0		G					
	110-120	MCL	10YR53	10YR5658	C	D		Y	0	0		0		M					
37	0-30	LMS	10YR21						0	0		0							
	30-120	MS	10YR42						0	0		0		M					

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	
38	0-35	LMS	10YR3242						0	0		0							BORDERLINE MSL
	35-50	LMS	10YR53						0	0		0		G					
	50-120	MS	10YR5464						0	0		0		M					
39	0-25	LMS	10YR42						0	0		0							
	25-60	LMS	10YR4344						0	0		0		G					
	60-90	MSL	10YR5464						0	0		0		M					
	90-120	SCL	25Y 7273	10YR56	C	D		Y	0	0		0		M					
40	0-28	LMS	10YR42						0	0		0							BORDERLINE MSL
	28-45	MSL	10YR4353						0	0		0		M					
	45-65	MSL	10YR53	10YR56	C	F		Y	0	0		0		M					
	65-120	HCL	25Y 6373	10YR5658	C	D		Y	0	0	HR	5		M					SEE 3P
41	0-35	LMS	10YR53						0	0		0							
	35-80	LMS	10YR44						0	0	HR	5		G					
	80-120	MS	10YR4446						0	0		0		M					
42	0-35	LMS	10YR53						0	0		0							
	35-50	LMS	10YR44						0	0		0		G					
	50-120	MS	10YR64						0	0		0		M					
43	0-25	MS	10YR32						0	0		0							BORDERLINE LMS
	25-120	MS	10YR7161						0	0		0		M					
1P	0-34	MS	10YR21						0	0		0							VARIABLE DEPTH
	34-82	MS	10YR71	10YR58	F	D			0	0		0	WKMSB	VF	M				
	82-107	MS	10YR71						0	0		0	WKMSB	VF	M				
	107-120	MS	10YR31						0	0		0	WKCPL	FR	M				
2P	0-27	MS	10YR21						0	0		0							
	27-120	MS	10YR72						0	0		0	WKMSB	VF	M				
3P	0-26	LMS	10YR32						0	0		0							
	26-60	LMS	10YR43						0	0	HR	3	MDCAB	FR	G				PLOUGH PAN
	60-90	MSL	25Y 5253	10YR4658	F	D			0	0	HR	5	MDCSAB	FR	M				LMS IN PLACES
	90-120	HCL	25Y 63	10YR5658	C	F		Y	0	0		0	MDCSAB	FR	M				MIXED S + C