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WEST SUSSEX MINERALS PLAN
SITE 35: WOODMANCOTE
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
OCTOBER 1993

**WEST SUSSEX MINERALS PLAN
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AGRICULTURAL LAND CLASSIFICATION REPORT**

1.0 Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on an number of sites in West Sussex. The work forms part of MAFF's statutory input to the preparation of the West Sussex Minerals Plan.

1.2 Approximately 31 hectares of land relating to land at Woodmancote, West Sussex was surveyed in October 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 32 soil auger borings and 3 soil inspection pits were assessed in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose longterm limitations on its use for agriculture.

1.3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.

1.4 At the time of the survey the landuse on the site was permanent grassland.

1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:5,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous survey information for this site.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Site</u>	<u>% of Agricultural Area</u>
2	4.9	15.6	16
3b	25.8	81.9	84
Woodland	0.7	2.2	100% (30.7ha)
Non agricultural	0.1	0.3	
Total area of site	31.5	<u>100%</u>	

1.6 Appendix 1 gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.7 The site has been classified as Grade 2 and Subgrade 3B with soil droughtiness being the key limitation. Land classified as Subgrade 3b covers the majority of the site and experiences a significant droughtiness limitation. Profiles typically comprise medium textures throughout, slightly to very stony in the topsoil and very stony in the subsoil. The high volumes of profile stone significantly restrict available water for crop growth such that a grade of 3b is appropriate. A small area of land to the north of the site classified as Grade 2 comprises profiles of medium textured topsoils becoming heavier with depth which are slightly stony throughout. Such soils experience only a slight droughtiness limitation such that a grade of 2 is appropriate.

2.0 Climate

2.1 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.

2.2 The main parameters used in the assessment of the overall climatic limitation are annual average rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

2.4 No local climatic factors such as exposure or frost risk affect the site. However, it should be noted that due to the near coastal location there are relatively high field capacity days and high moisture deficits. These climatic factors interact with soil properties to affect soil wetness and droughtiness limitations.

Table 2 : Climatic Interpolation

Grid Reference :	SU 778 078
Altitude (m) :	25
Accumulated Temperature (days) :	1522
Average Annual Rainfall (mm) :	825
Field Capacity (days) :	173
Moisture Deficit, Wheat (mm) :	111
Moisture Deficit, Potatoes (mm) :	106
Overall Climatic Grade :	1

3.0 Relief

3.1 The site lies at an altitude of approximately 25-35 metres with land sloping gently south to the point of lowest altitude. Nowhere on the site does altitude or relief affect agricultural land quality.

4.0 Geology and Soil

4.1 The relevant geological sheet for the site, Sheet 316 (BGS, 1971) shows the underlying geology to be River Valley Gravel with Coombe Deposits across the entire site.

4.2 The published soils information for the site area, Sheet 6 (SSEW, 1983) shows the majority of the site to comprise soils of the Charity 1 association - "Well drained fine silty and fine silty over clayey soils, locally very flinty, some shallow over flint gravel". (SSEW, 1983). To the south west are mapped soils of the Park Gate association - "Deep stoneless silty soils variably affected by groundwater". (SSEW, 1983). A detailed inspection of soils on the site revealed the presence of very flinty fine loamy over clayey soils with some less stony areas.

5.0 Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

Grade 2

5.3 Very good quality land is mapped to the north west of the site. Soil profiles typically comprise topsoils of medium clay loam containing 2-7% total flints by volume over upper subsoils of heavy clay loam containing 2-12% total flints. Lower subsoils consist of clay containing 1-12% total flints. Pit 2 dug in this mapping unit is typical of these soils. This and the auger borings showed that soils do not suffer any wetness imperfections and are assigned to a wetness class of I. However due to the combination of soil textures, structures, profile stone content and climatic factors soils experience a slight droughtiness limitation and are classified as grade 2. The above factors interact to slightly reduce the available water in the profile for crop growth.

Subgrade 3b

5.4 Moderate quality agricultural land is mapped over the majority of the site. Most soil profiles in this map unit proved to be impenetrable to auger beyond the topsoil. However, soil observation pits 1 and 3, typical of these soils were dug to assess the subsoil. Profiles typically comprise topsoils of medium clay loam containing 5-47% total flints by volume of which 0-13% were > 2 cm diameter. Upper subsoils consist of the same texture containing 52-68% total flints over lower subsoils again of the same texture containing 55-65% total flints. Effective rooting was evident to the base of the pits (70-80 cm). Beyond this depth was impenetrable to dig but it was assumed that rooting could continue to at least 120 cm. Soils do not suffer a wetness limitation and are assigned to wetness class I but due to the very high stone volumes in the profiles, soils suffer a significant droughtiness limitation. These stone volumes in combination with soil textures and climatic factors reduce the available water in the soil and in turn reduce the full yield potential of crops.

5.5 The area marked as non agricultural comprises a small area of dense scrub.

ADAS REFERENCE : 4203/205/93
MAFF REFERENCE : EL 42/00228

Resource Planning Team
Guildford Statutory Group
ADAS Reading

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 on the 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.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, 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.

Sub-grade 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.

Sub-grade 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 (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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture : housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including : private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

REFERENCES

* BRITISH GEOLOGICAL SURVEY (1971), Sheet No.316, Fareham, 1:63,360 scale.

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

* METEOROLOGICAL OFFICE (1989), Climatological Data for Agricultural Land Classification.

* SOIL SURVEY OF ENGLAND AND WALES (1983), Sheet No.6 "Soils of South East England", 1:250,000 scale and accompanying legend.

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

APPENDIX IV

SOIL PIT AND SOIL BORING DESCRIPTIONS

- Contents :
- * Soil Abbreviations : Explanatory Note
 - * Soil Pit Descriptions
 - * Database Printout : Boring Level Information
 - * Database Printout : Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF** : national 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 **HRT** : Horticultural Crops **PGR** : Permanent Pasture **LEY** : Ley Grass **RGR** : Rough Grazing
SCR : Scrub **CFW** : Coniferous Woodland **DCW** : Deciduous Woodland **HTH** : Heathland **BOG** : Bog or Marsh
FLW : Fallow **PLO** : Ploughed **SAS** : Set aside **OTH** : Other

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

4. **GLEYSPL** : Depth in cm to gleying or slowly permeable layers.

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

6. **MB (WHEAT/POTS)** : Moisture Balance.

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

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

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

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

OC : Overall Climate **AE** : Aspect **EX** : Exposure **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** : Soil Erosion Risk **WD** : Combined Soil Wetness/Droughtiness **ST** : Topsoil Stoniness

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
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 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

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

6. STONE LITH : One of the following is used.

HR : all hard rocks and stones MSST : soft, medium or coarse grained sandstone

SI : soft weathered igneous or metamorphic SLST : soft oolitic or dolimitic limestone

FSSST : soft, fine grained sandstone ZR : soft, argillaceous, or silty rocks CH : chalk

GH : gravel with non-porous (hard) stones GS : gravel with porous (soft) stones

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

7. 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 VC : very coarse

- ped shape S : single grain M : massive GR : granular AB : angular blocky SAB : sub-angular blocky PR : prismatic
PL : platy

8. 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

9. SUBS STR : Subsoil structural condition recorded for the purpose of calculating profile droughtiness.

G : good M : moderate P : poor

10. POR : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

11. IMP : If the profile is impenetrable a 'Y' will appear in this column at the appropriate horizon.

12. SPL : Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

13. CALC : If the soil horizon is calcareous, a 'Y' will appear in this column.

14. 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

SOIL PIT DESCRIPTION

Site Name : W.SSX - WOODMANCOTE, 35 Pit Number : 1P

Grid Reference: SU77860778 Average Annual Rainfall : 825 mm
Accumulated Temperature : 1522 degree days
Field Capacity Level : 173 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 29	MCL	10YR42 00	11	45		WCSAB
29- 55	MCL	10YR43 00	0	68		
55-120	MCL	10YR43 00	0	65		

Wetness Grade : 1 Wetness Class : I
Gleying : cm
SPL : No SPL

Drought Grade : 3B APW : 069mm MBW : -42 mm
APP : 054mm MBP : -52 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : W.SSX - WOODMANCOTE, 35 Pit Number : 2P

Grid Reference: SU77700800 Average Annual Rainfall : 825 mm
 Accumulated Temperature : 1522 degree days
 Field Capacity Level : 173 days
 Land Use : Permanent Grass
 Slope and Aspect : 01 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	MCL	10YR42 43	0	6		MDCSAB
28- 48	HCL	10YR56 00	0	4		MDCSAB
48- 85	C	75YR56 00	0	1	F	MDCSAB
85-120	C	10YR54 00	0	1	C	MDCSAB

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 2 APW : 137mm MBW : 26 mm
 APP : 113mm MBP : 7 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : W.SSX - WOODMANCOTE, 35 Pit Number : 3P

Grid Reference: SU77920768 Average Annual Rainfall : 825 mm
 Accumulated Temperature : 1522 degree days
 Field Capacity Level : 173 days
 Land Use : Permanent Grass
 Slope and Aspect : 01 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 29	MCL	10YR42 00	13	47		WCSAB
29- 55	MCL	10YR43 00	0	52		
55-120	MCL	10YR43 00	0	55		

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 3B APW : 080mm MBW : -31 mm
 APP : 062mm MBP : -44 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
				GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB					
1	SU77600810	PGR N	02		1	1	107	-4	107	1	3A			DR	3A	IMP90Q2
1P	SU77860778	PGR			1	1	065	-42	054	-52	3B			DR	3B	PIT 80
2	SU77700810	PGR			1	1	143	32	115	9	2			DR	2	
2P	SU77700800	PGR N	01		1	1	137	26	113	7	2			DR	2	
3	SU77600800	PGR N	02		1	1	031	-80	031	-75	4			DR	4	IMP20Q3B
3P	SU77920768	PGR S	01		1	1	080	-31	062	-44	3B			DR	3B	PIT 70
4	SU77700800	PGR			1	1	138	27	114	8	2			DR	2	
5	SU77800800	PGR N	01		1	1	140	29	117	11	2			DR	2	
6	SU77900800	PGR			1	1	073	-38	073	-33	3B			DR	3B	IMP 45
7	SU77500790	PGR S	01		1	1	051	-60	051	-55	4			DR	4	IMP40Q3B
8	SU77600790	PGR N	02		1	1	039	-72	039	-67	4			DR	4	IMP25Q3B
9	SU77700790	PGR			1	1	039	-72	039	-67	4			DR	4	IMP25Q3B
10	SU77800790	PGR N	01		1	1	039	-72	039	-67	4			DR	4	IMP30Q3B
11	SU77900790	PGR			1	1	132	21	117	11	2			DR	2	
12	SU77500780	PGR S	02		1	1	052	-59	052	-54	4			DR	4	IMP40Q3B
13	SU77600780	PGR S	02		1	1	037	-74	037	-69	4			DR	4	IMP30Q3B
14	SU77700780	PGR S	01		1	1	068	-43	068	-38	3B			DR	3B	IMP50
15	SU77800780	PGR S	01		1	1	042	-69	042	-64	4			DR	4	IMP30Q3B
16	SU77900780	PGR			1	1	054	-57	054	-52	4			DR	4	IMP35Q3B
17	SU78000780	PGR			1	1	052	-59	052	-54	4			DR	4	IMP30Q3B
18	SU78100780	PGR NE	04		1	1	078	-33	081	-25	3B			DR	3B	IMP57
19	SU78200780	PGR			1	1	041	-70	041	-65	4			DR	4	IMP30Q3B
20	SU77800770	PGR S	02		1	1	072	-39	074	-32	3B			DR	3B	IMP55
21	SU77900770	PGR S	01		1	1	040	-71	040	-66	4			DR	4	IMP25Q3B
22	SU78000770	PGR			1	1	043	-68	043	-63	4			DR	4	IMP25Q3B
23	SU78100770	PGR N	01		1	1	041	-70	041	-65	4			DR	4	IMP28Q3B
24	SU78200770	PGR NE	05		1	1	066	-45	066	-40	3B			DR	3B	IMP40
25	SU77800760	PGR S	02		1	1	074	-37	080	-26	3B			DR	3B	IMP70
26	SU77900760	PGR S	02		1	1	073	-38	075	-31	3B			DR	3B	IMP50
27	SU78000760	PGR			1	1	091	-20	099	-7	3A			DR	3A	
28	SU78100760	PGR S	01		1	1	041	-70	041	-65	4			DR	4	IMP30Q3B
29	SU78200760	PGR E	02		1	1	032	-79	032	-74	4			DR	4	IMP20Q3B
30	SU78100750	PGR S	02		1	1	044	-67	044	-62	4			DR	4	IMP30Q3B
31	SU78180752	PGR SE	02	0	025	4	3B	096	-15	097	-9	3A		WE	3B	IMP85
32	SU77530798	PGR N	02		1	1	046	-65	046	-60	4			DR	4	IMP30Q3B

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- PED			----STONES-----			STRUCT/	SUBS	SPL	CALC
				COL	ABUN	CONT	COL.	GLEY	>2				
1	0-29	mc1	10YR42 00					0	0	HR	7		
	29-45	hc1	10YR44 00					0	0	HR	12	M	
	45-90	c	75YR56 00			00MN00 00		0	0	HR	12	M	
1P	0-29	mc1	10YR42 00					11	0	HR	45	WCSAB	FR
	29-55	mc1	10YR43 00					0	0	HR	68		FR M
	55-120	mc1	10YR43 00					0	0	HR	65		FR M
2	0-35	mc1	10YR42 00					0	0	HR	5		
	35-55	mc1	10YR43 00					0	0	HR	3		M
	55-75	hc1	10YR43 00					0	0	HR	2		M
	75-120	c	10YR56 00			00MN00 00		0	0	HR	2		M
2P	0-28	mc1	10YR42 43					0	0	HR	6	MDCSAB	FR
	28-48	hc1	10YR56 00					0	0	HR	4	MDCSAB	FR M Y
	48-85	c	75YR56 00	00MN00 00 F		75YR54 00		0	0	HR	1	MDCSAB	FM M
	85-120	c	10YR54 00	75YR56 00 C		75YR54 00		0	0	HR	1	MDCSAB	FM M Y
3	0-20	mc1	10YR42 00					0	0	HR	15		
3P	0-29	mc1	10YR42 00					13	0	HR	47	WCSAB	FR
	29-55	mc1	10YR43 00					0	0	HR	52		FR M
	55-120	mc1	10YR43 00					0	0	HR	55		FR M
4	0-30	mc1	10YR43 00					0	0	HR	5		
	30-48	hc1	10YR44 00					0	0	HR	3		M
	48-120	c	10YR56 00			00MN00 00		0	0	HR	1		M
5	0-35	mc1	10YR42 52					0	0	HR	2		
	35-85	c	75YR56 00	10YR53 00 F		00MN00 00		0	0	HR	2		M
	85-120	c	75YR58 00	00MN00 00 F				0	0	HR	5		M
6	0-45	mzc1	10YR42 00					0	0	HR	15		
7	0-23	mc1	10YR43 00					0	0	HR	20		
	23-40	mc1	10YR43 44					0	0	HR	40		M
8	0-25	mc1	10YR42 00					0	0	HR	15		
9	0-25	mc1	10YR42 00					7	0	HR	15		
10	0-30	mc1	10YR42 43					0	0	HR	30		
11	0-30	mzc1	10YR43 00					0	0	HR	6		
	30-48	hc1	10YR44 00					0	0	HR	3		M
	48-110	c	75YR56 00					0	0	HR	1		M
12	0-10	mzc1	10YR32 00					0	0	HR	5		
	10-35	mc1	10YR43 00					0	0	HR	30		M
	35-40	mc1	10YR43 00					0	0	HR	40		M

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES-----			STRUCT/	SUBS			
				COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR
13	0-25	mc1	10YR43 00					0	0	HR	30				
	25-30	mc1	10YR44 00					0	0	HR	40			M	
14	0-33	mc1	10YR43 00					0	0	HR	15				
	33-50	mc1	10YR44 00					0	0	HR	40			M	
15	0-25	mc1	10YR42 00					0	0	HR	20				
	25-30	mc1	10YR43 00					0	0	HR	40			M	
16	0-35	mc1	10YR42 00					0	0	HR	15				
17	0-30	mzc1	10YR43 00					0	0	HR	10				
18	0-30	mc1	10YR42 00					4	0	HR	11				
	30-57	mc1	10YR56 00					0	0	HR	25			M	
19	0-30	mc1	10YR32 00					4	0	HR	25				
20	0-35	mc1	10YR43 00					0	0	HR	15				
	35-55	mc1	10YR44 00					0	0	HR	40			M	
21	0-25	mc1	10YR42 00					3	0	HR	12				
22	0-25	mzc1	10YR43 00					0	0	HR	10				
23	0-28	mc1	10YR32 00					4	0	HR	20				
24	0-29	mc1	10YR42 00					3	0	HR	10				
	29-42	mc1	10YR56 00					0	0	HR	10			M	
25	0-30	mc1	10YR42 00					0	0	HR	15				
	30-70	mc1	10YR43 53					0	0	HR	50			M	
26	0-30	mc1	10YR42 00					3	0	HR	15				
	30-55	mc1	10YR56 00					0	0	HR	30			M	
27	0-30	mzc1	10YR42 00					8	0	HR	15				
	30-45	mzc1	10YR43 00					0	0	HR	12			M	
	45-65	hc1	10YR54 00					0	0	HR	15			M	
28	0-28	mc1	10YR32 00					4	0	HR	20				
29	0-20	mc1	10YR32 00					3	0	HR	12				
30	0-30	mc1	10YR32 00					4	0	HR	20				
31	0-25	mc1	25Y 42 00	10YR58 00	C			Y	1	0	HR	5			
	25-50	c	10YR53 00	10YR56 52	M			Y	0	0	HR	5	P	Y	Y
	50-85	c	10YR53 00	10YR56 51	M			Y	0	0	HR	10	P	Y	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS						
				COL	ABUN	CONT	COL.	GLEY >2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC	
32	0-30	mc1	10YR42 00							0	0	HR	15					