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WEST SUSSEX MINERALS PLAN
PLAN 2: Drayton House, Drayton, East of Chichester

Agricultural Land Classification
ALC Map and Report

June 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION

WEST SUSSEX MINERALS PLAN
PLAN 2: Drayton House, Drayton, East of Chichester

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 16.2 ha of land at Drayton, West Sussex. The survey was carried out during June 1997.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the West Sussex Minerals Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the land on the site was all under wheat.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% site area
2	9.1	56.2
3a	0.5	3.1
3b	6.6	40.7
Total surveyed area	16.2	100
Total site area	16.2	100

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. A total of 15 borings and 2 soil pits were described.

8. Agricultural land quality on the site ranged from Grade 2 (very good) land through to Subgrade 3b (moderate) land. The principal soil limitation for the surveyed area was a soil droughtiness restriction due to the presence of stony layers occuring at varying depths within the soil profile.

9. Grade 2 (very good) quality land is found on marginally higher ground located to the west of the site. Very good quality land comprises the deeper well drained profiles with silty clay loam topsoils over similarly textured subsoils, becoming impenetrable at depth (to soil auger) due to stony layers. In the local climate, moisture balance calculations indicate that these soils have a minor soil droughtiness limitation.

10. Subgrade 3a (good quality) and Subgrade 3b (moderate quality) land is located on the slightly lower ground in the east. The slither of Subgrade 3a land along Drayton lane is a continuation of a larger mapping unit on land surveyed to the east (see FRCA ref: 4203/072/97). Soils of both Subgrades are essentially similar, but with Subgrade 3b land more stony and shallower than the Subgrade 3a due to stony layers being found higher in the soil profile. Soils comprise variable depths of silty clay loam topsoils over similar subsoils becoming impenetrable to the auger. The soils are well drained, but moisture balance calculations for the local climate indicate moderate soil droughtiness limitations the severity of which depends on the stone content and depth to stony layer. This will reduce the level and consistency of crop yields. At some locations topsoil stone content was sufficiently high for this to be an additional limitation causing the land to be graded no higher than Subgrade 3b. This is due to the increased wear and tear on machinery and adverse affects on crop growth.

FACTORS INFLUENCING ALC GRADE

Climate

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

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 891 040	SU 887 041
Altitude	m. AOD	10	11
Accumulated Temperature	day°C (Jan-June)	1538	1537
Average Annual Rainfall	mm	775	774
Field Capacity Days	days	158	158
Moisture Deficit, Wheat	mm	117	117
Moisture Deficit, Potatoes	mm	113	113
Overall climatic grade	N/A	Grade 1	Grade 1

13. 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.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

15. The combination of rainfall and temperature at this site mean that the local climate is comparatively warm and moist, typical of a maritime influence. The coastal plain location produces high moisture deficit values for wheat (117 mm) and potatoes (113 mm) through high evapotranspiration rates. Overall, there are no climatic restrictions and the land is climatically Grade 1.

Site

16. The site lies at an altitude of approximately 11m AOD. The land rises gently from the centre of the site towards the west.

Geology and soils

17. The published geological information for the site (BGS, 1972), shows the surveyed area to be mapped entirely as Pleistocene Valley Gravel drift deposits.

18. The most detailed published soils information for the site (SSEW, 1967) has mapped the site as soils of the Hook Series (Deep phase), Park Gate Series (Shallow phase over flinty head) and Gade Series. The Hook Series is mapped to the north and west, the Park Gate Series is shown centrally and to the south, while the Gade Series is found running parallel to the eastern boundary of the site. All three series are described under one soil association the Hamble 2 Association, on the published regional soils map (SSEW, 1984). The Hamble 2 Association is described as 'Deep stoneless well drained silty soils and similar soils affected by groundwater; over gravel locally. Usually flat land.

AGRICULTURAL LAND CLASSIFICATION

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

Grade 2

21. Grade 2 (very good quality) agricultural land suffers from a slight soil droughtiness limitation and is mapped on the west of the site, corresponding to a slightly higher and flatter area.

22. Typically, soil profiles are deep and well drained (Wetness Class I), having very slightly stony medium silty clay loam topsoils. These pass into a similar textured upper subsoils again, very slightly stony, which exhibit a moderate subsoil structure (see pit 2). Lower subsoils (from approximately 45-55+cm) have been assessed as very slightly stony, gleyed but permeable, heavy silty clay loams. The very stony lower horizons proved impermeable to the soil auger, but evidence from pit 2 suggests that these become progressively stonier and pass to a gravel layer having greater than 70 % by volume flints (>2mm) from approximately 80-90+cm

23. The combination of textures, depths, structures and stone contents means that there is insufficient water for crop growth at critical times of the season. Consequently, there is a reduction in available moisture at depth which affects the level and consistency of crop yields resulting in land that cannot be classified higher than Grade 2.

Subgrade 3a

24. Land classified as Subgrade 3a (good quality) comprises a single auger boring, mapped in the north east corner of the site, corresponding to the extension of a much larger mapping unit on an adjacent site (FRCA ref: 4202/074/97). Subgrade 3a land suffers from a more severe soil droughtiness limitation than land mapped as Grade 2, as the gravel layers lie closer to the surface.

25. Typically, Subgrade 3a land corresponds to observations in Pit 1. Profiles are deep and well drained (Wetness Class 1), and comprise very slightly stony, medium silty clay loam topsoils, passing into a very similar textured upper subsoil which is also very slightly stony. Upper subsoil structural conditions have been assessed as moderate. Lower subsoils, from approximately 50cm are very stony (45-50% flints by volume >2mm), medium silty clay loams passing into a gravel layer (70%+ flints >2mm) from approximately 64 cm.

26. Moisture balance calculations computed from soil and climatic variables indicate that this land should not be classified higher than Subgrade 3a. This land is more drought-prone than that Grade 2 and crop yields are likely to be lower and less consistent as a result.

Subgrade 3b

27. Subgrade 3b (moderate quality) land is found in the slightly lower eastern half of the site. The principal limitation is a moderate to severe soil droughtiness restriction caused by the gravel substratum being closer to the surface. This is compounded by a topsoil stone limitation in some locations.

28. Soil profiles for Subgrade 3b land are well drained (Wetness Class 1) and comprise very slightly stony (< 5% flints > 2mm) to moderately stony (up to 16-17% flints by volume >2cm) medium silty clay loam topsoils, over stony and similar textured upper subsoils. From approximately 40 cm, soils become impenetrable to the auger due to very stony layers.

29. Assuming, similar subsoil characteristics occur where soils are impenetrable to the soil auger, as is found elsewhere on the site, a moderate to severe soil droughtiness restriction exists because the available water to plants is greatly reduced because of the shallowness of

the soil resource over the gravel substratum. This is reflected in the moisture balance calculations which take the high stone content into account when computing the amount of available water which plants can extract. The calculation also assumes that plant roots can exploit moisture reserves within the stony layers. Nevertheless, the effect of this is to reduce the level and consistency of crop yields and affect the range that can be grown.

30. Some of the Subgrade 3b land also has a topsoil stone limitation (up to 16 - 17% flints by volume >2cm) recorded by riddling the topsoil. In addition to increasing the droughtiness limitation, such topsoil stone contents will increase production costs by causing extra wear and tear to implements and tyres and will also significantly reduce crop establishment and quality.

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SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No.317, Chichester.*
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Soil Survey of England and Wales (1967) *Soils of the West Sussex Coastal Plain*
SSEW: Harpenden

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

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

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF**: *national 100 km grid square and 8 figure grid reference.*

2. **USE**: Land use at the time of survey. The following abbreviations are used:

ARA:	Arable	**WHT:**	Wheat	**BAR:**	Barley
CER:	Cereals	**OAT:**	Oats	**MZE:**	Maize
OSR:	Oilseed rape	**BEN:**	Field beans	**BRA:**	Brassicae
POT:	Potatoes	**SBT:**	Sugar beet	**FCD:**	Fodder crops
LIN:	Linseed	**FRT:**	Soft and top fruit	**FLW:**	Fallow
PGR:	Permanent pasture	**LEY:**	Ley grass	**RGR:**	Rough grazing
SCR:	Scrub	**CFW:**	Coniferous woodland	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

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

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

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

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

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

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

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

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

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

Soil Pits and Auger Borings

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

S:	Sand	**LS:**	Loamy Sand	**SL:**	Sandy Loam
SZL:	Sandy Silt Loam	**CL:**	Clay Loam	**ZCL:**	Silty Clay Loam
ZL:	Silt Loam	**SCL:**	Sandy Clay Loam	**C:**	Clay
SC:	Sandy Clay	**ZC:**	Silty Clay	**OL:**	Organic Loam
P:	Peat	**SP:**	Sandy Peat	**LP:**	Loamy Peat
PL:	Peaty Loam	**PS:**	Peaty Sand	**MZ:**	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (<27% clay) **H:** Heavy (27-35% clay)

2. **MOTTLE COL**: Mottle colour using Munsell notation.

3. **MOTTLE ABUN**: Mottle abundance, expressed as a percentage of the matrix or surface described:

F: few <2% **C:** common 2-20% **M:** many 20-40% **VM:** very many 40% +

4. **MOTTLE CONT**: Mottle contrast:

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL**: Ped face colour using Munsell notation.

6. **GLEY:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - one of the following is used:

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

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

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	**WK**:	weakly developed	**MD**:	moderately developed
	ST:	strongly developed		
Ped size	**F**:	fine	**M**:	medium
	C:	coarse		
Ped shape	**S**:	single grain	**M**:	massive
	GR:	granular	**AB**:	angular blocky
	SAB:	sub-angular blocky	**PR**:	prismatic
	PL:	platy		

9. **CONSIST**: Soil consistence is described using the following notation:

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

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor

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

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

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

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

15. Other notations:

APW:	available water capacity (in mm) adjusted for wheat
APP:	available water capacity (in mm) adjusted for potatoes
MBW:	moisture balance, wheat
MBP:	moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : PLAN2 DRAYTONHSE DRAYTON Pit Number : 1P

Grid Reference: SU89100420 Average Annual Rainfall : 774 mm
Accumulated Temperature : 1537 degree days
Field Capacity Level : 158 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MZCL	10YR43 00	2	4	HR					
25- 48	MZCL	10YR64 66	0	4	HR	F	MVCSAB	FR	M	
48- 58	MZCL	10YR62 63	0	45	HR	C		FR	M	
58- 64	MZCL	10YR63 00	0	50	HR	C		FR	M	
64-120	GH	10YR54 56	0	0	HR			FR	M	

Wetness Grade : 1 Wetness Class : I
Gleying :048 cm
SPL : cm

Drought Grade : 3A APW : 99 mm MBW : -18 mm
APP : 100mm MBP : -13 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : PLAN2 DRAYTONHSE DRAYTON Pit Number : 2P

Grid Reference: SU88700400 Average Annual Rainfall : 774 mm
Accumulated Temperature : 1537 degree days
Field Capacity Level : 158 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MZCL	10YR42 00	0	2	HR					
32- 55	MZCL	25Y 56 58	0	2	HR	F	MDCSAB	FR	M	
55- 72	HZCL	10YR72 00	0	2	HR	C	MDCSAB	FR	M	
72- 90	HZCL	25Y 62 00	0	48	HR	C			M	
90-120	GH		0	0	GH				M	

Wetness Grade : 1 Wetness Class : I
Gleying :055 cm
SPL : cm

Drought Grade : 2 APW : 124mm MBW : 7 mm
APP : 123mm MBP : 10 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	USE	ASPECT GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU89000400	WHT				1	1	59	-58	59	-54	4				DR	3B	IMP35 SEE 1P
1P	SU89100420	WHT	048			1	1	99	-18	100	-13	3A				DR	3A	IMP 85 AT AB 2
2	SU89100420	WHT				1	1	94	-23	99	-14	3B				DR	3A	IMP58 SEE 1P
2P	SU88700400	WHT	055			1	1	124	7	123	10	2				DR	2	IMP90 AT AB 8
3	SU88700410	WHT	051			1	1	98	-19	105	-8	3A				DR	3A	IMP61 SEE 2P
4	SU88800410	WHT	050			1	1	109	-8	122	9	3A				DR	2	IMP70 SEE 2P
5	SU88900410	WHT	047			1	1	101	-16	109	-4	3A				DR	2	IMP62 SEE 2P
6	SU89000410	WHT				1	1	45	-72	45	-68	4				TS	3B	DR IMP30 SEE 2
7	SU89100410	WHT				1	1	56	-61	56	-57	4				TS	3B	DR IMP40 SEE 1
8	SU88700400	WHT	050			1	1	108	-9	122	9	3A				DR	2	IMP70 SEE 2P
9	SU88800400	WHT	050			1	1	130	13	122	9	2				DR	2	IMP92 SEE 2P
10	SU88900400	WHT	048			1	1	114	-3	122	9	3A				DR	2	IMP76 SEE 2P
11	SU89000400	WHT	048			1	1	103	-14	113	0	3A				DR	2	IMP65 SEE 2P
12	SU89100400	WHT	030			2	2	69	-48	69	-44	3B				DR	3B	IMP40 SEE 1P
13	SU88900390	WHT	045			1	1	118	1	120	7	3A				DR	2	IMP82 SEE 2P
14	SU89000390	WHT				1	1	81	-36	81	-32	3B				DR	3A	IMP48 SEE 1P
15	SU89180395	WHT				1	1	41	-76	41	-72	4				TS	3B	DR IMP30 SEE 1

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1	0-30	mzcl	10YR42 00						3	0	HR	6							
	30-35	mzcl	10YR43 54						0	0	HR	45		M					IMP 45CM SEE 1P
1P	0-25	mzcl	10YR43 00						2	0	HR	4							
	25-48	mzcl	10YR64 66	75YR68 00	F				0	0	HR	4	MVCSAB	FR	M				
	48-58	mzcl	10YR62 63	75YR68 58	C			Y	0	0	HR	45		FR	M				WET SIEVED
	58-64	mzcl	10YR63 00	75YR68 00	C			Y	0	0	HR	50		FR	M				WET SIEVED
	64-120	gh	10YR54 56						0	0	HR	0		FR	M				WET SIEVED
2	0-34	mzcl	10YR43 00						2	0	HR	4							
	34-58	mzcl	10YR54 66	75YR58 00	F		00MN00 00	S	0	0	HR	10		M					IMP 58CM SEE 1P
2P	0-32	mzcl	10YR42 00						0	0	HR	2							PSD
	32-55	mzcl	25Y 56 58	10YR56 58	F				0	0	HR	2	MDCSAB	FR	M				PSD
	55-72	hzcl	10YR72 00	10YR56 58	C			Y	0	0	HR	2	MDCSAB	FR	M				PSD
	72-90	hzcl	25Y 62 00	25Y 64 66	C			Y	0	0	HR	48		M					WET SIEVED IMP 90 C
	90-120	gh							0	0	GH	0		M					70%+ STONES
3	0-25	mzcl	10YR43 00						1	0	HR	2							
	25-51	mzcl	25Y 54 00	10YR58 00	S				0	0	HR	2		M					
	51-61	hzcl	25Y 72 64	10YR58 00	C		00MN00 00	Y	0	0	HR	10		M					IMP 61CM SEE 2P
4	0-28	mzcl	10YR42 00						2	0	HR	2							
	28-50	mzcl	25Y 54 00	10YR56 00	F				0	0	HR	2		M					
	50-70	hzcl	25Y 62 64	10YR56 00	C			Y	0	0	HR	2		M					IMP 70CM SEE 2P
5	0-32	mzcl	10YR43 00						1	0	HR	2							
	32-47	mzcl	25Y 54 00	10YR58 00	C			S	0	0	HR	2		M					
	47-62	hzcl	25Y 72 54	10YR58 00	C		00MN00 00	Y	0	0	HR	5		M					IMP 62CM SEE 2P
6	0-30	mzcl	10YR42 00						17	5	HR	22							3B TOPSOIL STONE
7	0-30	mzcl	10YR42 52						16	3	HR	20							3B TOPSOIL STONE
	30-40	mzcl	10YR42 52						0	0	HR	45		M					IMP 40CM SEE 1P
8	0-25	mzcl	10YR42 00						0	0	HR	2							
	25-50	mzcl	25Y 54 00						0	0	HR	2		M					
	50-60	hzcl	25Y 54 00	10YR56 00	C			S	0	0	HR	2		M					
	60-70	hzcl	25Y 62 64	10YR56 58	C			Y	0	0	HR	2		M					IMP 70 CM SEE 2P
9	0-28	mzcl	10YR42 00						0	0	HR	2							
	28-50	mzcl	25Y 64 00	10YR56 00	F				0	0	HR	2		M					
	50-70	hzcl	25Y 71 64	10YR58 00	C		00MN00 00	Y	0	0	HR	2		M					
	70-92	hzcl	25Y 71 73	10YR58 00	C		00MN00 00	Y	0	0	HR	2		M					IMP 92CM SEE 2P
10	0-25	mzcl	10YR42 43						0	0	HR	2							
	25-48	mzcl	25Y 44 00				00MN00 00		0	0	HR	2		M					
	48-76	hzcl	25Y 71 64	10YR58 00	C		00MN00 00	Y	0	0	HR	2		M					IMP 76CM SEE 2P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
11	0-30	mzcl	10YR43 53						1	0	HR	3							
	30-48	mzcl	10YR64 00						0	0	HR	2		M					
	48-65	hzcl	10YR64 00	10YR68 00	C			Y	0	0	HR	5		M					IMP 65CM SEE 2P
12	0-30	mzcl	10YR42 00						3	1	HR	6							
	30-40	mzcl	10YR61 62	10YR68 00	C			Y	0	0	HR	10		M					IMP 40CM SEE 1P
13	0-28	mzcl	10YR53 00						1	0	HR	3							
	28-45	mzcl	10YR54 66						0	0	HR	10		M					
	45-55	hzcl	10YR64 00	10YR68 00	C		00MN00 00	Y	0	0		0		M					
	55-82	hzcl	25Y 64 00	10YR68 00	C		00MN00 00	Y	0	0		0		M					IMP 82CM SEE 2P
14	0-25	mzcl	10YR53 00						1	0	HR	5							
	25-48	mzcl	10YR64 00						0	0	HR	10		M					IMP 48CM SEE 1P
15	0-20	mzcl	10YR42 00						16	4	HR	20							3B TSST PSD
	20-30	mzcl	10YR42 00						0	0	HR	40		M					IMP 30CM SEE 1P