

**A1**  
**Arun District Local Plan**  
**Site 12 : Felpham**  
**Agricultural Land Classification**  
**Report**  
**March 1994**

**ARUN DISTRICT LOCAL PLAN  
SITE 12 : FELPHAM  
AGRICULTURAL LAND CLASSIFICATION REPORT**

**1. 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 the Arun District of West Sussex. The work forms part of MAFF's statutory input to the preparation of the Arun District Local Plan.
- 1.2 Site 12 comprises 33.8 hectares of land to the immediate north of Felpham, a district of Bognor Regis, West Sussex. An Agricultural Land Classification, (ALC), survey was carried out during March 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 35 borings and two soil inspection pits were described 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 a long term limitation on its use for agriculture.
- 1.3 At the time of survey the majority of the site was in permanent pasture with a smaller area which had been ploughed.
- 1.4 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

**Table 1 : Distribution of Grades and Subgrades**

<b>Grade</b>	<b>Area (ha)</b>	<b>% of Agricultural Land</b>
1	4.6	13.6
2	<u>29.2</u>	<u>86.4</u>
Total area of site	33.8 ha	100

- 1.5 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.
- 1.6 The area surveyed has been classified excellent, Grade 1, to very good, Grade 2, quality. Deep, relatively well drained silty clay loam soils have developed in deposits of brickearth. Where Grade 1 has been mapped, the land has no or only very minor limitations to its agricultural use, whilst land assigned to Grade 2 is very slightly restricted by soil wetness and/or soil droughtiness limitations.

## 2. Climate

- 2.1 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained by interpolation from a 5km grid point dataset (Met. Office, 1989) for representative location in the survey area.

**Table 2 : Climatic Interpolation**

Grid Reference	SU957009
Altitude (m)	5
Accumulated Temperature (degree days, Jan-June)	1544
Average Annual Rainfall (mm)	738
Field Capacity (days)	150
Moisture Deficit, Wheat (mm)	121
Moisture Deficit, Potatoes (mm)	118
Overall Climatic Grade	1

- 2.2 Climatic factors are considered first when classifying land since climate can be overriding in the sense that adverse climatic conditions may restrict land quality irrespective of favourable site and soil conditions. The details in the table above show that there is no overall climatic limitation affecting this site. In addition, no local climatic factors such as exposure or frost risk affect the land quality.
- 2.3 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. At this locality, the climate is relatively warm and dry. As a result the likelihood of soil droughtiness problems will be enhanced whilst soil wetness limitations may be reduced.

## 3. Relief

- 3.1 The site lies at an altitude of approximately 3-5 metres and is flat. Nowhere on the site do gradient or microrelief affect agricultural land quality.

## 4. Geology and Soil

- 4.1 The British Geological Survey (1971) published map, Sheet 332, Bognor shows the entire site to be underlain by drift deposits of brickearth, which in turn overlie Cretaceous Upper Chalk.
- 4.2 Soil Survey of England and Wales (1967) Sheet SU90, Soils of the West Sussex Coastal Plain shows the site to comprise two main soil series, each of which is divided into two phases. The western part of the site has been mapped as the Hook series, mostly deep phase with a small unit of shallow phase with calcareous subsoil horizons. Across the eastern half of the site, Park Gate soils are shown with smaller areas of Hook (deep phase). Two phases of Park Gate are indicated; shallow phase over calcareous subsoil horizons to the south and north-east, and shallow over loamy pebbly drift through the central part of the site.

Hook soils are described as, 'stoneless, gleyic argillic brown earths with grey mottling in the subsoil', (SSEW, 1984), whilst Park Gate are described as, 'deep, stoneless silty argillic gleys, affected by seasonally high groundwater with grey and ochreous mottled subsoils', (SSEW, 1984).

- 4.3 Detailed field examination of the soils on the site revealed the presence of deep, silty soils which may have drainage imperfections.

## 5. 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 1

- 5.3 Excellent quality land has been mapped in a single unit towards the south-east of the site. Typical profiles comprise non-calcareous silt loam topsoils which may contain up to 2% total flints by volume. These medium textured, easily workable topsoils overlie medium silty clay loam upper subsoils passing to heavy clay loam or silty clay loam. Lower subsoils of gleyed, but permeable, clay were encountered below about 45-55 cm depth. Gleying in the lower subsoil indicates a fluctuating groundwater table. However, in this warm, dry climatic regime such drainage characteristics equate to Wetness Class I (well drained). These soils have a high silt content and as such have good reserves of available water for utilisation by crops, despite the relatively high soil moisture deficits at this locality. Given these soil properties, the land is easily worked and versatile, and is capable of supporting a very wide range of crops, including the more demanding horticultural crops. Yields are likely to be consistently high.

### Grade 2

- 5.4 Very good quality land has been mapped across the majority of the area surveyed, the principal limitation being that of slight soil wetness and/or droughtiness. Profiles are essentially similar to those described above, although they tend to have a higher clay content throughout. Thus medium silty clay loam, or occasionally silt loam, topsoils (which are non-calcareous and only very slightly stony) overlie similar or heavy silty clay loam upper subsoils and pass to clays or silty clays in the lower subsoils which may become calcareous at depth. Although the clays are permeable, minor wetness limitations occur due to fluctuating groundwater, as indicated by gleying which commonly occurs within 40 cm depth. Given the local climatic regime, such a drainage status, equates to Wetness Class II. The land is therefore slightly limited by soil wetness such that the opportunities for land work may be restricted and crop growth may be adversely affected. Not all profiles exhibit soil wetness restrictions and they are assigned to Wetness Class I.

However, where soil wetness is not a problem, minor soil droughtiness is limiting. The combination of a relatively dry climatic regime, (ie, high soil moisture deficits) and soil profiles with a slightly higher clay content than those described in para 5.3, gives rise to land which is slightly droughty. Moisture balance figures indicate that there is a slight restriction in soil water available throughout the growing season such that crops, particularly those which are more shallow rooting, such as potatoes, may suffer slight drought stress. Crop yields and consistency may be affected as a result. Overall though Grade 2 land may be expected to support a wide range of arable and horticultural crops, but the flexibility and yield potential of the land may be reduced in comparison to land assigned to Grade 1.

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Resource Planning Team  
Guildford Statutory Group  
ADAS Reading

## SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No. 332, Bognor.

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 (1967), Sheet SU90, Soil Maps of The West Sussex Coastal Plain, and accompanying legend.

Soil Survey of England and Wales (1984), Bulletin 15, Soils and their use in South-East England.

## APPENDIX I

### DESCRIPTION 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 (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 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 including: 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. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

## **Woodland**

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm 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

### FIELD ASSESSMENT OF SOIL WETNESS CLASS

#### SOIL WETNESS CLASSIFICATION

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

#### Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

<sup>1</sup>The number of days specified is not necessarily a continuous period.

<sup>2</sup>'In most years' is defined as more than 10 out of 20 years.

## **APPENDIX III**

### **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 computer database. This uses notations and abbreviations as set out below.

### Boring Header Information

- GRID REF** : national 100 km grid square and 8 figure grid reference.
- USE** : Land use at the time of survey. The following abbreviations are used.

<b>ARA</b> : Arable	<b>WHT</b> : Wheat	<b>BAR</b> : Barley
<b>CER</b> : Cereals	<b>OAT</b> : Oats	<b>MZE</b> : Maize
<b>OSR</b> : Oilseed rape	<b>BEN</b> : Field Beans	<b>BRA</b> : Brassicae
<b>POT</b> : Potatoes	<b>SBT</b> : Sugar Beet	<b>FCD</b> : Fodder Crops
<b>LIN</b> : Linseed	<b>FRT</b> : Soft and Top Fruit	<b>FLW</b> : Fallow
<b>PGR</b> : Permanent Pasture	<b>LEY</b> : Ley Grass	<b>RGR</b> : Rough Grazing
<b>SCR</b> : Scrub	<b>CFW</b> : Coniferous Woodland	<b>DCW</b> : Deciduous Wood
<b>HTH</b> : Heathland	<b>BOG</b> : Bog or Marsh	<b>FLW</b> : Fallow
<b>PLO</b> : Ploughed	<b>SAS</b> : Set aside	<b>OTH</b> : Other
<b>HRT</b> : Horticultural Crops		
- GRDNT** : Gradient as estimated or measured by a hand-held optical clinometer.
- GLEYSPL** : Depth in centimetres (cm) to gleying and/or slowly permeable layers.
- AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
- MB (WHEAT/POTS)** : Moisture Balance. (Crop adjusted AP - crop adjusted MD)
- DRT** : Best grade according to soil droughtiness.
- If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

<b>MREL</b> : Microrelief limitation	<b>FLOOD</b> : Flood risk	<b>EROSN</b> : Soil erosion risk
<b>EXP</b> : Exposure limitation	<b>FROST</b> : Frost prone	<b>DIST</b> : Disturbed land
<b>CHEM</b> : Chemical limitation		
- LIMIT** : The main limitation to land quality. The following abbreviations are used.

<b>OC</b> : Overall Climate	<b>AE</b> : Aspect	<b>EX</b> : Exposure
<b>FR</b> : Frost Risk	<b>GR</b> : Gradient	<b>MR</b> : Microrelief
<b>FL</b> : Flood Risk	<b>TX</b> : Topsoil Texture	<b>DP</b> : Soil Depth
<b>CH</b> : Chemical	<b>WE</b> : Wetness	<b>WK</b> : Workability
<b>DR</b> : Drought	<b>ER</b> : Erosion Risk	<b>WD</b> : Soil Wetness/Droughtiness
<b>ST</b> : Topsoil Stoniness		

## Soil Pits and Auger Borings

1. **TEXTURE** : soil texture classes are denoted by the following abbreviations.

<b>S</b> :	Sand	<b>LS</b> :	Loamy Sand	<b>SL</b> :	Sandy Loam
<b>SZL</b> :	Sandy Silt Loam	<b>CL</b> :	Clay Loam	<b>ZCL</b> :	Silty Clay Loam
<b>ZL</b> :	Silt Loam	<b>SCL</b> :	Sandy Clay Loam	<b>C</b> :	Clay
<b>SC</b> :	Sandy Clay	<b>ZC</b> :	Silty Clay	<b>OL</b> :	Organic Loam
<b>P</b> :	Peat	<b>SP</b> :	Sandy Peat	<b>LP</b> :	Loamy Peat
<b>PL</b> :	Peaty Loam	<b>PS</b> :	Peaty Sand	<b>MZ</b> :	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:

<b>F</b> :	Fine (more than 66% of the sand less than 0.2mm)
<b>M</b> :	Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C</b> :	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. **GLEYS** : 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.

<b>HR</b> :	all hard rocks and stones	<b>SLST</b> :	soft oolitic or dolimitic limestone
<b>CH</b> :	chalk	<b>FSST</b> :	soft, fine grained sandstone
<b>ZR</b> :	soft, argillaceous, or silty rocks	<b>GH</b> :	gravel with non-porous (hard) stones
<b>MSST</b> :	soft, medium grained sandstone	<b>GS</b> :	gravel with porous (soft) stones
<b>SI</b> :	soft weathered igneous/metamorphic rock		

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                                **VC** : very 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    **VF** : very friable    **FR** : friable    **FM** : firm    **VM** : very firm  
**EM** : extremely firm            **EH** : extremely hard

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

SOIL PIT DESCRIPTION

Site Name : ARUN LP, SITE 12 Pit Number : 1P

Grid Reference: SU95700100 Average Annual Rainfall : 738 mm  
 Accumulated Temperature : 1544 degree days  
 Field Capacity Level : 150 days  
 Land Use : Permanent Grass  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	MZCL	10YR42 00	0	0		
25- 43	MZCL	10YR64 00	0	0		MDCSAB
43- 63	HZCL	10YR64 00	0	0	C	MDCSAB
63- 95	ZC	10YR63 00	0	0	M	MDCSAB
95-120	ZC	10YR63 00	0	0	M	WKCSAB

Wetness Grade : 1 Wetness Class : I  
 Gleying : 043 cm  
 SPL : 095 cm

Drought Grade : 2 APW : 146mm MBW : 25 mm  
 APP : 123mm MBP : 5 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ARUN LP, SITE 12

Pit Number : 2P

Grid Reference: SU96000090    Average Annual Rainfall : 738 mm  
 Accumulated Temperature : 1544 degree days  
 Field Capacity Level : 150 days  
 Land Use : Bare Soil  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	ZL	10YR42-00	0	2		
30- 36	MZCL	10YR54-00	0	0		MDCSAB
36- 50	HZCL	10YR54-00	0	0	F	MDCSAB
50-120	C	10YR64-00	0	0	C	MDCSAB

Wetness Grade : 1                      Wetness Class : I  
 Gleying : 050 cm  
 SPL : No SPL

Drought Grade : 1                      APW : 158mm    MBW : 37 mm  
 APP : 134mm    MBP : 16 mm

FINAL ALC GRADE : 1  
 MAIN LIMITATION :

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	DRT					
1	SU95400120	CER	035		2	2		0	0					WE	2	IMP 70, STONES
1P	SU95700100	PGR	043	095	1	1	146	25	123	5	2			DR	2	
2	SU95500120	CER	036		2	2	152	31	119	1	2			WD	2	
2P	SU96000090	PLO	050		1	1	158	37	134	16	1				1	
3	SU95400110	CER	110	110	1	1	148	27	123	5	2			DR	2	SL. GLEY 70+
4	SU95500110	CER	070		1	1	165	44	129	11	1				1	SL. GLEY 50+
5	SU95600110	CER	048		1	1	152	31	116	-2	2			DR	2	
6	SU95700110	PGR	075		1	1	149	28	123	5	2			DR	2	SL. GLEY 55+
7	SU95300100	LEY	0		2	2	157	36	131	13	1			WE	2	
8	SU95400100	LEY	033		2	2	151	30	121	3	2			WD	2	
9	SU95500100	LEY	0		2	2	161	40	125	7	2			WD	2	
10	SU95600100	PGR	0		2	2	162	41	133	15	1			WE	2	
11	SU95700100	PGR	055		1	1	149	28	123	5	2			DR	2	
12	SU95800100	PGR	0		2	2	149	28	123	5	2			WD	2	
13	SU95900100	PLO	049		1	1	158	37	134	16	1				1	
14	SU95300090	LEY	033		2	2	161	40	135	17	1			DR	2	
15	SU95400090	LEY	075	095	1	1	151	30	126	8	2			DR	2	
16	SU95500090	LEY			1	1	162	41	126	8	2			DR	2	
17	SU95600090	PGR	0		2	2	152	31	125	7	2			WD	2	
18	SU95700090	PGR	045		1	1	148	27	122	4	2			DR	2	
19	SU95800090	PLO	045		1	1	156	35	132	14	1				1	
20	SU95900090	PLO	029		2	2	159	38	134	16	1			WE	2	
21	SU96000090	PLO	047		1	1	157	36	133	15	1				1	
22	SU96100090	PGR	0		2	2	155	34	130	12	1			WE	2	
23	SU96200090	PGR	028		2	2		0	0					WE	2	SL. GLEY TOP
23A	SU95220080	LEY	045		1	1	150	29	124	6	2			DR	2	SL. GLEY 32+
24	SU95300080	LEY			1	1	161	40	125	7	2			DR	2	
25	SU95400080	LEY	030	095	2	2	154	33	125	7	2			WD	2	
26	SU95500080	LEY	0		2	2	162	41	126	8	2			WD	2	
27	SU95600080	PGR	030		2	2	145	24	119	1	2			WD	2	
28	SU95700080	PGR	055		1	1	160	39	124	6	2			DR	2	
29	SU95800080	PLO	057		1	1	159	38	134	16	1				1	
30	SU95900080	PLO	042		1	1	155	34	131	13	1				1	
31	SU96100080	PGR	012		2	2	154	33	126	8	2			WD	2	
32	SU96200080	PGR	035		2	2	145	24	121	3	2			WD	2	
33	SU95600070	LEY	028		2	2	156	35	122	4	2			WE	2	
34	SU95850071	PLO	055		1	1	159	38	134	16	1				1	



SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1	0-25	mzc1	10YR53 00					0	0	HR	3						
	25-35	mzc1	10YR64 00					0	0	HR	2		M				
	35-45	mc1	10YR64 00	10YR56 00	C			Y	0	0	HR	1		M			
	45-65	mzc1	10YR66 56					0	0	CH	25		M			Y	
	65-70	mzc1	10YR64 00	10YR58 00	C			Y	0	0	CH	10		M		Y	Imp 70+, stones
1P	0-25	mzc1	10YR42 00					0	0		0						
	25-43	mzc1	10YR64 00					0	0		0	MDCSAB	FR	M			
	43-63	hzc1	10YR64 00	10YR56 00	C			Y	0	0	0	MDCSAB	FR	M			
	63-95	zc	10YR63 00	10YR56 00	M			Y	0	0	0	MDCSAB	FR	M			
	95-120	zc	10YR63 00	10YR56 00	M			Y	0	0	0	WKCSAB	FM	P		Y	
2	0-27	mzc1	10YR53 42	10YR56 00	F			0	0	HR	1						
	27-36	mzc1	10YR64 00	10YR56 00	F			0	0	HR	1		M				
	36-45	mzc1	10YR64 00	10YR56 00	C			Y	0	0	0		M				
	45-85	zc	10YR53 54	75YR56 00	M		00MN00	00	Y	0	0	0		M			
	85-120	hzc1	10YR73 64	75YR56 00	C			Y	0	0	0		M			Y	
2P	0-30	z1	10YR42-00					0	0	HR	2						
	30-36	mzc1	10YR54-00					0	0		0	MDCSAB	FR	M			
	36-50	hzc1	10YR54-00	10YR58-00	F			0	0		0	MDCSAB	FR	M			
	50-120	c	10YR64-00	75YR58-00	C		00MN00-00	Y	0	0	0	MDCSAB	FR	M		Y	
3	0-27	mzc1	10YR53 00	10YR56 00	F			0	0	HR	2						
	27-55	mzc1	10YR54 00					0	0		0		M				
	55-70	hzc1	10YR54 00					0	0		0		M				
	70-110	zc	10YR66 00	10YR58 00	C			S	0	0	0		M				
	110-120	zc	10YR64 66	75YR56 00	C			Y	0	0	0		P			Y	
4	0-25	z1	10YR53 00					0	0	HR	2						
	25-35	mzc1	10YR54 00					0	0	HR	1		M				
	35-50	hzc1	10YR54 00	10YR56 00	F			0	0		0		M				
	50-70	zc	10YR66 64	10YR56 00	C			S	0	0	0		M				
	70-120	mzc1	10YR64 00	75YR58 00	C			Y	0	0	0		M				Y
5	0-30	mzc1	10YR53 00					0	0	HR	2						
	30-48	zc	10YR66 00	10YR58 00	F			0	0		0		M				
	48-70	zc	10YR64 66	75YR58 00	M			Y	0	0	0		M				
	70-120	hzc1	25Y 63 64	75YR58 00	C			Y	0	0	0		M				Y
6	0-25	mzc1	10YR53 00					0	0	HR	1						
	25-55	mzc1	10YR54 00					0	0		0		M				
	55-65	hzc1	10YR54 00	10YR56 00	C			S	0	0	0		M				
	65-75	zc	10YR54 00	10YR56 00	C		00MN00	00	S	0	0	0		M			
	75-120	zc	10YR64 54	75YR56 00	M		00MN00	00	Y	0	0	0		M			
7	0-28	z1	10YR53 00	10YR46 00	C			Y	0	0	HR	2					
	28-50	mzc1	10YR53 00	10YR56 00	C			Y	0	0	0		M				
	50-75	zc	10YR53 00	10YR56 00	C		00MN00	00	Y	0	0	0		M			
	75-120	zc	10YR53 52	10YR58 00	M		00MN00	00	Y	0	0	0		M			

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED	-----STONES-----			STRUCT/	SUBS	STR	POR	IMP	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6							
8	0-33	mzc1	10YR42 00	10YR52 00	F			0	0	0							
	33-45	mzc1	10YR53 00	10YR51 00	C			Y	0	0							M
	45-100	zc	25Y 53 00	10YR58 00	M		00MNO0 00	Y	0	0							M
	100-120	mzc1	25Y 63 73	10YR68 00	M			Y	0	0							Y
9	0-30	mzc1	10YR42 00	10YR56 00	C			Y	0	0							
	30-70	mzc1	10YR52 00	10YR56 00	C			Y	0	0							M
	70-120	hzc1	10YR53 00	10YR58 00	M		00MNO0 00	Y	0	0							M
10	0-25	z1	10YR53 00	10YR56 00	C			Y	0	0	HR		1				
	25-38	mzc1	10YR53 00	10YR56 00	C			Y	0	0							M
	38-55	mzc1	10YR64 00						0	0							M
	55-65	mzc1	10YR64 00	10YR58 00	C			Y	0	0							M
	65-85	hzc1	10YR64 00	10YR58 00	C			Y	0	0							M
	85-120	zc	10YR64 00	75YR58 00	M			Y	0	0							M
11	0-30	mzc1	10YR53 00						0	0	HR		1				
	30-55	mzc1	10YR64 00						0	0							M
	55-65	hzc1	10YR64 00	10YR56 00	C			Y	0	0							M
	65-120	zc	10YR64 00	75YR56 00	M			Y	0	0							M
12	0-26	mzc1	10YR53 00	10YR56 00	C			Y	0	0	HR		1				
	26-55	mzc1	10YR53 64	10YR56 00	C			Y	0	0							M
	55-65	hzc1	10YR63 64	75YR56 00	M			Y	0	0							M
	65-120	zc	10YR63 64	75YR56 00	M			Y	0	0							M
13	0-30	z1	10YR42 00						0	0	HR		2				
	30-49	mzc1	10YR53 00		F		00MNO0 00		0	0							M
	49-120	c	10YR53 00	75YR68 00	C		10YR62 00	Y	0	0							M
14	0-33	z1	10YR42 00						0	0							
	33-50	mzc1	10YR53 00	10YR56 00	C			Y	0	0							M
	50-70	zc	10YR53 63	75YR56 00	M		00MNO0 00	Y	0	0							M
	70-120	zc	25Y 63 00	10YR58 00	M			Y	0	0							M
15	0-35	mzc1	10YR44 00						0	0							
	35-55	mzc1	10YR54 00						0	0							M
	55-75	mzc1	10YR56 66	10YR53 00	F				0	0							M
	75-95	zc	25Y 53 00	75YR56 00	C			Y	0	0							M
	95-120	zc	25Y 53 00	75YR58 00	M			Y	0	0							P
16	0-35	mzc1	10YR42 00						0	0							
	35-75	mzc1	25Y 54 00						0	0							M
	75-120	mzc1	25Y 64 00						0	0							M
17	0-28	mzc1	10YR53 00	10YR56 00	C			Y	0	0							
	28-38	mzc1	10YR54 00						0	0							M
	38-65	mzc1	10YR64 00						0	0							M
	65-75	mzc1	10YR64 00	75YR56 00	C			Y	0	0							M
	75-78	hzc1	10YR64 00	10YR58 00	C			Y	0	0							M
	78-120	zc	10YR63 64	75YR58 00	M		00MNO0 00	Y	0	0							M

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
18	0-28	mzc1	10YR53 00	10YR56 00	F			0	0	0							
	28-45	mzc1	10YR64 00				0	0	0				M				
	45-50	mzc1	10YR64 00	10YR56 00	C		Y	0	0	0			M				
	50-55	hzc1	10YR64 00	10YR58 00	C		Y	0	0	0			M				
	55-120	zc	10YR63 64	75YR58 00	M		Y	0	0	0			M				
19	0-27	z1	10YR42 00					0	0	HR	1						
	27-45	mzc1	10YR54 00		C		00MN00 00	0	0	0			M				
	45-120	c	10YR53 00	10YR58 00	C		10YR61 00	Y	0	0	0		M				
20	0-29	z1	10YR42 00					0	0	HR	2						
	29-58	mzc1	10YR52 00	10YR58 00	C		10YR62 00	Y	0	0	0		M				
	58-120	c	10YR52 00	10YR58 62	C		00MN00 00	Y	0	0	0		M				
21	0-30	z1	10YR42 00					0	0	HR	2						
	30-35	mzc1	10YR53 00					0	0	0			M				
	35-47	hzc1	10YR53 00					0	0	0			M				
	47-120	c	10YR53 00	10YR58 00	C		10YR62 00	Y	0	0	0		M				
22	0-20	z1	10YR52 00	75YR58 00	C		10YR62 00	Y	0	0	0						
	20-58	mzc1	10YR53 00	10YR58 00	C		10YR62 00	Y	0	0	0		M				
	58-120	c	10YR62 00	75YR68 00	C			Y	0	0	0		M				
23	0-28	z1	10YR43 00	10YR58 00	C			S	0	0	0						Slightly gleyed
	28-45	mzc1	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	0		M				
	45-60	c	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	0		M				Imp 60+, stones
23A	0-32	mzc1	10YR42 00	10YR51 00	F				0	0	HR	2					
	32-45	mzc1	10YR44 54	10YR56 00	C			S	0	0	0		M				
	45-70	hzc1	10YR53 52	10YR58 00	C		00MN00 00	Y	0	0	0		M				
	70-120	zc	10YR53 52	75YR56 00	M		00MN00 00	Y	0	0	0		M				
24	0-28	mzc1	10YR53 52	10YR46 00	F				0	0	0						
	28-45	mzc1	10YR53 00	10YR56 00	F				0	0	0		M				
	45-120	mzc1	10YR54 00						0	0	0		M				
25	0-30	mzc1	10YR44 54						0	0	0						
	30-45	mzc1	10YR53 63	10YR66 00	C			Y	0	0	0		M				
	45-80	mzc1	25Y 53 62	10YR66 00	C		00MN00 00	Y	0	0	0		M				
	80-95	mzc1	25Y 62 00	10YR58 00	M			Y	0	0	0		M				
	95-120	zc	25Y 52 00	75YR58 00	M			Y	0	0	0		P			Y	
26	0-35	mzc1	10YR53 52	10YR56 00	C			Y	0	0	0						
	35-60	mzc1	10YR53 62	10YR56 00	C			Y	0	0	0		M				
	60-120	mzc1	10YR62 00	10YR58 00	M			Y	0	0	0		M				
27	0-30	mzc1	10YR53 00						0	0	0						
	30-42	hzc1	10YR64 00	75YR56 00	C			Y	0	0	0		M				
	42-120	zc	10YR63 64	10YR58 00	M		00MN00 00	Y	0	0	0		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
28	0-28	mzc1	10YR53 00	10YR56	00	F			0	0	HR	1						
	28-55	mzc1	10YR64 00						0	0		0						M
	55-120	hzc1	10YR64 00	75YR58	00	C			Y	0	0	0						M
29	0-30	z1	10YR42 00						0	0	HR	2						
	30-57	mzc1	10YR54 00						0	0		0						M
	57-120	c	10YR53 00	10YR58	61	C	00MN00	00	Y	0	0	0						M
30	0-27	z1	10YR42-00						0	0	HR	2						
	27-42	mzc1	10YR54-00			F	00MN00-00		0	0		0						M
	42-48	hc1	10YR53-00	10YR58-00		C	00MN00-00	Y	0	0		0						M
	48-120	c	10YR53-00	75YR58-00		C	00MN00-00	Y	0	0		0						M
31	0-12	z1	10YR43 00			F			0	0		0						
	12-25	mzc1	10YR52 53	10YR58	00	C	10YR61	00	Y	0	0	0						M
	25-35	mzc1	10YR53 00			F			0	0		0						M
	35-58	mzc1	10YR54 00			F	00MN00	00		0	0	0						M
	58-78	hzc1	10YR53 00	10YR58	00	C			Y	0	0	0						M
	78-120	c	10YR53 00	10YR58	00	C	10YR71	00	Y	0	0	0						M
32	0-25	mzc1	10YR42 00			F			0	0		0						
	25-35	mzc1	10YR53 00						0	0		0						M
	35-120	c	10YR53 00	10YR58	00	C	10YR62	00	Y	0	0	0						M
33	0-28	mzc1	10YR43 00						0	0		0						
	28-42	mzc1	10YR63 00	10YR66	00	C			Y	0	0	0						M
	42-70	c	25Y 62 00	10YR58	00	M			Y	0	0	0						M
	70-90	hzc1	10YR58 00	00MN00	00	M			Y	0	0	0						M
	90-120	mzc1	10YR58 00							0	0	0						M
34	0-32	z1	10YR43 00						0	0	HR	2						
	32-45	mzc1	10YR54 00						0	0		0						M
	45-55	hc1	10YR54 00						0	0		0						M
	55-120	c	10YR53 00	10YR58	00	C	00MN00	00	Y	0	0	0						M