Chichester District Local Plan
Objector Sites
OSH 1 Land at Broadbridge,
West Sussex
Agricultural Land Classification
August 1995

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

CHICHESTER DISTRICT LOCAL PLAN
OSH 1: LAND AT BROADBRIDGE

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 14.7 ha of land at Broadbridge, near Chichester, West Sussex. The survey was carried out during August 1995.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Reading in connection with the Chichester District Local Plan, Objector Sites. The results of this survey supersede previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in ADAS. 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 landcover on the site was ploughed bare soil having recently had a pea crop harvested. The Urban area comprises a dwelling and outbuildings. The Non-agricultural area is a track.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000; 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)	% surveyed area	% agricultural area
2	7.6	51.7	53.1
3a	6.7	45.6	46.9
Urban	0.1	0.7	
Non - Agricultural	0.3	2.0	
Total survey area	14.3		100.0
Total site area	14.7	100.0	

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 16 borings and one soil pit were described.

8. The agricultural land at this site has been classified as Grade 2 (very good quality) and Subgrade 3a (good quality). Principal limitations to land quality include soil wetness and soil droughtiness. The soils in this area comprise very slightly stony, light and medium silty topsoils over medium silty subsoils. In the local climatic regime, soils of this nature slightly reduce profile available water. As such, there is a slight risk of drought stress affecting plant growth and yield. The lower subsoils were found to be slowly permeable. This causes a slight to moderate drainage impedance and leads to a soil wetness limitation. Soil wetness affects plant growth and yield and reduces the opportunities for cultivations and/or grazing without causing structural damage to the soil.

Climate

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

10. 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 815 050
Altitude	m, AOD	8
Accumulated Temperature	day°C	1542
Average Annual Rainfall	mm	767
Field Capacity Days	days	157
Moisture Deficit, Wheat	mm	116
Moisture Deficit, Potatoes	mm	113

11. 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.

12. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. Local climatic factors such as exposure and frost risk are also believed not to affect the site. The site is climatically Grade 1.

Site

14. The site lies at an altitude of approximately 8 m AOD and is flat overall. Nowhere on the site does gradient, microrelief or flooding affect the agricultural land quality.

Geology and soils

15. The most detailed published geological information for the site (BGS, 1972), shows it to be underlain by brickearth as a drift deposit.

16. The most detailed published soils information for the site (SSGB, 1967) shows the majority of the site to be underlain by soils of the Park Gate Series. The north east and extreme south east of the site is mapped as Hook series. Park Gate series soils are described as 'deep stoneless silty soils variably affected by groundwater' (SSEW, 1983). Hook series soils are described as 'deep well drained often stoneless fine silty soils. Some similar soils affected by groundwater and fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Some shallower soils over chalk. Slight risk of water erosion.' (SSEW, 1983). Soils of these broad types were found on the site.

Agricultural Land Classification

17. 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.

18. 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 III.

Grade 2

19. Land of very good quality has been mapped towards the east and centre of the site. The principal limitations include both soil wetness and soil droughtiness.

20. Soils in this area commonly comprise a very slightly stony (up to 4% total v/v flints) non-calcareous medium silty clay loam or, occasionally, silt loam topsoil. This passes to stoneless or very slightly stony (up to 5% total v/v flints) medium silty clay loam upper subsoil horizons, which were often gleyed or slightly gleyed. These pass to a gleyed and slowly permeable (see pit 1) stoneless heavy silty clay loam lower subsoil from between 60 and 80cm. In the local climate, soils of this nature are placed in Wetness Class II (see Appendix II) and, subsequently, Grade 2 is applied when the medium workability status of the topsoil is taken into account. Soil wetness slightly restricts land utilisation in terms of the number of days when machinery cultivations and grazing by livestock can occur without causing structural damage to the soil. Soil wetness also affects plant growth and yield.

21. Occasionally, the slowly permeable lower subsoil horizon was not present within 120cm; medium silty clay loam textures were recorded to 120cm. These soils are placed in Wetness Class II and Grade 2 because gleying was present within 40cm.

22. In virtually all the profiles recorded, the local climate leads the soils to be slightly drought prone as well as being affected by soil wetness. This is due to there being restricted amounts of water available in the profile for extraction by crops. The exception to this is where silt loam topsoils were recorded. In these cases, soil droughtiness was not a limitation; soil wetness alone restricts the land to Grade 2.

Subgrade 3a

23. Land of good quality has been mapped towards the north, west and south of the site, in a single unit, where soil wetness limitations predominate.

24. Soils in this area are essentially similar to those described above (see para. 20), except that the slowly permeable heavy silty clay loam lower subsoil horizon occurs at a shallower depth (45-65cm) and the medium silty clay loam upper subsoil is gleyed in virtually all cases above 40cm. This combination of factors causes these profiles to be placed in Wetness Class III (see Appendix II) and, subsequently, Subgrade 3a when the medium workability status of the topsoils is taken into account. Subgrade 3a soil wetness restricts land utilisation as detailed above (para. 20), but to a greater degree than land shown as Grade 2.

M Larkin
Resource Planning Team
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet 317, Chichester. Drift Edition. 1:63 360.* BGS: London.

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

Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South East England. 1:250 000.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England. Bulletin No. 15.* SSEW: Harpenden.

Soil Survey of Great Britain (1967) *Soils Maps of the West Sussex Coastal Plain. 1:25 000.* SSGB: Harpenden.

Soil Survey of Great Britain (1967) *Soils of the West Sussex Coastal Plain. Bulletin No. 3.* SSGB: 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.

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 (e.g. 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, e.g. 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

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

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.

Wetness Class	Duration of waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years.[2]
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.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

[1] The number of days is not necessarily a continuous period.

[2] 'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

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	**DCW**:	Deciduous Wood
HTH:	Heathland	**BOG**:	Bog or Marsh	**FLW**:	Fallow
PLO:	Ploughed	**SAS**:	Set aside	**OTH**:	Other
HRT:	Horticultural Crops				

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	**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**:	Erosion Risk	**WD**:	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
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	**SLST**:	soft oolitic or dolimitic limestone
CH:	chalk	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**GH**:	gravel with non-porous (hard) stones
MSST:	soft, medium grained sandstone	**GS**:	gravel with porous (soft) stones
SI:	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 **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

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 : CHICHESTER DLP OSH 1 Pit Number : 1P

Grid Reference: SU81700510 Average Annual Rainfall : 767 mm
Accumulated Temperature : 1542 degree days
Field Capacity Level : 157 days
Land Use : Ploughed
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR42 52	1	3	HR					
30- 45	MZCL	10YR54 00	0	0		F	MDCSAB	FM	M	
45- 68	MZCL	10YR53 52	0	0		C	MDCSAB	FM	M	
68- 83	HZCL	25Y 62 63	0	0		C	MDCPR	FM	P	
83- 90	HZCL	10YR52 53	0	0		M	MDCPR	FM	P	

Wetness Grade : 2 Wetness Class : II
Gleying : 45 cm
SPL : 68 cm

Drought Grade : 2 APW : 121mm MBW : 5 mm
APP : 122mm MBP : 9 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

program: ALC012 LIST OF BORINGS HEADERS 15/08/95 CHICHESTER DLP OSH 1 page 1

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	--WETNESS-- GLEY	SPL	CLASS	-WHEAT- GRADE	AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU81700530	PLO		30	55	3	3A	123	7	118	5	2				WE	3A	
1P	SU81700510	PLO		45	68	2	2	121	5	122	9	2				WD	2	PIT 90 DR 90
2	SU81800530	PLO		52	52	3	3A	122	6	116	3	2				WE	3A	SL GLEY 30
3	SU81900530	PLO		70	70	1	1	141	25	125	12	2				DR	2	SL GLEY 45
4	SU82000530	PLO		60	60	2	2	137	21	120	7	2				WD	2	
5	SU81700520	PLO		0	50	3	3A	134	18	114	1	2				WE	3A	
6	SU81800520	PLO		65	65	2	2	151	35	135	22	1				WE	2	SL GLEY 30
7	SU81900520	PLO				1	1	73	-43	73	-40	3B				DR	3B	QGDEIMP DRY 40
8	SU82000520	PLO		80	80	1	1	145	29	125	12	2				DR	2	
9	SU81600510	PLO		25	65	3	3A	135	19	118	5	2				WE	3A	
10	SU81700510	PLO		45	80	2	2	141	25	121	8	2				WD	2	
11	SU81800510	PLO		28		2	2	157	41	121	8	2				WD	2	
12	SU81900510	PLO		28		2	2	168	52	132	19	1				WE	2	
13	SU81600500	PLO		25	50	3	3A	129	13	112	-1	2				WE	3A	
14	SU81700500	PLO		50	80	2	2	140	24	120	7	2				WD	2	SL GLEY 25
15	SU81800500	PLO		45	45	3	3A	140	24	121	8	2				WE	3A	
16	SU81900500	PLO		25	55	3	3A	120	4	114	1	3A				WE	3A	IMPCH DRIFT 95

AMPLE	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	10YR52 00	10YR58 00	F				0	0		0							
	30-55	mzcl	10YR52 00	10YR58 61	C			Y	0	0		0		M					
	55-100	hzcl	10YR53 00	10YR68 71	C		00MN00 00	Y	0	0		0		P			Y		
1P	0-30	mzcl	10YR42 52						1	0	HR	3							
	30-45	mzcl	10YR54 00	10YR56 00	F		00MN00 00		0	0		0	MDCSAB	FM M					
	45-68	mzcl	10YR53 52	10YR56 00	C		00MN00 00	Y	0	0		0	MDCSAB	FM M					
	68-83	hzcl	25Y 62 63	10YR58 00	C		00MN00 00	Y	0	0		0	MDCPR	FM P	Y		Y		
	83-90	hzcl	10YR52 53	10YR58 61	M		00MN00 00	Y	0	0		0	MDCPR	FM P	Y		Y		
2	0-30	mzcl	10YR52 00	10YR56 00	F				0	0		0							
	30-52	mzcl	10YR54 00	10YR56 00	C			S	0	0		0		M					
	52-100	hzcl	75YR52 00	10YR68 00	C		00MN00 00	Y	0	0		0		P			Y		
3	0-30	mzcl	10YR52 53	10YR56 00	F				0	0		0							
	30-45	mzcl	10YR53 54						0	0		0		M					
	45-70	mzcl	10YR54 00	00MN00 00	C			S	0	0		0		M					
	70-120	hzcl	10YR53 00	10YR68 62	C		00MN00 00	Y	0	0		0		P			Y		
4	0-30	mzcl	10YR53 00						0	0		0							
	30-60	mzcl	10YR54 00						0	0		0		M					
	60-120	hzcl	75YR52 00	10YR68 00	C		00MN00 00	Y	0	0		0		P			Y		
5	0-26	mzcl	10YR52 00	10YR58 61	C			Y	0	0		0							
	26-50	mzcl	10YR63 53	10YR68 00	C			Y	0	0		0		M					
	50-100	hzcl	10YR53 00	10YR68 00	C		00MN00 00	Y	0	0		0		P			Y		
	100-120	c	10YR53 00	10YR68 00	C		00MN00 00	Y	0	0		0		P			Y		
6	0-30	zl	10YR52 00	10YR58 00	F				0	0		0							
	30-65	mzcl	10YR51 00	10YR58 00	C			S	0	0		0		M					
	65-120	hzcl	10YR53 00	10YR58 62	C		00MN00 00	Y	0	0		0		P			Y		
7	0-25	mzcl	10YR52 00	10YR58 00	F				0	0		0							
	25-40	mzcl	10YR54 00						0	0		0		M					IMP DRY SOIL 40
8	0-30	mzcl	10YR52 00	10YR56 00	F				0	0		0							
	30-80	mzcl	10YR54 00						0	0		0		M					
	80-120	hzcl	10YR53 00	10YR68 00	C			Y	0	0		0		P			Y		
9	0-25	mzcl	10YR43 00						0	0	HR	3							
	25-65	mzcl	10YR53 52	10YR58 00	C		00MN00 00	Y	0	0	HR	3		M					
	65-80	hzcl	25Y 63 00	10YR58 00	C		00MN00 00	Y	0	0	HR	3		P			Y		
	80-120	hzcl	25Y 63 71	10YR58 00	C			Y	0	0	CH	10		P			Y	Y	
10	0-30	mzcl	10YR42 00						0	0	HR	3							
	30-45	mzcl	10YR54 00						0	0	HR	5		M					
	45-65	mzcl	10YR52 00	10YR56 00	C		00MN00 00	Y	0	0	HR	3		M					
	65-80	mzcl	25Y 61 71	10YR68 00	M		00MN00 00	Y	0	0	HR	3		M					
	80-120	hzcl	25Y 62 00	10YR58 00	M		00MN00 00	Y	0	0		0		P			Y		

AMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
11	0-28	mzcl	10YR42 00						1	0	HR	4							
	28-70	mzcl	10YR53 52	10YR56 00	C		00MN00 00	Y	0	0	HR	3		M					
	70-120	mzcl	25Y 63 53	10YR58 00	M		00MN00 00	Y	0	0		0		M					
12	0-28	zl	10YR42 00						1	0	HR	4							
	28-50	mzcl	10YR63 00	10YR56 00	C			Y	0	0	HR	3		M					
	50-80	mzcl	10YR62 00	10YR58 00	M		00MN00 00	Y	0	0		0		M					
	80-120	mzcl	25Y 62 00	10YR58 00	M		00MN00 00	Y	0	0		0		M					
13	0-25	mzcl	10YR42 00						0	0	HR	3							
	25-50	mzcl	10YR62 00	10YR56 00	C		00MN00 00	Y	0	0		0		M					
	50-120	hzcl	25Y 53 52	10YR58 00	M		00MN00 00	Y	0	0	HR	5		P		Y			
14	0-25	mzcl	10YR42 00						1	0	HR	4							
	25-50	mzcl	10YR54 00	10YR56 00	C		00MN00 00	S	0	0	HR	5		M					
	50-80	mzcl	10YR53 52	10YR58 00	M		00MN00 00	Y	0	0		0		M					
	80-120	hzcl	25Y 62 63	10YR58 68	M		00MN00 00	Y	0	0		0		P		Y			
15	0-25	mzcl	10YR42 00						0	0	HR	3							
	25-45	mzcl	10YR53 54	10YR56 00	F		00MN00 00		0	0		0		M					
	45-75	hzcl	10YR52 62	10YR58 00	C		00MN00 00	Y	0	0	HR	3		M					
	75-120	mzcl	25Y 61 71	10YR68 00	M			Y	0	0	CH	10		P		Y	Y		
16	0-25	mzcl	10YR42 00						0	0	HR	3							
	25-55	mzcl	10YR53 00	10YR56 00	C		00MN00 00	Y	0	0		0		M					
	55-85	hzcl	10YR52 00	10YR58 00	M		00MN00 00	Y	0	0	HR	5		P		Y			
	85-95	mzcl	25Y 71 61	10YR68 00	M			Y	0	0	CH	30		M			Y		IMP CH DRIFT 95