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WEST SUSSEX MINERALS PLAN  
SITE 28: O Ving  
AGRICULTURAL LAND CLASSIFICATION  
ALC MAP REPORT  
SEPTEMBER 1993

**WEST SUSSEX MINERALS PLAN  
SITE 28: O Ving  
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 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 Approximately 35 hectares of land relating to Site 28, South of Tangmere Road, Oving near Chichester was surveyed during September 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 35 soil auger borings and 2 soil inspection pit 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.

1.4 At the time of the survey the majority of the land on the site was cereals which had been recently harvested, with a small area of pasture in the North of the site.

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 1:5000. It is accurate at this scale, but any enlargement would be misleading. This map supercedes any previous survey information.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of site</u>	<u>% of Agricultural Area</u>
2	24.4	72.4	73.1
3B	9.0	26.7	26.9
			<u>100.0</u> (33.4 ha)
Non agricultural land	0.1	0.3	
Open water	0.2	0.6	
Total	33.7	<u>100.0</u>	

1.6 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.

1.7 The site has been classified as Grade 2 and Subgrade 3B with soil droughtiness as the key limitation. The area shown as grade 2 is only slightly limited by droughtiness; there is insufficient available water in the profile to qualify for a higher grade given the textures and structures that occur in the subsoil. Soils tend to be of a medium clay loam texture becoming heavier with depth. The area shown as Subgrade 3B is more severely limited due to the presence of stony subsoils. The high stone volumes significantly restrict profile available water for plant growth and restrict the range of crops that can tolerate such conditions.

## 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.

Table 2 : Climatic Interpolations

Grid Reference :	SU 889 050
Altitude (m) :	13
Accumulated Temperature (days) :	1534
Average Annual Rainfall (mm) :	782
Field Capacity (days) :	160
Moisture Deficit, Wheat (mm) :	116
Moisture Deficit, Potatoes (mm) :	112
Overall Climatic Grade :	1

## 3.0 Relief

3.1 The site is level at an altitude of 13 metres. Relief and altitude do not pose any limitation to agricultural land use on any part of the site.

## 4.0 Geology and Soil

4.1 The published geological sheet for the site shows the underlying geology to be Valley Gravel.

4.2 The relevant soils information for the site describes the soils as deep stoneless well drained silty soils and similar soils affected by groundwater. Detailed field examination of the soils in the site broadly confirm this, although the soils in some parts of the site were found to have very stony subsoils.

## 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 is shown on the attached sample point map.

5.3 Grade 2 : The majority of agricultural land on the site has been classified as Grade 2, very good quality agricultural land with soil droughtiness as the key limitation. Soils typically comprise medium silty clay loam topsoils with medium clay loam subsoils which become heavier with depth. There is some evidence of a drainage imperfection in these soils usually below 80 cm, yet this does not pose any limitation to agricultural use. Pit 1 revealed the substructural condition for these soils as moderate. The soils are stoneless, but are limited by a slight droughtiness imperfection due to the combination of soil structures and textures with the local climatic regime; with resultant insufficient available water within the profile.

5.4 Subgrade 3B : The remainder of the site is graded as 3B, moderate quality agricultural land. The majority of soil inspections in this unit proved to be impenetrable below the topsoil. A subsequent soil inspection pit (Pit 2) revealed the presence of a very stony subsoil, which became impenetrable to digging at 80cm. Above this, the topsoil consists of a medium clay loam containing a total of 7% flints (2% > 2cm). A gleyed clay stony subsoil commences at 31cm, containing 36% flints. From 51cm down to 90cm there is a heavy clay loam horizon containing 45% flints. On studying the pit, it became evident that rooting only continued down to a depth of 80cm, thus the droughtiness calculation was cut off at this depth with a resultant grade of 3B. The nature of the underlying geology of the site has made it possible to assume that profiles will not become any less stony below this level. When calculating droughtiness with a scenario of a further 15cm of rooting down to 95cm, the droughtiness grade is still Subgrade 3B. Although the profiles are well drained, wetness class I, they suffer significant droughtiness problems as evidenced by the high profile stone contents which will restrict available water for crop growth. Therefore, this land can be classified as no better than Subgrade 3B.

ADAS REFERENCE : 4203/177/93  
MAFF REFERENCE : EL 42/000228

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 (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 Wales, 1983. Soils map, Sheet 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

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 : W. SUSSEX - 28, OVING Pit Number : 1P

Grid Reference: SUB9090477 Average Annual Rainfall : 782 mm  
 Accumulated Temperature : 1534 degree days  
 Field Capacity Level : 160 days  
 Land Use :  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 33	MZCL	10YR43 00	0	1		MDMSAB
33- 43	MCL	75YR46 00	0	2	F	WDCSAB
43- 67	HCL	75YR46 00	0	1	F	WDCSAB
67-120	C	75YR53 00	0	0	M	MDCSAB

Wetness Grade : 1 Wetness Class : I  
 Gleying : 067 cm  
 SPL : No SPL

Drought Grade : 2 APW : 148mm MBW : 32 mm  
 APP : 121mm MBP : 9 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : W. SUSSEX - 28, OVING Pit Number : 2P

Grid Reference: SU89350498 Average Annual Rainfall : 782 mm  
Accumulated Temperature : 1534 degree days  
Field Capacity Level : 160 days  
Land Use :  
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 31	MCL	10YR32 00	2	7		WDCSAB
31- 51	C	10YR41 00	0	36	C	
51- 80	HCL	25Y 52 00	0	45	F	

Wetness Grade : 2 Wetness Class : II  
Gleying : 031 cm  
SPL : No SPL

Drought Grade : 3B APW : 089mm MBW : -27 mm  
APP : 091mm MBP : -21 mm

FINAL ALC GRADE : 3B  
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M. REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS	
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP					MB
1	SU89300530	PGR	000		1	2	053	-63	053	-59	4		DR	4	IMPEN 30 SEE2P
1P	SU89090477	STB	067		1	1	148	32	121	9	2		DR	2	PIT 120
2	SU89000520	STB	000		1	2	144	28	123	11	2		DR	2	NO GLEY
2P	SU89350498	STB	031		2	2	089	-27	091	-21	3B		DR	3B	PIT 90
3	SU89200520	STB	000		1	2	115	-1	121	9	3A		DR	3A	IMPEN 80
4	SU89200520	PGR	000		1	2	062	-54	062	-50	4		DR	4	IMPEN 35 SEE2P
5	SU89000510	STB	100		1	2	000	0	000	0			DR	2	
6	SU89100510	STB	085		1	2	144	28	121	9	2		DR	2	WK ALSO
7	SU89200510	STB	000		1	2	094	-22	105	-7	3B		DR	3B	IMPEN 65
8	SU89300500	PGR	000		1	2	053	-63	053	-59	4		DR	4	IMPEN 30 SEE2P
9	SU88900500	STB	060		1	1	143	27	117	5	2		DR	2	
10	SU89000500	STB	065		1	1	142	26	118	6	2		DR	2	
11	SU89100500	STB	070		1	1	143	27	118	6	2		DR	2	
12	SU89200500	STB	060		1	1	140	24	116	4	2		DR	2	
13	SU89300500	STB	000		1	1	061	-55	061	-51	4		DR	4	IMPEN 40 SEE2P
14	SU89400500	STB	000		1	1	065	-51	065	-47	4		DR	4	IMPEN 42 SEE2P
15	SU88900490	STB	000		1	2	142	26	120	8	2		DR	2	WK ALSO
16	SU89000490	STB	000		1	1	147	31	121	9	2		DR	2	
17	SU89100490	STB	000		1	1	145	29	116	4	2		DR	2	
18	SU89200490	STB	080		1	1	143	27	117	5	2		DR	2	GLEY 80
19	SU89300490	STB	065	065	2	2	145	29	118	6	2		DR	2	Q SPL
20	SU89400490	STB	027		1	1	053	-63	053	-59	4		DR	4	IMPEN 30 SEE2P
21	SU88900480	STB	000		1	2	090	-26	093	-19	3B		DR	3B	IMPEN 55
22	SU89000480	STB	000		1	2	139	23	118	6	2		DR	2	
23	SU89100480	STB	000		1	2	143	27	123	11	2		DR	2	
24	SU89200480	STB	000		1	2	143	27	121	9	2		DR	2	
25	SU89300480	STB	000		1	1	142	26	121	9	2		DR	2	
26	SU89400480	STB	025		2	3A	064	-52	064	-48	4		DR	4	IMPEN 35 SEE2P
27	SU89000470	STB	000		1	1	154	38	116	4	2		DR	2	Q GLEY
28	SU89100470	STB	000		1	1	100	-16	116	4	3A		DR	2	
29	SU89200470	STB	000		1	1	146	30	118	6	2		DR	2	
30	SU89300470	STB	000		1	1	145	29	120	8	2		DR	2	
31	SU89400470	STB	000		1	1	081	-35	081	-31	3B		DR	3B	IMPEN 50 SEE2P
32	SU89500470	STB	000		1	1	052	-64	052	-60	4		DR	4	IMPEN 28 SEE2P
33	SU89000460	STB	050		1	1	108	-8	116	4	3A		DR	3A	IMPEN 80
34	SU89100460	STB	000		1	1	113	-3	119	7	3A		DR	3A	IMPEN 83
35	SU89200460	STB	070		1	1	144	28	118	6	2		DR	2	GLEY 70

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/	SUBS	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH				
1	0-25	mzc1	10YR42 00						0	0	HR	4			
	25-30	mc1	10YR52 00						0	0	HR	10		M	
1P	0-33	mzc1	10YR43 00						0	0	HR	1	MDMSAB	FR	Y
	33-43	mc1	75YR46 00	10YR58 00	F		75YR46 00		0	0	HR	2	WDCSAB	FR	M
	43-67	hc1	75YR46 00	10YR58 00	F		75YR46 00		0	0	HR	1	WDCSAB	FR	M
	67-120	c	75YR53 00	10YR58 53	M		75YR53 00	Y	0	0		0	MDCSAB	FR	M
2	0-35	mzc1	10YR42 00						0	0		0			
	35-75	hc1	10YR54 00	00					0	0		0		M	
	75-110	c	75YR54 00						0	0		0		M	
	110-111	c	00ZZ00 00						0	0		0		M	
2P	0-31	mc1	10YR32 00						2	0	HR	7	WDCSAB	FR	
	31-51	c	10YR41 00	75YR46 00	C			Y	0	0	HR	36		M	
	51-80	hc1	25Y 52 00	10YR56 00	F				0	0	HR	45		M	
3	0-30	mzc1	10YR52 00						0	0		0			
	30-45	mc1	10YR54 00						0	0		0		M	
	45-65	hc1	10YR56 00						0	0		0		M	
	65-80	c	10YR58 00						0	0	HR	5		M	
4	0-25	mzc1	10YR42 00						0	0		0			
	25-35	mc1	10YR43 00						0	0	HR	9		M	
5	0-25	mzc1	10YR52 00						0	0		0			
	25-50	mc1	10YR54 00						0	0		0		M	
	50-100	hc1	10YR56 00						0	0		0		M	
	100-110	c	75YR52 00	10YR58 61	C			Y	0	0		0		M	
6	0-30	mzc1	10YR53 00						0	0		0			
	30-45	mc1	10YR54 00						0	0		0		M	
	45-85	hc1	10YR56 00	00MN00 00	F				0	0		0		M	
	85-110	c	75YR53 00	10YR58 61	C		00MN00 00	Y	0	0		0		M	
7	0-25	mzc1	10YR53 00						0	0	HR	4			
	25-45	hc1	10YR56 00						0	0	HR	5		M	
	45-65	c	10YR58 00						0	0	HR	10		M	
8	0-30	mzc1	10YR42 00						0	0	HR	8			
9	0-30	mc1	10YR43 00						0	0	HR	2			
	30-50	mc1	10YR54 00						0	0		0		M	
	50-60	hc1	10YR54 00						0	0		0		M	
	60-120	c	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0		0		M	
10	0-28	mc1	10YR43 00						0	0		0			
	28-40	mc1	10YR54 00						0	0		0		M	
	40-65	c	10YR54 00						0	0		0		M	
	65-120	c	10YR53 52	75YR56 00	M		00MN00 00	Y	0	0		0		M	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR	
11	0-32	mc1	10YR43 53						0	0	0					
	32-40	mc1	10YR54 00						0	0	0			M		
	40-55	hc1	10YR54 00						0	0	0			M		
	55-70	c	10YR54 00						0	0	0			M		
	70-120	c	10YR53 00	10YR56 00 M			00M00 00 Y		0	0	0			M		
12	0-28	mc1	10YR43 00						0	0	HR	2				
	28-45	hc1	10YR54 00						0	0	HR	2		M		
	45-60	c	10YR54 56						0	0	0			M		
	60-120	c	10YR53 00	10YR56 58 M			00M00 00 Y		0	0	0			M		
13	0-29	mc1	10YR42 00						0	0	HR	8				
	29-40	mc1	10YR41 00						0	0	HR	30		M		
14	0-30	mc1	10YR42 00						0	0	HR	5				
	30-42	mc1	10YR41 00						0	0	HR	30		M		
15	0-25	mzc1	10YR43 00						0	0	0					
	25-50	mc1	10YR54 00						0	0	0			M		
	50-80	hc1	10YR56 00						0	0	0			M		
	80-110	c	10YR58 00	00M00 00 F					0	0	0			M		
16	0-28	mzc1	10YR42 00	00M00 00 C					0	0	HR	1				
	28-55	mc1	10YR44 00						0	0	HR	1		M		
	55-68	hzc1	10YR44 00	10YR58 00 F					0	0	0			M		
	68-120	c	10YR46 00	10YR56 52 F			00M00 00		0	0	0			M		
17	0-28	mc1	10YR43 00						0	0	HR	1				
	28-70	mc1	10YR44 00						0	0	HR	1		M		
	70-120	c	10YR46 00						0	0	0			M		
18	0-25	mc1	10YR43 00						0	0	0					
	25-58	hc1	10YR44 00						0	0	0			M		
	58-80	c	10YR56 00	10YR58 52 F			00M00 00		0	0	0			M		
	80-120	c	10YR53 00	10YR56 51 M			00M00 00 Y		0	0	0			M		
19	0-27	mzc1	10YR42 00						0	0	HR	1				
	27-50	hc1	10YR44 00						0	0	HR	5		M		
	50-65	hc1	10YR54 00						0	0	0			M		
	65-120	c	10YR53 00	10YR56 00 C				Y	0	0	0			M	Y	Y
20	0-27	mc1	10YR32 00						0	0	0					
	27-30	hc1	10YR41 00	10YR56 00 C				Y	0	0	HR	3		M		
21	0-25	mzc1	10YR42 00						0	0	HR	6				
	25-55	mc1	10YR54 00	00M00 00 F					0	0	0			M		
22	0-20	mzc1	10YR52 00						0	0	0					
	20-45	mc1	10YR54 00						0	0	0			M		
	45-75	hc1	10YR56 00	00M00 00 F					0	0	0			M		
	75-110	c	10YR58 00	00M00 00 M					0	0	0			M		

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL.	---STONES---			STRUCT/ CONSIST	SUBS			SPL	CALC
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR		
23	0-35	mzc1	10YR43 00					0	0	0						
	35-50	mc1	10YR53 00					0	0	0			M			
	50-70	hc1	10YR54 00					0	0	0			M			
	70-110	c	10YR56 00	00MN00	00	C		0	0	0			M			
24	0-30	mzc1	10YR43 00					0	0	0						
	30-45	mc1	10YR54 00					0	0	0			M			
	45-80	hc1	75YR56 00					0	0	0			M			
	80-110	c	10YR58 00	00MN00	00	F		0	0	0			M			
25	0-30	mzc1	10YR53 00					0	0	0						
	30-50	mc1	10YR44 00					0	0	0			M			
	50-75	hc1	10YR54 00	00MN00	00	F		0	0	0			M			
	75-110	c	10YR54 00					0	0	0			M			
26	0-25	mzc1	10YR42 00					0	0	0						
	25-35	hc1	10YR52 00	10YR58	00	C		Y	0	0	0		M			
27	0-25	mc1	10YR42 00					0	0	HR	1					
	25-45	hc1	10YR44 00					0	0	HR	1		M			
	45-55	hc1	10YR56 00					0	0	0			M			
	55-120	hc1	10YR56 00	10YR58	52	C	00MN00	00	0	0	HR	1		M		
28	0-25	mc1	10YR43 00					0	0	HR	1					
	25-40	hc1	10YR44 00					0	0	HR	1		M			
	40-70	c	10YR58 00					0	0	0			M			
29	0-28	mc1	10YR43 00					0	0	0						
	28-70	hc1	10YR44 00					0	0	0			M			
	70-120	c	10YR56 00					0	0	0			M			
30	0-28	mc1	10YR43 00					0	0	0						
	28-55	hzc1	10YR44 00					0	0	0			M			
	55-75	c	10YR56 00					0	0	0			M			
	75-120	c	10YR56 00	10YR51	58	C		0	0	0			M			
31	0-25	mc1	10YR42 00					0	0	HR	1					
	25-30	hc1	10YR53 00					0	0	HR	5		M			
	30-50	c	25Y 54 00					0	0	HR	10		M			
32	0-25	mzc1	10YR42 00					0	0	HR	1					
	25-28	mc1	10YR53 00					0	0	HR	1		M			
33	0-30	mc1	10YR42 00					0	0	HR	1					
	30-50	hc1	10YR53 00					0	0	HR	2		M			
	50-80	c	10YR53 00	10YR51	56	M		Y	0	0	HR	3		M		
34	0-29	mzc1	10YR43 00					0	0	HR	1					
	29-50	hc1	10YR44 00					0	0	HR	2		M			
	50-83	c	10YR56 00	10YR58	51	C		0	0	HR	2		M			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/		SUBS			
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
35	0-29	mc1	10YR42 00						0	0	0						
	29-60	hc1	10YR44 00						0	0	0					M	
	60-70	c	10YR56 00	10YR58 00	F		00M00 00		0	0	0					M	
	70-120	c	75YR53 00	10YR58 52	M			Y	0	0	0					M	