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ISLE OF WIGHT UNITARY DEVELOPMENT PLAN
OBJECTOR SITES
Land around Gunville

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 GUNVILLE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 29.1 hectares of land around the periphery of Gunville, near Carisbrooke 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 five 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 and rough grassland as well as one maize field to the west of Gunville. Objector Site 4 consists entirely of woodland (0.8 ha) which is mapped as 'Other land'. As a consequence the findings have not been shown on an ALC summary table. The area shown as 'Agricultural Land Not Surveyed' to the north 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 5 inclusive.

Table 1: Area of grades - Objector Site 1

Grade/Other land	Area (hectares)	% site area
3b	8.5	100
Total site area	8.5	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
3b	1.8	100
Total site area	1.8	100

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

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a 3b 4 Agricultural land not surveyed	0.4 4.4 2.0 3.3	5.9 64.7 29.4 -	4.0 43.5 19.8 32.7
Total surveyed area	6.8	100	67.3
Total site area	10.1	-	100

Table 4: Area of grades - Objector Site 5

Grade/Other land	Area (hectares)	% site area
3b	1.2	100
Total site area	1.2	100

Table 5: Area of grades and other land - Total land surveyed around Gunville

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a 3b 4 Other land Agricultural land not surveyed	3.3 19.7 2.0 0.8 3.3	13.2 78.8 8.0 - -	11.3 67.8 6.9 2.7 11.3
Total surveyed area Total site area	25.0 29.1	100 -	86.0 100

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. In total, 25 borings and three soil pits were described.

8. The agricultural land at this site is classified mainly as Subgrade 3b (moderate quality) with smaller areas of Subgrade 3a (good quality) and Grade 4 (poor quality). All the soil profiles suffer from soil wetness and/or workability problems to varying degrees. The majority of soils

comprise medium textured loamy topsoils which overlie similar, and sometimes heavier, subsoils. These tend to pass to poorly structured clay which acts to impede soil drainage. The depth to these clayey horizons determines the severity of the wetness restriction and therefore the ALC grade. Soil wetness has the effect of causing waterlogging which will restrict seed germination and growth as well as limiting the timing of cultivations. Wet soils such as these are also susceptible to structural damage through trafficking by agricultural machinery and grazing livestock, especially in the Grade 4 unit where topsoils consist of clay and workability restrictions act in conjunction with soil wetness.

FACTORS INFLUENCING ALC GRADE

Climate

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

10. 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).

11. 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.

12. 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.

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SZ 481 892	SZ 476 888
Altitude	m, AOD	20	30
Accumulated Temperature	day°C (Jan-June)	1543	1532
Average Annual Rainfall	mm	860	857
Field Capacity Days	days	178	177
Moisture Deficit, Wheat	mm	109	108
Moisture Deficit, Potatoes	mm	103	102
Overall climatic grade	N/A	Grade 1	Grade 1

13. The combination of rainfall and temperature at this site mean that the area is relatively dry and warm and that there is no overall climatic limitation. Other local climatic factors such as exposure and frost risk are not believed to have a significant effect on the site. The site is climatically Grade 1.

Site

14. The agricultural land at this site lies at an altitude of 20–45m AOD and is flat or gently sloping towards the north. Other site limitations, such as flooding or microrelief, do not affect land quality.

Geology and soils

15. The most detailed published geological information (BGS, 1976) shows the majority of the site to lie over interbedded clays, loams, sands and shales known as the Hamstead Beds. A more clayey/marly deposit is mapped in the most southerly part of the western block which is known as the Bembridge Marls.

16. The most recently published soil information for the site shows the majority of the survey area to be mapped as the Wickham 4 association except for the small area in the most southerly part of the western block which is mapped as the Bursledon association. The former is 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). The latter is described as 'deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging associated with deep coarse loamy soils variably affected by groundwater. Some slowly permeable seasonally waterlogged loamy over clayey soils. Landslips and associated irregular terrain locally' (SSEW, 1983).

AGRICULTURAL LAND CLASSIFICATION

17. 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.

18. 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.

19. The agricultural land at this site is classified mainly as Subgrade 3b (moderate quality) with smaller areas of Subgrade 3a (good quality) and Grade 4 (poor quality). The entire site is affected by soil wetness and/or workability problems to varying degrees.

Subgrade 3a

20. Good quality agricultural land (Subgrade 3a) is relatively restricted in its extent (measuring 3.3 hectares in area). This land is mapped as a small band which lies north of the dismantled railway line in the west of the site. Soil profiles within this unit comprise calcareous and non-calcareous, medium clay loam or medium silty clay loam topsoils which are stoneless or slightly stony. These overlie similar but slightly heavier textured upper subsoils which show evidence of impeded drainage in the form of gleying. Lower subsoils are similar (or occasionally more clayey with depth) to the horizons above although some profiles are impenetrable to the soil auger at depths in the range 59–70 cm. On the whole, soil drainage is impeded slightly to the extent that a Wetness Class of II or III is appropriate which, when combined with local climatic conditions, gives rise to a land classification of Subgrade 3a on the basis of soil wetness and workability. Pit 2 (see Appendix II) is typical of these soils. Soil wetness has the effect of causing waterlogging which will restrict seed germination and

growth as well as limiting the timing of cultivations. Wet soils such as these are also susceptible to structural damage through trafficking by agricultural machinery and grazing livestock.

Subgrade 3b

21. The majority of the site is mapped as Subgrade 3b quality (measuring 19.7 hectares in total) with soil wetness/workability being the main limitation. As in the Subgrade 3a profiles described above, the majority of soils comprise medium clay loam or medium silty clay loam topsoils which are stoneless or very slightly stony. These sometimes overlie shallow upper subsoils which tend to be heavier in texture and show evidence of wetness in the form of gleying. At shallow depths within the profile (22–40cm), clay or calcareous silty clay subsoils are encountered which impede soil drainage. Soil inspection pits 1P and 3P (see Appendix II) reveal these shallow clay lower subsoils to be poorly structured and slowly permeable. Given such evidence of wetness, these soils are placed in Wetness Class IV; when combined with the topsoil textures and the prevailing field capacity day level (178 days) this land is limited to Subgrade 3b.

Grade 4

22. A small area of Grade 4 land (measuring 2.0 hectares) lies immediately north of the dismantled railway line and west of Spring Cottage. The soils within this unit are very similar to those already described above in paragraph 21 except that the topsoil textures are heavier and comprise heavy clay loam, heavy silty clay loam or clay. The soils fall into the same wetness class (Wetness Class IV) but the heavier topsoil textures will restrict the timing of cultivations to a greater extent than in the Subgrade 3b unit as trafficking by agricultural machinery or grazing by livestock may lead to a greater risk of structural damage. As a consequence, this land is restricted to Grade 4.

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SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No's. 344 and 345, Isle of Wight.*
BGS: London.

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

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

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

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

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 pit descriptions

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. **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	DRT	M.REL FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SZ48208930	PGR	N	1	28	28	4	3B	79	-29	82	-21	3B				WE	3B	I55 FLINTS
4	SZ47808920	RGR	S	1	0	22	4	3B	91	-17	103	0	3A				WE	3B	SEE 3P
5	SZ47908920	RGR	S	1	0	52	3	3A	112	4	115	12	3A				WE	3A	SEE 2P & 3P
6	SZ48108920	PGR	N	1	0	56	3	3A	111	3	115	12	3A				WE	3A	SEE 2P & 3P
7	SZ48208920	PGR			0	23	4	3B	90	-18	99	-4	3A				WE	3B	SEE 1P
8	SZ47518909	MZE			27	27	4	3B		0		0					WE	3B	SEE 3P
9	SZ47598909	MZE			27		2	3A	158	50	123	20	1				WE	3A	+WK SEE 2P
11	SZ48208910	PGR			0	22	4	3B	89	-19	99	-4	3A				WE	3B	SEE 1P
12	SZ47408900	MZE			0	26	4	3B		0		0					WE	3B	I70 SEE 3P
13	SZ47508900	MZE			27	55	3	3A		0		0					WE	3A	I70 SEE 2P&3P
14	SZ47608900	PGR			25		2	3A	159	51	123	20	1				WE	3A	+WK SEE 2P
15	SZ47708900	PGR			0	35	4	3B	97	-11	109	6	3A				WE	3B	SEE 3P
16	SZ48208900	RGR	N	1	0	22	4	4	88	-20	98	-5	3A				WE	4	HEAVY TOPSOIL
17	SZ47408890	MZE			27		2	3A		0		0					WE	3A	SEE 2P
18	SZ47508887	MZE			24	24	4	3B	89	-19	100	-3	3A				WE	3B	SEE 3P
19	SZ47608890	PGR			20	30	4	3B	125	17	101	-2	2				WE	3B	SEE 3P
20	SZ47708890	PGR			0	28	4	3B	131	23	108	5	2				WE	3B	SEE 3P
21	SZ48208890	RGR	N	2	0	35	4	3B	102	-6	105	2	3A				WE	3B	SEE 1P
22	SZ47408880	PGR			28		2	3A	65	-43	65	-38	3B				WE	3A	I50 FLINTS QDR
23	SZ47508880	PGR			0	40	4	3B		0		0					WE	3B	SEE 3P
24	SZ47608880	PGR	W	2	0	25	4	4	90	-18	102	-1	3A				WE	4	SEE 3P
25	SZ47708880	PGR	W	3	0	26	4	4	89	-19	101	-2	3A				WE	4	SEE 3P
26	SZ47808880	PGR	W	4	25	25	4	4	88	-20	100	-3	3A				WE	4	SEE 3P
28	SZ47868852	PGR	W	2	38	38	4	3B	103	-5	103	0	3A				WE	3B	I88 SEE 3P
29	SZ47958848	PGR	W	2			1	2	70	-38	70	-33	3B				DR	3B	I45 FLINTS
1P	SZ48208910	PGR			22	22	4	3B	82	-26	87	-16	3B				WE	3B	PIT TO 80
2P	SZ47598909	MZE			25		2	3A	156	48	118	15	1				WE	3A	ALSO WK
3P	SZ47658890	PGR			23	23	4	3B	81	-27	84	-19	3B				WE	3B	PIT TO 80

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	0-28	MZCL	10YR42						0	0	HR	2							
	28-55	ZC	10YR61	10YR56	M	D		Y	0	0	HR	10		P		Y			IMP FLINTY
4	0-22	MZCL	10YR42	10YR58	M	D		Y	0	0		0							
	22-70	C	10YR71	10YR58	M	D		Y	0	0	HR	2		P		Y	Y		
5	0-30	MZCL	10YR41	75YR46	C			Y	0	0		0							
	30-52	HZCL	25Y63	75YR58	C			Y	0	0		0		M					
	52-80	ZC	25Y6261	75YR56	M			Y	0	0	HR	5		P		Y			
6	0-24	MZCL	10YR41	75YR46	C			Y	0	0		0							
	24-56	HZCL	25Y53	10YR58	C			Y	0	0	HR	2		M					
	56-80	ZC	25Y63	75YR58	M			Y	0	0	HR	2		P		Y			
7	0-23	MZCL	10YR41	75YR56	C			Y	0	0		0							
	23-70	ZC	25Y62	75YR68	M			Y	0	0	HR	1		P		Y			
8	0-27	MCL	10YR53						2	0		0						Y	
	27-80	C	10YR52	10YR56	M	D		Y	0	0		0		P		Y			
9	0-27	MZCL	10YR42	10YR42					0	0	HR	2							
	27-70	HZCL	25Y 5262	10YR56	C	D		Y	0	0		0		M					
	70-120	HCL	25Y 6272	10YR58	M	D		Y	0	0	HR	2		M					
11	0-22	MZCL	10YR41	10YR56	M	D		Y	0	0		0							
	22-70	ZC	25YR62	10YR58	M	D		Y	0	0	CH	2		P		Y	Y		
12	0-26	MCL	10YR42	10YR56	C	D		Y	2	0		0							
	26-70	C	10YR52	10YR56	M	D		Y	0	0		0		P		Y			IMP FLINTS
13	0-27	MCL	10YR53						2	0		0						Y	
	27-55	HCL	25Y62	10YR56	M	D		Y	0	0		0		M				Y	
	55-70	C	25Y62	10YR68	M	D		Y	0	0		0		P		Y			IMP FLINTS
14	0-25	MZCL	10YR4151	10YR46	C	D		Y	0	0		0							
	25-47	HZCL	25Y 62	10YR58	M	D		Y	0	0		0		M					
	47-80	HZCL	25Y 5262	10YR5658	M	D		Y	0	0	HR	2		M					FRIABLE
	80-120	HZCL	25Y 62	10YR5658	M	D		Y	0	0	HR	2		M					LOOSE
15	0-20	MZCL	10YR42	10YR46	C	D		Y	0	0		0							
	20-35	HZCL	25Y 62	10YR5658	M	D		Y	0	0		0		M					
	35-70	C	25Y 62	10YR58	M	D		Y	0	0		0		P		Y			
16	0-22	HZCL	10YR41	75YR56	C			Y	0	0	CH	2						Y	
	22-70	ZC	25Y52	10YR58	M			Y	0	0	CH	2		P		Y	Y		
17	0-27	MCL	10YR53						2	0		0						Y	
	27-85	HCL	10YR52	10YR56	M	D		Y	0	0		0							LOOSE
	85-120	HCL	10YR61	75YR56	M	D		Y	0	0		0							FRIABLE

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
18	0-24	MZCL	10YR43						0	0	HR	5							
	24-70	C	25Y62	10YR56	M	D		Y	0	0	HR	5		P			Y		
19	0-20	MZCL	10YR42						0	0		0							
	20-30	HZCL	25Y 6263	10YR58	M	D		Y	0	0		0		M					
	30-80	ZC	25Y 6263	10YR56	M	D		Y	0	0	HR	5		P			Y		
	80-120	C	05Y 6272	10YR58	M	D		Y	0	0	HR	5		P			Y		
20	0-28	MZCL	10YR42	10YR46	C	D		Y	0	0		0							
	28-120	C	25Y 6263	10YR5658	M	D		Y	0	0		0		P			Y		
21	0-23	MZCL	10YR32	75YR56	C			Y	0	0	CH	2						Y	
	23-35	HZCL	10YR51	10YR68	M			Y	0	0	CH	2		M				Y	
	35-80	ZC	10YR71	10YR58	M			Y	0	0	CH	2		P			Y	Y	
22	0-28	MCL	10YR42	75YR46	C	D		Y	5	0	HR	10						Y	
	28-50	HCL	10YR52	75YR56	M	D		Y	0	0	HR	30		M					IMP FLINTY
23	0-27	MCL	10YR42	10YR46	C	D		Y	2	0		0						Y	
	27-40	C	25Y52	10YR56	M	D		Y	0	0		0		M				Y	
	40-100	C	25Y62	10YR58	M	D		Y	0	0		0		P			Y		
24	0-25	HCL	10YR42	10YR46	C	D		Y	0	0	HR	3							
	25-37	C	25Y61	10YR56	M	D		Y	0	0		0		P			Y		
	37-70	C	25Y63	10YR56	M	D		Y	0	0		0		P			Y		
25	0-26	C	10YR42	10YR46	C	D		Y	0	0	HR	2							
	26-70	C	25Y63	10YR56	C	D		Y	0	0		0		P			Y		
26	0-25	C	10YR42						0	0	HR	2							
	25-70	C	05Y72	10YR56	C	D		Y	0	0		0		P			Y		
28	0-26	MCL	10YR43						0	0	HR	3							
	26-38	HCL	10YR54						0	0	HR	10		M					
	38-88	C	25Y72	10YR68	M	D		Y	0	0	HR	5		P			Y		IMP FLINTY
29	0-25	MCL	10YR43						0	0	HR	5							
	25-45	HCL	10YR54						0	0	HR	15		M					IMP FLINTY
1P	0-22	MZCL	10YR41	75YR58	M	D		Y	0	0		0							
	22-60	ZC	25Y61	10YR58	M	D		Y	0	0	CH	10	WKCSAB FM	P	Y		Y	Y	PIT TO 80 CM
2P	0-25	MZCL	10YR42						0	0	HR	3							
	25-69	HCL	10YR6263	10YR56	M	D		Y	0	0		0	MDCSAB FR	M					LOOSE
	69-120	HCL	25Y 6272	10YR58	M	D		Y	0	0		0	MDCSAB FR	M					LOOSE
3P	0-23	MZCL	10YR42	10YR46	C	D		Y	0	0	CH	3						Y	
	23-55	C	25Y63	10YR68	M	D		Y	0	0		0	MDCAB FM	P	Y		Y		PIT TO 80 CM