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WEST SUSSEX MINERALS PLAN
SITE 31: LOWER CHANCTON FARM
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
NOVEMBER 1993

**WEST SUSSEX MINERALS PLAN
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1.0 Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on a 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 25 hectares of land relating to Site 31 around Lower Chancton Farm near Washington was surveyed during November 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 23 soil auger borings and 2 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 long-term 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.

1.5 At the time of the survey the land use on the site was a mixture of permanent grassland and stubble turnips.

1.6 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 1:5000. 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 Total Site</u>	<u>% of Agricultural Area</u>
2	14.2	56.8	58.8
3a	1.3	5.2	5.4
3b	7.7	30.8	31.8
4	1.0	3.9	4.0
Urban	0.5	2.0	100.0 (24.2 ha.)
Agricultural buildings	0.3	1.3	
Total area of site	25.0	100.0	

1.7 Appendix 1 gives a general description of the grades and 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.

1.8 The site has been classified as Grades 2, 4 and Subgrades 3a and 3b, with the key limitations of workability, gradient, soil droughtiness and soil wetness respectively. The majority of the site is Grade 2, very good quality land. These soils comprise medium clay loam topsoils which become heavier and occasionally sandy with depth. These soils are stoneless and well drained, but are downgraded to Grade 2 due to a slight workability limitation related to the interaction of topsoil texture with climatic factors. The area of Subgrade 3a land experiences a moderate soil droughtiness limitation. These soils have a higher sand content throughout the profile, and the combination of soil textures and structures and the local climatic regime means that they have limited reserves of available water within the profile for extraction by crops. The Subgrade 3b land shows a severe drainage imperfection due to the presence of a poorly structured clay subsoils at shallow depth, which in a relatively wet area gives rise to moderate quality agricultural land. In the north of the site, slopes greater than 11 degrees occur, which limit this land to no better than Grade 4.

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 an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (degree days Jan-June), 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, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. In the locality of this particular site, field capacity days are relatively high, with correspondingly low moisture deficits. The likelihood of soil wetness problems is thus enhanced.

Table 2 : Climatic Interpolation

Grid Reference :	TQ 137 134
Altitude (m) :	65
Accumulated Temperature (days) :	1465
Average Annual Rainfall (mm) :	886
Field Capacity (days) :	183
Moisture Deficit, Wheat (mm) :	101
Moisture Deficit, Potatoes (mm) :	93
Overall Climatic Grade :	1

3.0 Relief

3.1 The site lies at an altitude ranging between 45 and 65 metres. In the north of the site steep slopes measured using an optical reading clinometer as greater than 11 degrees pose a limitation on agricultural use.

4.0 Geology and Soil

4.1 The relevant geological sheet for the site (BGS Sheet 318/333 Brighton and Worthing 1984) shows the underlying geology to be made up of Head Deposits, Gault Clay and Folkestone Beds.

4.2 The published soils information for the area (SSEW Sheet 6, Soils of South East England 1983) shows the soils on the site as two distinct associations, namely Fyfield 1 and Wickham 2. Fyfield 1 soils are described as well drained coarse and fine loamy soils over interbedded sands and sandstones. Similar fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging (SSEW, 1983). Wickham 2 soils are described as slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils (SSEW, 1983). Detailed field examination broadly confirmed this, particularly the existence of two different soil types.

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.

5.3 Grade 2 The majority of the agricultural land on the site has been classified as Grade 2, very good quality land, with workability as the main limitation. Topsoils within this mapping unit typically comprise medium clay loams although the nature of the subsoils does differ across the site. On the gentle lower slopes and in the low-lying regions in the north and west of the site topsoils tend to overlie heavier textured subsoils comprising heavy clay loams above clay. On the slightly higher ground in the north of the site, the subsoils are coarse textured medium sandy loams over medium loamy sands, occasionally becoming sandy clay loams at depth. Although these soils are well drained, Wetness Class I, and on the whole show no signs of a droughtiness imperfection, they are classified as Grade 2 due to a workability limitation. This arises due to the combination of topsoil texture and the climatic regime for the locality (in particular the relatively high field capacity days), which means that there is a slight restriction on the frequency with which these soils can be worked effectively with machinery or grazed by livestock.

5.4 Subgrade 3a A small area (1.3 ha.) of land in the north of the site has been classified as Subgrade 3a, good quality land, with soil droughtiness as the main limitation. A soil inspection pit (pit 2) confirmed that the soils in this mapping unit are of a coarse-textured nature. Soil profiles typically comprise medium sandy loam topsoils overlying medium loamy sands with medium sand at depth. Likewise, these soils are well drained, but show a moderate droughtiness imperfection. Although these soils show favourable substructural conditions, a combination of coarse soil textures and the local climatic regime means that there is a restriction on the amount of profile available water for plant growth such that crops may suffer slight droughtiness. The range of crops that can tolerate such conditions is also restricted. Consequently, this land can be classified as no better than Subgrade 3a.

5.5 Subgrade 3b Approximately 8 hectares of land in the lower lying reaches of the south of the site has been classified as Subgrade 3b, moderate quality land, with soil wetness as the main limitation. Soil profiles are typically gleyed throughout (strong evidence of a drainage imperfection), comprising medium clay loam topsoils overlying clay. A subsequent soil inspection pit (pit 1) in this mapping unit proved the existence of a poorly structured clay subsoil, which becomes moderately stony below 56cm. This clay subsoil, which satisfies the criteria for identification as a slowly permeable layer, impedes both drainage and root penetration and development. This causes these soils to be assigned to Wetness Class IV. When considering Wetness Class alongside topsoil texture and the field capacity level (days) for the site, these soils experience moderate soil wetness and have a resultant classification of Subgrade 3b. There are some soils within this mapping unit with a heavier topsoil texture and a resultant classification of Grade 4, although these are not regarded as sufficiently significant to warrant mapping as a separate unit.

5.6 Grade 4 A small area of land (1.0 ha.) in the north of the site covers slopes which have a gradient exceeding 11 degrees. Steep gradients have a significant effect on mechanised farm operations since most conventional agricultural machinery performs more safely and effectively on level ground. Steep slopes can also increase the potential risk of soil erosion, particularly in the case of sandy soils which have a relatively low bearing strength. Because the slopes in this particular area of the site have a gradient of 12-13 degrees there is a severe limitation on agricultural use. Therefore, this land can be classified as no better than Grade 4.

5.7 Urban and Agricultural Buildings The area marked as urban include a tarmac road and a private dwelling. Also there are some agricultural buildings on the site.

ADAS Ref:
MAFF Ref:

4205/247/93
EL 42/228
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.

REFERENCES

- * British Geological Survey (1957), Sheet No.317, Chichester, 1:50,000
- * 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 (1982), Sheet No.6, Soils of South East England, 1:250,000, 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 SHT : Sugar Beet FCD : Fodder Crops LIN : Linseed
FKT : 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. GLEY/SPL : 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
FSST : 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 : WSUSSEX MINS SITE 31 Pit Number : 1P

Grid Reference: SU 0 Average Annual Rainfall : 886 mm
 Accumulated Temperature : 1465 degree days
 Field Capacity Level : 183 days
 Land Use : Permanent Grass
 Slope and Aspect : 03 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	MCL	10YR42 00	0	1	F	WCSAB
25- 38	HCL	25Y 53 00	0	2	C	MCSAB
38- 56	C	25Y 63 00	0	2	M	MCAB
56-120	C	25Y 63 00	0	35	M	MCAB

Wetness Grade : 3B Wetness Class : IV
 Gleying : 000 cm
 SPL : 038 cm

Drought Grade : 2 APW : 119mm MBW : 18 mm
 APP : 103mm MBP : 10 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : WSUSSEX MINS SITE 31 Pit Number : 2P

Grid Reference: SU 0 Average Annual Rainfall : 886 mm
 Accumulated Temperature : 1465 degree days
 Field Capacity Level : 183 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MSL	10YR42 00	0	0		MDCSAB
30- 38	LMS	75YR46 00	0	0		MCAB
38-120	MS	10YR58 00	0	0		WKCSAB

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 3A APW : 093mm MBW : -8 mm
 APP : 077mm MBP : -16 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB					
1	SU13401340	PGR E	01		1	2	143	42	117	24	1		WK	2	H3-Q C
1P	SU13761320	PGR N	03	025 038	4	3B	115	14	100	7	2		WE	3B	
2	SU13501340	PGR			1	2	147	46	116	23	1		WK	2	
2P	SU13551330	PGR N			1	1	93	-8	77	-16	3A		DR	3A	
3	SU13601340	PGR			1	1	99	-2	84	-9	3A		DR	3A	V. SANDY
4	SU13701340	PGR			1	1	125	24	101	8	2		DR	2	
5	SU13601343	PGR S	06	055	1	2	145	44	113	20	1		WK	2	LMS 95
6	SU13901340	OSR		085	1	2	155	54	117	24	1		WK	2	
7	SU14001340	PGR			1	1	130	29	99	6	2		DR	2	
8	SU13401330	PGR E	01	045 045	3	3A	93	-8	101	8	3A		WE	3A	IMPEN 65
9	SU13501330	PGR S	02		1	2	147	46	116	23	1		WK	2	Q HCL TS
11	SU13701330	OSR			1	2	156	55	118	25	1		WK	2	
12	SU13801330	OSR		040 040	3	3B	118	17	109	16	2		WE	3B	
14	SU14001330	PGR			1	2	154	53	114	21	1		WK	2	
15	SU14101330	PGR	04		1	1	104	3	82	-11	3A		DR	3A	
16	SU14201330	PGR	02		1	2	150	49	110	17	1		WK	2	
17	SU13501320	PGR S	02	020	4	4	123	22	101	8	2		WE	4	PLSTC 50
18	SU13601320	PGR S	02	030	4	4	124	23	100	7	2		WE	4	
19	SU13701320	PGR	01	030 030	4	4	110	9	116	23	2		WE	4	IMPHR80
20	SU13801320	PGR	03	020 040	4	3B	144	43	120	27	1		WE	3B	
21	SU13901320	PGR	01		1	1	129	28	109	16	2		DR	2	
22	SU14001320	PGR	01		1	3A	135	34	111	18	1		WK	3A	
23	SU14101320	PGR	02	035 045	4	3B	141	40	117	24	1		WE	3B	
24	SU13901310	PGR		020 035	4	4	139	38	114	21	1		WE	4	
25	SU13301323	PGR S	01	025	4	3B	125	24	101	8	2		WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/	SUBS	CALC			
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH				TOT	CONSIST	STR
1	0-25	mc1	10YR43 00						0	0	0						
	25-60	c	10YR54 00						0	0	0		M				
	60-78	hc1	10YR54 00						0	0	0		M				
	78-120	c	10YR54 00						0	0	HR	4	M				
1P	0-25	mc1	10YR42 00	75YR58 00	F				0	0	HR	1	WCSAB	FR			
	25-38	hc1	25Y 53 00	10YR58 00	C			Y	0	0	HR	2	MCSAB	FM	M		
	38-56	c	25Y 63 00	10YR58 00	M			OOMN00 00	Y	0	0	HR	2	MCAB	FM	P	Y
	56-120	c	25Y 63 00	10YR58 00	M			OOMN00 00	Y	0	0	HR	35	MCAB	FM	P	Y
2	0-35	mc1	10YR42 00						0	0	0						
	35-55	sc1	10YR52 00						0	0	0		M				
	55-80	ms1	10YR54 00						0	0	0		M				
	80-120	lms	10YR56 00						0	0	0		G				
2P	0-30	ms1	10YR42 00						0	0	0		MDCSAB	FR			
	30-38	lms	75YR46 00						0	0	0		MCAB	FR	G		
	38-120	ms	10YR58 00						0	0	0		WKCSAB	VF	G		
3	0-25	ms1	10YR43 00						0	0	0						
	25-65	lms	10YR56 00						0	0	0		G				
	65-120	ms	10YR76 00						0	0	0		G				
4	0-35	ms1	10YR43 00						0	0	0						
	35-50	ms1	10YR56 00						0	0	0		M				
	50-75	lms	10YR66 00						0	0	0		G				
	75-85	ms1	10YR58 00						0	0	0		M				
	85-120	ms	10YR76 00						0	0	0		G				
5	0-25	mc1	10YR33 00						0	0	0						
	25-55	ms1	10YR54 00						0	0	HR	2	M				
	55-95	mc1	10YR53 00	10YR58 00	C			Y	0	0	0		M				
	95-120	lms	10YR56 00					Y	0	0	0		G				
6	0-25	mc1	10YR42 00						0	0	0						
	25-70	hc1	10YR54 00						0	0	0		M				
	70-85	sc1	10YR54 00						0	0	0		M				
	85-120	sc1	10YR52 00	10YR58 61	C			Y	0	0	0		M				
7	0-25	ms1	10YR43 00						0	0	0						
	25-50	ms1	10YR54 00						0	0	0		M				
	50-120	lms	10YR64 00						0	0	0		G				
8	0-28	mc1	10YR43 00						0	0	HR	2					
	28-45	c	10YR54 00	10YR56 00	F				0	0	HR	2	M				
	45-60	c	10YR54 53	10YR56 00	M			Y	0	0	HR	2	P	Y	Y		
	60-65	c	10YR53 00	10YR58 52	M			Y	0	0	HR	10	P	Y	Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
9	0-20	mc1	75YR42 00	10YR56	00	F			0	0	0						
	20-55	hc1	10YR54 00						0	0	0		M				
	55-90	c	10YR56 00						0	0	0		M				
	90-120	hc1	10YR56 00						0	0	HR	1	M				
11	0-30	mc1	10YR43 00						0	0	0						
	30-120	hc1	10YR54 00						0	0	0		M				
12	0-30	hc1	10YR42 00						0	0	0						
	30-40	c	10YR52 00	10YR58	00	F			0	0	0		M				
	40-100	c	10YR52 00	10YR58	61	M		Y	0	0	0		P	Y		Y	
14	0-30	mc1	10YR43 00						0	0	0						
	30-120	sc1	10YR44 00						0	0	0		M				
15	0-30	ms1	10YR33 00						0	0	0						
	30-60	lms	10YR44 00						0	0	0		M				
	60-90	lms	10YR58 00						0	0	0		G				
	90-120	ms	10YR58 00						0	0	0		G				
16	0-25	sc1	10YR33 00						0	0	0						
	25-120	sc1	10YR46 00						0	0	0		M				
17	0-20	hc1	10YR41 00	10YR58	00	M		Y	0	0	0						
	20-50	c	10YR51 00	10YR58	00	M		Y	0	0	0		P	Y		Y	
	50-120	c	10YR51 00	10YR66	58	M		Y	0	0	HR	2	P	Y		Y	
18	0-30	c	25Y 52 00	10YR58	00	M		Y	0	0	HR	1					
	30-60	c	10YR53 00	10YR56	51	M	00M00	Y	0	0	HR	3	P	Y		Y	
	60-120	hc1	10YR53 00	10YR66	52	M		Y	0	0	HR	1	P	Y		Y	
19	0-30	hzc1	10YR33 00						0	0	0						
	30-80	zc	10YR51 00	10YR58	00	C		Y	0	0	HR	1	M			Y	
20	0-20	mzc1	10YR33 00						0	0	0						
	20-40	hzc1	10YR51 00	10YR68	00	C		Y	0	0	0		M				
	40-120	c	10YR51 00	10YR68	00	C		Y	0	0	0		M			Y	
21	0-30	mc1	10YR33 00						0	0	0						
	30-60	ms1	10YR44 00						0	0	0		M				
	60-90	lms	10YR66 00						0	0	0		G				
	90-120	ms	10YR66 00						0	0	0		G				
22	0-25	hc1	10YR41 00	10YR68	00	F		Y	0	0	0						
	25-40	hc1	10YR46 00					Y	0	0	0		M				
	40-65	sc1	10YR56 00					Y	0	0	0		M				
	65-100	lms	10YR56 00					Y	0	0	0		G				
	100-120	lcs	10YR56 00					Y	0	0	0		G				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS						
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
23	0-25	mc1	10YR33 00							0	0	0						
	25-35	hc1	10YR46 00							0	0	0		M				
	35-45	hc1	10YR51 00	10YR58	00	C			Y	0	0	0		M				
	45-120	c	10YR51 00	10YR58	00	C			Y	0	0	0		M				Y
24	0-20	hc1	10YR33 00	10YR58	00	F				0	0	0						
	20-35	hc1	10YR51 00	10YR58	00	C			Y	0	0	0		M				
	35-60	zc	10YR51 00	10YR58	00	C			Y	0	0	0		M				Y
	60-120	c	10YR78 00	10YR72	00	C			Y	0	0	0		M				Y
25	0-25	mc1	10YR42 41	10YR56	00	C				Y	0	0	0					
	25-60	c	10YR52 00	10YR58	51	M	00M00	00	Y	0	0	HR	5		P	Y		Y
	60-120	c	10YR53 52	10YR56	00	M			Y	0	0	0			P	Y		Y