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**HORSHAM DISTRICT LOCAL PLAN
Land at Kingsfold, Horsham, West Sussex**

**Agricultural Land Classification
Reconnaissance Survey
ALC Map and Report**

February 1998

**Resource Planning Team
Eastern Region
FRCA Reading**

**RPT Job Number:4205/001/98
MAFF Reference:EL 42/1802**

AGRICULTURAL LAND CLASSIFICATION REPORT

HORSHAM DISTRICT LOCAL PLAN LAND AT KINGSFOLD, HORSHAM, WEST SUSSEX

RECONNAISSANCE SURVEY

INTRODUCTION

1. This report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey of 207.5 hectares of land surrounding the village of Kingsfold, near Horsham in West Sussex. The survey was carried out during February 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 MAFF's statutory input to the First Review of the Horsham 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 land use on the site was a mixture of permanent grassland, winter cereals and field beans. The areas mapped as 'Other land' include woodland, ponds, residential and farm buildings, and associated trackways.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. 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
3b	169.3	100.0	81.6
Other land	38.2	N/A	18.4
Total surveyed area	169.3	100	81.6
Total site area	207.5	-	100

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

7. The fieldwork was conducted at an average density of 1 boring per 4 hectares of agricultural land. In total, 52 borings and 4 soil pits were described.

8. The whole site has been classified as Subgrade 3b (moderate quality) agricultural land. The principal limitation is soil wetness associated with the underlying Weald Clay geology.

9. Typically, soils comprise fine loamy topsoils over poorly structured clayey subsoils. The resulting poorly drained soils in conjunction with the local climate results in significant soil wetness and limits land quality to Subgrade 3b. The overall effect of soil wetness is to restrict land utilisation by reducing the number of days when the land is in a suitable condition for trafficking or grazing and adversely affecting crop growth

FACTORS INFLUENCING ALC GRADE

Climate

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

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

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	TQ 173 368	TQ 159 367
Altitude	m, AOD	75	60
Accumulated Temperature	day°C (Jan-June)	1443	1461
Average Annual Rainfall	mm	801	790
Field Capacity Days	days	168	166
Moisture Deficit, Wheat	mm	105	108
Moisture Deficit, Potatoes	mm	98	101
Overall climatic grade	N/A	Grade 1	Grade 1

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

13. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

14. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The survey area is not thought to be either frost-prone or exposed. The site is climatically Grade 1. However, climatic factors do interact with soil properties to

influence soil wetness and soil droughtiness. At this locality the climate is moist with average temperatures, in regional terms. The likelihood of soil wetness problems may therefore be enhanced.

Site

15. The site lies at altitudes in the range of 55-90 m AOD. The village of Kingsfold is located on the higher ground and the land gently falls to the lower land in the south-east and north-west of the survey area. The land is not affected by any site restrictions (such as gradient, micro-relief or flood risk).

Geology and soils

16. The most detailed published geological information for the site (BGS, 1972) shows the whole survey area to be underlain by Weald Clay

17. The most detailed published soils information covering the area (SSEW, 1983) shows most of the site to comprise soils of the Denchworth association. These soils are described as 'slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. *Some fine loamy over clayey with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils*' (SSEW, 1983). Soils consistent with this description were observed over the majority of the site; predominantly fine loamy with some fine silty soils over clay. To the south-east of the site soils of the Wickham 1 association are shown on the published map. These soils are described as 'slowly permeable seasonally waterlogged fine silty over clayey, fine loamy over clayey and clayey soils' (SSEW, 1983). Soils fitting this description were not observed in the south-east of the site.

AGRICULTURAL LAND CLASSIFICATION

18. 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.

19. 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.

Subgrade 3b

20. Land of moderate quality has been mapped over the entire site. A significant soil wetness problem is the principal limitation on this site.

21. Soils typically comprise non-calcareous, stoneless heavy clay loam or occasionally clay topsoils. These directly overlie clay subsoils. Soil pits 1-4 (see Appendix II) are typical of these soils. All pits confirmed the existence of the poorly structured clay horizons which significantly impede the drainage through the profile. This causes prolonged seasonal waterlogging at shallow depths in the soils, as evidenced by prominent mottling below the topsoil, and even in the topsoil where the land is in permanent grass. Such poorly drained clayey soils equate to wetness class IV, which when considered alongside relatively heavy topsoil textures and the prevailing climate results in a land classification of Subgrade 3b.

22. The effect of prolonged soil wetness is to adversely affect seed germination and survival, partly by a reduction in soil temperature and partly because of anaerobism. This also inhibits the development of a good root system and can affect crop growth. In addition, the heavy topsoils restrict the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

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SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No. 302, Horsham, 1:63,360, Solid and Drift Ed.*
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.

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MAFF: London.

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

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

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

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

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

Grade 4: Poor Quality Agricultural Land

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

Grade 5: Very Poor Quality Agricultural Land

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

APPENDIX II

SOIL DATA

Contents:

Sample location map

Soil abbreviations - explanatory note

Soil boring descriptions (boring and horizon levels)

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. **GLEYSPL:** 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	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT					
1	TQ17203740	PGR			23	23	4	3B	87	-18	96	-2			WE	3B	
2	TQ17403740	PGR NE	1		0	25	4	3B	85	-20	91	-7			WE	3B	
3	TQ17503740	PGR N	2		0	25	4	3B		0		0			WE	3B	
4	TQ17203720	PGR E	1		0	28	4	3B	94	-11	104	6			WE	3B	
5	TQ17403720	PGR S	1		0	28	4	3B	94	-11	104	6			WE	3B	
6	TQ17603720	PGR E	2		25	25	4	3B	92	-13	102	4			WE	3B	
7	TQ17103700	PGR E	1		0	28	4	3B		0		0			WE	3B	
8	TQ17303700	PGR E	1		0	20	4	3B		0		0			WE	3B	
9	TQ17503700	PGR S	2		0	22	4	3B		0		0			WE	3B	
10	TQ16203686	BEN N	1		28	28	4	3B	93	-12	105	7			WE	3B	
11	TQ16403690	BEN N	1		30	30	4	3B	94	-11	106	8			WE	3B	
12	TQ16603690	RGR S	1		30	30	4	3B	94	-11	106	8			WE	3B	
13	TQ16703690	BEN NW	1		0	25	4	3B	89	-16	101	3			WE	3B	
14	TQ17203680	CER E	2		0	25	4	3B	78	-27	81	-17			WE	3B	
15	TQ17403680	CER E	2		30	30	4	3B	84	-21	87	-11			WE	3B	
16	TQ15703670	PEA W	1		25	25	4	3B	92	-13	104	6			WE	3B	
17	TQ15803670	PEA N	1		0	27	4	3B	93	-12	105	7			WE	3B	
18	TQ16003670	PGR N	1		0	28	4	3B	93	-12	105	7			WE	3B	
19	TQ16223670	BEN NW	1		0	30	4	3B	94	-11	106	8			WE	3B	
20	TQ16403670	BEN W	1		30	30	4	3B	94	-11	106	8			WE	3B	
21	TQ16603670	CER N	1		28	28	4	3B	93	-12	105	7			WE	3B	
22	TQ16803670	BEN NW	1		27	27	4	3B	93	-12	105	7			WE	3B	
23	TQ17203660	CER E	3		25	25	4	3B	81	-24	84	-14			WE	3B	
24	TQ17403660	HCL E	3		25	25	4	3B	81	-24	84	-14			WE	3B	
25	TQ15803650	PEA W	1		30	30	4	3B	94	-11	106	8			WE	3B	
26	TQ16003650	BEN NW	1		0	25	4	3B	85	-20	91	-7			WE	3B	
27	TQ16203650	CER NW	1		28	28	4	3B	93	-12	105	7			WE	3B	
28	TQ16563650	CER NW	1		28	28	4	3B	93	-12	105	7			WE	3B	
29	TQ16803650	PGR NW	1		25	25	4	3B	85	-20	91	-7			WE	3B	
30	TQ17003640	CER SE	2		0	28	4	3B	83	-22	86	-12			WE	3B	
31	TQ15803630	BEN W	1		0	25	4	3B	85	-20	91	-7			WE	3B	
32	TQ16003630	PGR N	1		29	29	4	3B	94	-11	106	8			WE	3B	
33	TQ16203630	CER W	1		27	27	4	3B	93	-12	105	7			WE	3B	
34	TQ15903620	BEN W	1		0	25	4	3B	85	-20	91	-7			WE	3B	
35	TQ16103620	CER NW	1		29	29	4	3B	94	-11	106	8			WE	3B	
36	TQ16303620	PGR			0	26	4	3B	85	-20	91	-7			WE	3B	
37	TQ16503620	PGR			0	25	4	3B	85	-20	91	-7			WE	3B	
38	TQ16703620	PGR S	1		0	30	4	3B	87	-18	93	-5			WE	3B	
39	TQ17103630	CER S	2		25	25	4	3B	92	-13	104	6			WE	3B	
40	TQ15803610	CER N	1		0	20	4	3B	82	-23	88	-10			WE	3B	
41	TQ16003610	CER W	1		25	25	4	3B	85	-20	91	-7			WE	3B	
42	TQ15903600	CER W	1		24	24	4	3B	84	-21	90	-8			WE	3B	

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--					-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
43	TQ16103600	PGR		0	18	4	3B	81	-24	87	-11					WE	3B	
44	TQ16303600	PGR		0	26	4	3B	85	-20	91	-7					WE	3B	
45	TQ16503600	PGR S	2	0	26	4	3B	85	-20	91	-7					WE	3B	
46	TQ16703600	PGR S	2	0	22	4	3B	83	-22	89	-9					WE	3B	
47	TQ17103600	CER S	1	30	47	3	3B	106	1	111	13					WE	3B	
48	TQ15803590	PGR W	1	0	28	4	3B	93	-12	105	7					WE	3B	
49	TQ16103580	PGR E	1	0	34	4	3B	86	-19	92	-6					WE	3B	
50	TQ16303590	PGR E	2	0	26	4	3B	86	-19	92	-6					WE	3B	
51	TQ17003580	CER S	1	29	29	4	3B	94	-11	106	8					WE	3B	
52	TQ17003560	CER S	1	29	29	4	3B	91	-14	101	3					WE	3B	
1P	TQ16603670	CER		28	28	4	3B	86	-19	92	-6					WE	3B	
2P	TQ16103580	PGR SE	1	0	21	4	3B	125	20	102	4	2				WE	3B	
3P	TQ17403720	PGR S	1	0	24	4	3B	88	-17	97	-1					WE	3B	
4P	TQ17203640	CER		28	28	4	3B	86	-19	92	-6					WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
1	0-23	HCL	10YR43							0	0	0					
	23-65	C	25Y63	10YR5868	M			Y	0	0	0		P				Y
2	0-25	HCL	10YR53	10YR5658	C			Y	0	0	0						
	25-60	C	05Y62	10YR58	M			Y	0	0	0		P				Y
3	0-25	HCL	10YR53	10YR46	C	F		Y	0	0	0						
	25-70	C	25Y62	10YR68	M	D		Y	0	0	0		P				Y
4	0-28	HZCL	25Y53	10YR58	C	D		Y	0	0	0						
	28-70	ZC	25Y62	10YR5868	M			Y	0	0	0		P				Y
5	0-28	HZCL	25Y53	10YR46	C			Y	0	0	0						
	28-70	ZC	25Y62	10YR5868	M			Y	0	0	0		P				Y
6	0-25	HZCL	25Y53	10YR56	F	D			0	0	0						
	25-70	ZC	25Y62	10YR5868	M			Y	0	0	0		P				Y
7	0-28	HCL	10YR53	10YR46	C	D		Y	0	0	0						
	28-70	C	25Y6263	10YR58	M	D		Y	0	0	0		P				Y
8	0-20	HCL	25Y6353	10YR58	C	D		Y	0	0	0						
	20-70	C	25Y62	10YR68	M	D		Y	0	0	0		P				Y
9	0-22	HCL	10YR5352	10YR46	C	D		Y	0	0	0						
	22-70	C	25Y 62	10YR68	M	D		Y	0	0	0		P				Y
10	0-28	HCL	10YR42						0	0	0						
	28-70	C	25Y61	10YR68	M			Y	0	0	0		P				Y
11	0-30	HCL	10YR42						0	0	0						
	30-70	C	25Y62	10YR68	M			Y	0	0	0		P				Y
12	0-25	C	10YR42						0	0	0						
	25-70	C	25Y6172	10YR68	M			Y	0	0	0		P				Y
13	0-30	HCL	10YR41	10YR46	C			Y	0	0	0						
	30-70	C	25Y6172	10YR68	M			Y	0	0	0		P				Y
14	0-25	C	10YR53	10YR46	C	D		Y	0	0	HR 1						
	25-55	C	25Y63	10YR68	M	D		Y	0	0	0		P				Y
15	0-30	HCL	10YR53						0	0	0						
	30-55	C	25Y63	10YR68	M	D		Y	0	0	0		P				Y
16	0-25	HCL	10YR43	10YR58	F				0	0	0						
	25-70	C	25Y53	10YR68	M			Y	0	0	0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
17	0-27	HCL	10YR4353	10YR58	C			Y	0	0	0						
	27-70	C	25Y62	10YR68	M			Y	0	0	0		P				Y
18	0-28	HCL	10YR4243	10YR46	C			Y	0	0	0						
	28-70	C	25Y62	10YR68	M			Y	0	0	0		P				Y
19	0-30	HCL	10YR4252	10YR46	C			Y	0	0	0						
	30-70	C	25Y61	10YR68	M			Y	0	0	0		P				Y
20	0-30	HCL	10YR4243						0	0	0						
	30-70	C	25Y6172	10YR68	M			Y	0	0	0		P				Y
21	0-28	HCL	10YR43						0	0	0						
	28-70	C	25Y6172	10YR68	M			Y	0	0	0		P				Y
22	0-27	HCL	10YR43						0	0	0						
	27-70	C	25Y61	10YR68	M			Y	0	0	0		P				Y
23	0-25	HCL	10YR53	10YR46	F D				0	0	0						
	25-55	C	25Y63	10YR68	M D			Y	0	0	0		P				Y
24	0-25	HCL	10YR53						0	0	0						
	25-55	C	25Y63	10YR68	M D			Y	0	0	0		P				Y
25	0-30	HCL	10YR43						0	0	0						
	30-70	C	25Y5363	10YR58	M			Y	0	0	0		P				Y
26	0-25	HCL	25Y53	10YR56	C			Y	0	0	0						
	25-60	C	25Y62	10YR68	M			Y	0	0	0		P				Y
27	0-28	HCL	10YR43						0	0	0						
	28-70	C	25Y61	10YR68	M			Y	0	0	0		P				Y
28	0-28	HCL	10YR43						0	0	0						
	28-70	C	25Y61	10YR68	M			Y	0	0	0		P				Y
29	0-25	HCL	25Y52						0	0	0						
	25-60	C	25Y62	10YR68	M			Y	0	0	0		P				Y
30	0-28	HCL	10YR53	10YR46	C D			Y	0	0	0						
	28-55	C	25Y62	10YR68	M D			Y	0	0	0		P				Y
31	0-25	HCL	25Y53	10YR56	C			Y	0	0	0						
	25-60	C	25Y62	10YR68	M			Y	0	0	0		P				Y
32	0-29	HCL	10YR4252	10YR46	C				0	0	0						
	29-70	C	25Y62	10YR68	M			Y	0	0	0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----				STRUCT/		SUBS	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP
33	0-27	HCL	10YR43							0	0	0				
	27-70	C	25Y72	10YR68	M			Y	0	0	0		P		Y	
34	0-25	HCL	25Y53	10YR56	C			Y	0	0	0					
	25-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
35	0-29	HCL	10YR53							0	0	0				
	29-70	C	25Y6272	10YR68	M			Y	0	0	0		P		Y	
36	0-26	HCL	25Y52	10YR46	C			Y	0	0	0					
	26-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
37	0-25	HCL	25Y52	10YR46	C			Y	0	0	0					
	25-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
38	0-30	HCL	25Y52	10YR46	C			Y	0	0	0					
	30-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
39	0-25	HCL	10YR43							0	0	0				
	25-70	C	25Y61	10YR68	M			Y	0	0	0		P		Y	
40	0-20	HCL	25Y53	10YR56	C			Y	0	0	0					
	20-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
41	0-25	HCL	25Y53							0	0	0				
	25-60	C	25Y63	10YR68	M			Y	0	0	0		P		Y	
42	0-24	HCL	25Y53							0	0	0				
	24-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
43	0-18	HCL	25Y52	10YR56	C			Y	0	0	0					
	18-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
44	0-26	HCL	25Y52	10YR46	C			Y	0	0	0					
	26-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
45	0-26	HCL	25Y52	10YR46	C			Y	0	0	0					
	26-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
46	0-22	HCL	25Y52	10YR46	C			Y	0	0	0					
	22-60	C	25Y62	10YR68	M			Y	0	0	0		P		Y	
47	0-30	HCL	10YR43							0	0	0				
	30-47	HCL	10YR53	10YR58	C			Y	0	0	0		M		N	
	47-80	C	25Y61	10YR68	M			Y	0	0	0		P		Y	
48	0-28	HCL	25Y53	10YR46	C			Y	0	0	0					
	28-70	C	25Y62	10YR68	M			Y	0	0	0		P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP
49	0-34	C	25Y52	10YR46	C			Y	0	0	0					
	34-60	C	25Y62	10YR68	M			Y	0	0	0		P			Y
50	0-26	HCL	25Y52	10YR46	C			Y	0	0	0					
	26-60	C	25Y62	10YR68	M			Y	0	0	0		P			Y
51	0-29	HCL	10YR43						0	0	0					
	29-70	C	25Y61	10YR68	M			Y	0	0	0		P			Y
52	0-29	HCL	10YR4353						0	0	0					
	29-70	ZC	25Y61	10YR68	M			Y	0	0	0		P			Y
1P	0-28	HCL	25Y53						0	0	HR	1				
	28-60	C	25Y62	10YR66	M	P		Y	0	0	0	MDCOAB	FM	P	Y	Y
2P	0-21	HCL	25Y52	10YR46	C			Y	0	0	0					
	21-42	C	25Y63	10YR68	M			Y	0	0	0	MDCOPR	FM	P	Y	Y
	42-120	C	25Y72	10YR68	M			Y	0	0	0	MDCOAB	FM	P	Y	Y
3P	0-24	HCL	25Y42	10YR56	C	D		Y	0	0	0					
	24-38	C	05Y62	10YR58	M	D	05Y58	Y	0	0	0	MDCOPR	FM	P	Y	Y
	38-65	C	05Y62	10YR58	M	D		Y	0	0	0	MDCOAB	FM	P	Y	Y
4P	0-28	HCL	10YR42						0	0	0					
	28-42	C	10YR41	10YR58	C			Y	0	0	0	WKCOAB	FM	P	Y	Y
	42-60	C	25Y71	10YR68	M			Y	0	0	0	MDCOAB	FM	P	Y	Y