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ISLE OF WIGHT UNITARY DEVELOPMENT PLAN
OBJECTOR SITES
Land around Parkhurst

Agricultural Land Classification
ALC Map and Report

September 1998

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

ISLE OF WIGHT UNITARY DEVELOPMENT PLAN - OBJECTOR SITES LAND AROUND PARKHURST.

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 38.4ha of land to the north and east of Parkhurst near Newport on the Isle of Wight. The survey was carried out during September 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 Isle of Wight Unitary Development Plan. The survey covers 5 areas put forward as objector sites, these are outlined on the accompanying map. In order to provide a context for appraising these sites, further, adjacent land was also surveyed. 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, agricultural land use over the area surveyed included permanent grassland and ley grassland with one arable field to the south which had recently been drilled for the 1999 season. The areas mapped as 'Other land' comprise woodland some of which has recently been established and a 'sand school' for the horsiculture enterprise to the west of the area surveyed. The area shown as 'Agricultural Land Not Surveyed' to the west of Objector Site 3 was not entered as access was not forthcoming within the time frame available for this survey.

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 objector sites and all of the surveyed land are summarised in Tables 1 to 6 inclusive.

Table 1: Area of grades - Objector Site 1

Grade/Other land	Area (hectares)	% site area
4	4.4	100
Total site area	4.4	100

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

Table 2: Area of grades - Objector Site 2

Grade/Other land	Area (hectares)	% site area
4	1.9	100
Total site area	1.9	100

Table 3: Area of grades and other land - Objector Site 3

Grade/Other land	Area (hectares)	% surveyed area	% site area
4 Other Land Agricultural Land Not Surveyed	6.4 0.7 2.9	100 - -	64.0 7.0 29.0
Total surveyed area Total site area	6.4 10.0	100 -	64.0 100

Table 4: Area of grades - Objector Site 4

Grade/Other land	Area (hectares)	% site area
4	1.1	100
Total site area	1.1	100

Table 5: Area of grades - Objector Site 5

Grade/Other land	Area (hectares)	% site area
4	6.9	100
Total site area	6.9	100

Table 6: Area of grades and other land - Total of Land Surveyed at Parkhurst

Grade/Other land	Area (hectares)	% surveyed area	% site area
4 Other Land Agricultural Land Not Surveyed	34.5 1.0 2.9	100 - -	89.8 2.6 7.6
Total surveyed area Total site area	34.5 38.4	100 -	89.8 100

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. In total, 38 borings and three soil pits were described.

8. The agricultural land at this site has been classified as being Grade 4 (poor quality). The principal limitation is a combination of soil wetness and topsoil workability.

9. The soils on the site comprise heavy clay loam topsoils which in most cases directly overlie clay subsoils. Occasionally a narrow heavy clay loam upper subsoil was present. The clay horizons significantly impede soil drainage to the extent that within the relatively wet local climate Grade 4 is an appropriate classification. Soil wetness reduces the versatility of the land in terms of access by machinery (e.g. for cultivations or harvesting) and grazing by livestock if damage to the soil is to be avoided. The heavy topsoils present serve to enhance this restriction. Soil wetness will also adversely affect seed germination and root growth and will therefore reduce the level and consistency of yields.

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 7 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

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.

Table 7: Climatic and altitude data

Factor	Units	Values		
Grid reference	N/A	SZ 496 909	SZ 493 914	SZ 489 914
Altitude	m, AOD	15	35	45
Accumulated Temperature	day°C (Jan-June)	1548	1525	1513
Average Annual Rainfall	mm	863	861	861
Field Capacity Days	days	178	177	176
Moisture Deficit, Wheat	mm	109	107	106
Moisture Deficit, Potatoes	mm	104	102	100
Overall climatic grade	N/A	Grade 1	Grade 1	Grade 1

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 site is not believed to be either frost-prone or to suffer from exposure. As such, the site may be considered as being climatically Grade 1. However, climatic factors do interact with soil properties to influence soil wetness and soil droughtiness. At this locality the high number of days when the land is at field capacity enhances the likelihood of soil wetness and workability problems.

Site

15. The survey area lies between approximately 15m and 45m AOD. The highest land is located towards the north and west of the site. Slopes towards the east of the site are gentle, the land falling from the north to the south and east. To the west of the site the south facing slope in Objector Site 3 is of a moderate nature, although it is not sufficient to adversely affect agricultural land quality. Neither gradient, microrelief or flood risk affect the land quality of this site.

Geology and soils

16. The most detailed published geological information for this area (BGS, 1976) shows the whole survey area to be underlain by Hamstead Beds.

17. The most recent published soils information covering the area (SSEW, 1983) shows the whole survey area to comprise soils from the Wickham 4 Association. These soils 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). This description is typical of the soils encountered throughout the area surveyed.

AGRICULTURAL LAND CLASSIFICATION

18. The details of the classification of the survey area are shown on the attached ALC map and the area statistics of each grade are given in Tables 1-6.

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.

Grade 4

20. Grade 4, poor quality land, occurs throughout the area surveyed. The land was found to have a severe soil wetness and workability limitation. Soil profiles comprise a stoneless or very slightly stony heavy clay loam or clay topsoil which, in most cases, directly overlies a stoneless clay subsoil. From the pit observations, 1P, 2P and 3P (see Appendix II), the clay was found to be poorly structured and slowly permeable. This causes a significant drainage impedance which, in the local climate is sufficient to place these soils in Wetness Class IV. When the poor workability of the heavy topsoils and the relatively wet local climate is taken into consideration, this is sufficient to place this land in Grade 4 on the basis of a soil wetness and workability limitation. This restriction is likely to adversely affect crop growth and development. It is also likely to limit the flexibility of the land by reducing the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock. Occasional observations were of slightly better quality but these were too few in number and too scattered to be mapped separately.

Matthew Larkin
Resource Planning Team
Eastern Region
FRCA Reading

SOURCES OF REFERENCE

British Geological Survey (1976) *Special Sheet, Isle of Wight, 1:50,000, Drift Edition.* BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

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

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

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

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

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

Grade 4: Poor Quality Agricultural Land

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

Grade 5: Very Poor Quality Agricultural Land

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

APPENDIX II

SOIL 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	SZ49309170	LEY	E	4	0	22	4	4		0		0					WE	4	
2	SZ49509170	LEY	NE	4	0	22	4	4	96	-13	111	7	3A				WE	4	
3	SZ49609170	LEY	NE	5	25	25	4	4		0		0					WE	4	2P LOCATION
4	SZ49709170	LEY	NE	2	0	25	4	4		0		0					WE	4	
5	SZ49309160	LEY	E	3	0	25	4	4		0		0					WE	4	
6	SZ49409160	LEY			0	28	4	4		0		0					WE	4	
7	SZ49509160	LEY			0	30	4	4		0		0					WE	4	
8	SZ49609160	LEY	E	2	0	28	4	4		0		0					WE	4	
9	SZ49709160	LEY	E	4	0	25	4	4		0		0					WE	4	
10	SZ49319150	LEY		2	0	30	4	4		0		0					WE	4	
11	SZ49409150	LEY	NE	6	0	30	4	4		0		0					WE	4	
12	SZ49609150	LEY	S	1	0	40	4	4		0		0					WE	4	
14	SZ48909140	PGR	S	3	0	35	4	3B	129	20	106	2	2				WE	4	1P LOCATION
15	SZ49009100	PGR	E	5	0	33	4	3B	87	-22	99	-5	3B				WE	3B	
16	SZ49309140	LEY	E	3	27	27	4	4		0		0					WE	4	
17	SZ49409140	LEY	E	3	0	30	4	4		0		0					WE	4	
18	SZ48809127	PGR	S	5	0	38	4	4	92	-17	104	0	3A				WE	4	
19	SZ48909130	PGR	S	6	0	23	4	4	89	-20	101	-3	3B				WE	4	
20	SZ49009130	PGR	S	6	0	23	4	4	94	-15	99	-5	3A				WE	4	
21	SZ49109130	PGR	W	4	0	28	4	4	91	-18	103	-1	3A				WE	4	
24	SZ48809120	PGR	S	3	0	20	4	4	95	-14	100	-4	3A				WE	4	
25	SZ48909120	PGR	S	6	0	28	4	4	93	-16	105	1	3A				WE	4	
26	SZ49009120	PGR	N	2	15	35	4	3B	97	-12	102	-2	3A				WE	3B	
27	SZ49279120	PGR	S	5	20	30	4	3B	94	-15	106	2	3A				WE	3B	
29	SZ49279110	PGR	S	5	15	30	4	3B	128	19	105	1	2				WE	3B	BORDER 4 T/S
31	SZ49509100	LEY	N	3	24	24	4	4		0		0					WE	4	
32	SZ49609100	PGR			25	25	4	4		0		0					WE	4	
33	SZ49509090	PGR	N	3	0	25	4	4		0		0					WE	4	
34	SZ49609090	PGR	E	2	25	25	4	4		0		0					WE	4	
35	SZ49709090	PGR	E	1	28	28	4	4		0		0					WE	4	
36	SZ49609080	PGR	E	2	25	25	4	4	95	-14	100	-4	3A				WE	4	
37	SZ49609090	PGR	E	2	20	20	4	4		0		0					WE	4	
38	SZ49709079	PGR	E	2	25	25	4	4		0		0					WE	4	
40	SZ49509070	LEY	E	2	0	30	4	4		0		0					WE	4	IMP 40 PROB 4
41	SZ49709070	LEY	E	2	25	25	4	4		0		0					WE	4	
42	SZ49709070	PGR	E	3	25	25	4	4	95	-14	100	-4	3A				WE	4	3P LOCATION
43	SZ49609060	ARA	E	2	25	25	4	4	100	-9	105	1	3A				WE	4	
44	SZ49709061	ARA	E	3	25	35	4	4	94	-15	98	-6	3A				WE	4	
P	SZ48909138	PGR	S	3	9	30	4	4	85	-24	93	-11	3B				WE	4	PIT 75 AUG 120
2P	SZ49609170	LEY	E	1	0	20	4	4	121	12	98	-6	2				WE	4	P S/SOIL
P	SZ49709070	PGR	E	3	26	26	4	4	130	21	107	3	2				WE	4	

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	0-22	HCL	10YR42	10YR56	C	D		Y	0	0		0						
	22-58	C	10YR64	10YR68	M	D		Y	0	0		0			P		Y	
	58-80	C	25Y 64	10YR66	M	D		Y	0	0		0			P		Y	Y
2	0-22	HCL	10YR42	10YR56	C	D		Y	0	0	HR	5						
	22-70	C	25Y 63	10YR68	M	D		Y	0	0	HR	5			P		Y	
3	0-25	HCL	10YR42	10YR56	F	F			0	0		0						
	25-70	C	25Y 64	10YR66	M	D		Y	0	0		0			P		Y	Y
4	0-25	HCL	10YR42	10YR56	C	D		Y	0	0		0						
	25-70	C	25Y 66	10YR66	M	D		Y	0	0		0			P		Y	
5	0-25	HCL	10YR42	10YR56	C	D		Y	0	0		0						
	25-70	C	10YR64	10YR66	M	D		Y	0	0		0			P		Y	
6	0-28	HCL	10YR42	10YR56	C	D		Y	1	0	HR	5						
	28-70	C	05Y 61	75YR68	M	D		Y	0	0		0			P		Y	
7	0-30	HCL	10YR42	10YR56	C	D		Y	2	0	HR	10						
	30-70	C	25Y 62	10YR68	M	D		Y	0	0	HR	5			P		Y	
8	0-28	HCL	10YR53	10YR56	C	D		Y	2	0	HR	8						
	28-70	C	25Y 61 62	10YR68	M	D		Y	0	0		0			P		Y	
9	0-25	HCL	10YR42	10YR56	C	D		Y	2	0	HR	8						
	25-50	C	25Y 61 63	75YR68 58	M	D		Y	0	0		0			P		Y	
	50-70	C	05Y 53 52	10YR56	M	D		Y	0	0		0			P		Y	Y
10	0-30	HCL	10YR42	10YR56	C	D		Y	0	0	HR	5						
	30-58	C	10YR64	10YR66	M	D		Y	0	0		0			P		Y	
	58-80	C	25Y64	10YR66	M	D	FEW MN	Y	0	0		0			P		Y	
11	0-30	HCL	10YR42	10YR56	C	D		Y	2	0	HR	10						
	30-60	C	05Y 61	75YR68	M	D		Y	0	0	HR	8			P		Y	
	60-70	C	05Y 61	75YR68	M	D		Y	0	0	HR	2			P		Y	
12	0-30	HCL	10YR42	10YR56	C	D		Y	2	0	HR	10						
	30-40	HCL	10YR52	10YR56	M	D		Y	0	0	HR	15			P			
	40-70	C	05Y 62	10YR58	M	D		Y	0	0	HR	5			P		Y	
14	0-25	MZCL	10YR41	10YR46	C	D		Y	0	0	HR	2						
	25-35	HCL	25Y 61	10YR58	M	D		Y	0	0	HR	5			M			
	35-55	C	25Y 61	10YR58 68	M	D		Y	0	0	HR	5			P		Y	
	55-120	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y	
15	0-20	MCL	10YR41	10YR46	C	D		Y	0	0	HR	2						
	20-33	HCL	10YR52	10YR58	C	D	COM MN	Y	0	0	HR	15			M			
	33-55	C	25Y 62	10YR68	M	D		Y	0	0	HR	10			P		Y	
	55-70	C	05Y 72	10YR68	M	D		Y	0	0		0			P		Y	

				----MOTTLES-----			PED		----STONES----			STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
16	0-27	HCL	10YR42						0	0	HR	5						
	27-58	C	10YR64	10YR66	M	D		Y	0	0		0			P		Y	
	58-80	C	25Y 64	10YR66	M	D		Y	0	0		0			P		Y	
17	0-30	HCL	10YR42	10YR56	C	D		Y	0	0		0						
	30-70	C	10YR64	10YR66	C	D		Y	0	0		0			P		Y	
18	0-20	HCL	10YR41	10YR58	C	D		Y	0	0	HR	2						
	20-38	HCL	10YR51	10YR58	M	D		Y	0	0	HR	5			M			
	38-50	C	25Y 72	10YR68	M	D		Y	0	0		0			P		Y	
	50-70	C	05Y 22	10YR68	M	D		Y	0	0		0			P		Y	
19	0-23	HCL	10YR51	10YR46	C	D		Y	0	0	HR	2						
	23-70	C	10YR53	10YR58	C	D	FEW MN	Y	0	0	HR	2			P		Y	
20	0-23	HCL	10YR41	10YR56	C	D		Y	0	0	HR	2						
	23-33	C	25Y 51	10YR58	C	D	COM MN	Y	0	0	HR	10			P		Y	
	33-50	C	25Y 62	10YR68	M	D	FEW MN	Y	0	0	HR	5			P		Y	
	50-80	C	25Y 62	10YR68	M	D	FEW MN	Y	0	0		0			P		Y	
21	0-28	HCL	10YR41	10YR46	C	D		Y	0	0	HR	2						
	28-50	C	25Y 62	10YR68	M	D		Y	0	0	HR	2			P		Y	
	50-70	C	05Y 62	10YR68	M	D	FEW MN	Y	0	0	HR	2			P		Y	
24	0-20	HCL	10YR41	10YR68	C	D		Y	0	0		0						
	20-40	C	10YR52	10YR58	M	D	FEW MN	Y	0	0	HR	5			P		Y	
	40-80	C	05Y 72	10YR68	M	D		Y	0	0		0			P		Y	
25	0-28	HCL	10YR43	10YR46	C	D		Y	0	0		0						
	28-70	C	05Y 72	10YR68	M	D		Y	0	0		0			P		Y	
26	0-15	MZCL	10YR41						0	0		0						
	15-35	MCL	10YR42	10YR46	C	D	FEW MN	Y	0	0	HR	5			M			
	35-60	C	25Y 62	10YR68	M	D	COM MN	Y	0	0	HR	10			P		Y	
	60-80	C	05Y 63	10YR68	M	D		Y	0	0		0			P		Y	
27	0-20	MZCL	10YR32						0	0		0						
	20-30	HCL	10YR53	10YR58	C	D	COM MN	Y	0	0		0			M			
	30-70	C	25Y 62 64	10YR68	M	F		Y	0	0	CH	3			P		Y	Y
29	0-15	MZCL	10YR32						0	0		0						
	15-30	HCL	10YR41	10YR46	C	D		Y	0	0		0			M			
	30-50	C	10YR62 64	10YR68	M	D	FEW MN	Y	0	0		0			P		Y	
	50-120	C	25Y 62	10YR68	M	D		Y	0	0		0			P		Y	
31	0-24	HCL	10YR42						0	0	HR	5						
	24-70	C	25Y 64	10YR66	C	D		Y	0	0		0			P		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	
32	0-25	HCL	10YR42						0	0	HR	8							
	25-35	C	25Y 64	10YR56	C	D		Y	0	0	HR	10		P			Y		
33	0-25	HCL	10YR42	10YR56	C	D		Y	0	0	HR	5							
	25-50	C	10YR64	10YR68	M	D		Y	0	0		0		P			Y		
	50-70	C	25Y 72	10YR68	M	P		Y	0	0		0		P			Y		
34	0-25	HCL	10YR42						0	0	HR	3							
	25-70	C	10YR64	10YR68	C	D		Y	0	0		0		P			Y		
35	0-28	HCL	10YR42	10YR56	F	D			0	0	HR	3							
	28-70	C	05Y 62 63	10YR58	M	D		Y	0	0		0		P			Y		
36	0-25	HCL	10YR32	10YR56	F	D			0	0	HR	2							
	25-80	C	05Y 61 63	10YR58 68	M	D		Y	0	0	HR	5		P			Y		
37	0-20	HCL	10YR32	10YR56	F	D			0	0	HR	5							
	20-40	C	05Y 61 63	10YR58	M	D		Y	0	0	HR	5		P			Y		
	40-70	C	05Y 61	10YR58	M	D		Y	0	0		0		P			Y		
38	0-25	HCL	10YR42	10YR56	F	D			0	0		0							
	25-70	C	05Y 61 63	10YR68 58	M	D		Y	0	0	HR	5		P			Y		
	70-80	C	05Y 61 63	10YR58 68	M	D		Y	0	0		0		P			Y		
40	0-30	HCL	10YR52	10YR56	M	D		Y	0	0		0							
	30-40	C	05Y 62	10YR58	M	D		Y	0	0		0		P			Y		
41	0-25	HCL	10YR42						0	0	HR	3							
	25-70	C	10YR64	10YR68	M	D		Y	0	0		0		P			Y		
42	0-10	MZCL	10YR31						0	0	HR	2							
	10-25	HCL	25Y 41	10YR56	F	D	FEW MN		0	0	HR	3		M					
	25-45	C	25Y 62	10YR68	M	D	FEW MN	Y	0	0		0		P			Y		
	45-80	C	25Y 72	10YR68	M	D	FEW MN	Y	0	0		0		P			Y		
43	0-25	HZCL	10YR41						0	0		0							
	25-45	C	10YR52	10YR58	C	D		Y	0	0	HR	5		P			Y		
	45-80	C	25Y 62	10YR68	M	D		Y	0	0		0		P			Y		
44	0-25	HCL	10YR41	10YR46	F	D			0	0	HR	2							
	25-35	HCL	25Y 42	10YR58	C	D		Y	0	0	HR	10		M					
	35-60	C	25Y 52	10YR58	M	D		Y	0	0	HR	20		P			Y		
	60-80	C	25Y 62 64	10YR68	M	D		Y	0	0		0		P			Y		
1P	0-9	MZCL	10YR32						0	0	HR	2							
	9-20	HCL	10YR32	10YR46	C	D		Y	0	0	HR	5	WKCSAB	FR M					
	20-30	C	25Y 52 62	10YR68	C	D	COM MN	Y	0	0	HR	25	WKCPR	FM P	Y				<35cm NOT SPL
	30-43	C	25Y 62	10YR68	M	D		Y	0	0	HR	10	WKCAB	FM P	Y		Y		
	43-75	C	05Y 72	05YR58	M	D	25Y 72	Y	0	0	HR	2	MDCAB	FM 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	
2P	0-20	HCL	10YR42	10YR56	C	D		Y	1	0	HR	5							
	20-57	C	05Y 61	75YR68	M	D		Y	0	0	HR	2	WAVCAB	VM	P	Y		Y	
	57-120	C	05Y 52 53	10YR56	M	D		Y	0	0	CH	2	MDVCAB	VM	P	Y		Y	Y
3P	0-11	MZCL	10YR31						0	0	HR	2							
	11-26	HCL	25Y 41	10YR56	F	D			0	0	HR	2	WKMSAB	FR	G				FEW MN
	26-56	C	25Y 62	10YR68	C	D		Y	0	0	HR	5	MDCAB	FM	P	Y		Y	FEW MN
	56-120	C	25Y 72	10YR58 68	M	D	05Y 62	Y	0	0		0	WKCAB	FM	P	Y		Y	FEW MN