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Winchester District Local Plan
Site 56 Old Park Farm,
Waterlooville Hampshire
Agricultural Land Classification
ALC Map and Report
July 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

WINCHESTER DISTRICT LOCAL PLAN
SITE 56 OLD PARK FARM WATERLOOVILLE

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 Winchester district of Hampshire This work forms part of MAFF s statutory input to the preparation of the Winchester District Local Plan

1 2 Approximately 28 4 hectares of land relating to land at Old Park Farm Waterlooville Hampshire was surveyed in July 1994 The survey was undertaken at a detailed level of approximately one boring per hectare A total of 31 borings and 2 soil inspection pits were assessed in accordance with MAFF s revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988) These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture

1 3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS

1 4 At the time of survey the agricultural land use on the site was permanent grassland with an area of under utilised grassland to the east of the site Due to a lack of ownership information a small area to the east of the site remains unsurveyed

1 5 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 This map supersedes any previous survey information for this site

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
3b	28 1	98 6	100%
Not Surveyed	0 4	1 4	
Total area of site	28 4	100%	

1 6 A general description of the grades subgrades and land use categories is provided in Appendix I 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 whole of the surveyed area of the site has been classified as Subgrade 3b The majority of the agricultural land is limited to Subgrade 3b by soil wetness These soils comprise slowly permeable clay within 40 cm depth resulting in poorly drained soils restricted to Subgrade 3b by wetness and workability problems The remaining soils to the south of the site lie over river and valley gravel with soil droughtiness being the main limitation Soils consist of medium textured topsoils and upper subsoils containing increasing amounts of gravel to depth This significantly restricts the available water reserves in the profile for crop growth and also limits the depth of effective rooting

2 Climate

2 1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

2 2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall as a measure of overall wetness and accumulated temperature (degree days Jan June) as a measure of the relative warmth of a locality

2 3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met Office 1989) The details are given in the table below and these show that there is no overall climatic limitation affecting the site However climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations Across much of the site field capacity days are <175 However across the north eastern part of the site where the altitude is ≥ 38m field capacity increases to 176 days Despite being a significant climatic boundary in the assessment of soil wetness this transition has no overall effect on the grading of this site although occasional borings where topsoils are heavy are of a slightly poorer quality Grade 4

2 4 No local climatic factors such as exposure or frost risk affect the site

Table 2 Climatic Interpolations

Grid Reference	SU669106	SU667099
Altitude (m)	40	31
Accumulated Temperature (degree days Jan June)	1506	1517
Average Annual Rainfall (mm)	819	799
Field Capacity (days)	176	170
Moisture Deficit Wheat (mm)	108	110
Moisture Deficit Potatoes (mm)	101	104
Overall Climatic Grade	1	1

3 Relief

3 1 The site rises gently (0 1) from 31m AOD in the south west corner to 40m AOD in the north east corner Nowhere on the site does gradient or relief impose any restriction to land quality although altitude does influence climatic parameters as outlined in para 2 3

4 Geology and Soil

4 1 British Geological Survey (1971) Sheet 316 Fareham shows the majority of the site to be underlain by London Clay with river and valley gravel to the south of the site

4 2 The Soil Survey map of South East England (SSEW 1983 1 250 000) shows that the soils on this site comprise the Windsor association These soils are described as pelo stagnogleys slowly permeable and seasonally waterlogged Soils have grey and ochreous mottled subsurface horizons becoming increasingly brown with depth The soils are stoneless well structured and poorly drained (Wetness Class IV) (SSEW 1983)

4 3 Detailed field examination of the soils on the site generally found deep poorly drained profiles in the north of the site To the south of the site soils are fine silty over clay with moderately stony upper subsoils increasing to very stony at depth

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

Subgrade 3b

5 3 The majority of the land to the centre and north of the site is restricted by significant soil wetness and workability limitations The land is poorly drained (Wetness Class IV) with heavy clay loams and clays at shallow depth Profiles typically consist of stoneless to very slightly stony (1% total flints) medium or heavy silty clay loam topsoils over gleyed and slowly permeable stoneless heavy clay loam or silty clay loam upper subsoils in turn over slowly permeable stoneless lower subsoils which significantly impede drainage These profiles are typified by Pit 1 and are limited to Subgrade 3b by wetness and workability limitations The interaction between topsoil textures and poor drainage characteristics at this site means this land is subject to significantly restricted flexibility of cropping stocking and cultivations Soil wetness will also adversely affect crop growth and development

Land to the south of the site is restricted by significant soil droughtiness limitations The land is moderately well drained (Wetness Class II) with gleyed permeable upper and lower subsoils affected by a high groundwater table Profiles typically consist of slightly stony (15% total flints) medium silty clay loam topsoils over moderately stony (25% total flints) gleyed permeable heavy clay loam upper subsoils in turn over gleyed permeable very stony (50% total flints) clay lower subsoils to 55 cm depth Soils become stonier with depth This stoniness restricts the available water reserves in the profile for crop growth and also limits the depth of effective rooting These profiles are typified by Pit 2 and are limited to Subgrade 3b by severe soil droughtiness limitations The shortfall in available water reserves makes these soils particularly prone to drought stress and will reduce the yield potential of crops grown on this land

Not Surveyed

5 4 Due to lack of access information 0 4 hectares of land to the east of the site was not surveyed

ADAS Ref 1513/112/94
MAFF Ref EL15/594

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No 316 Fareham 1 63 360 (drift)

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 (1983) Sheet 6 Soils of South East England and accompanying legend

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 religous buildings cemetries 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[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

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

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

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

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	**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 appropiate 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

S te Name WINCHESTER LP SITE 56 P t N mbe 1P

G id R f ce SU66801040 A e g A l Ra f ll 819 mm
Acc mul ted Tempe t e 1506 deg ee d ys
F eld C p ty L v l 176 d ys
La d U e P rm e t G s
Slope and A pect 01 deg ees SW

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 23	MZCL	10YR53 00	0	1	HR	M				
23 34	HZCL	10YR62 00	0	0		M	WDVCAB	VM	P	
34 60	C	10YR61 00	0	0		M	MDVCAB	FM	P	

Wetn G ade 3B W t ss C l s IV
Gley g 0 cm
SPL 023 cm

D o ght G ade APW 000mm MBW 0 mm
APP 000mm MBP 0 mm

FINAL ALC GRADE 3B
MAIN LIMITATION W t e

SOIL PIT DESCRIPTION

S te Name WINCHESTER LP SITE 56 P t N mbe 2P

G d R f nce SU66801010 A e ge A l R fall 819 mm
Acc mulated Tempe t e 1506 deg ee d y
F ld C p c ty L l 176 d ys
L d Use P rmane t G ass
Slope nd A pect deg

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 20	MZCL	10YR52 00	2	15	HR	C				
20 45	HCL	10YR53 00	0	25	HR	C		FM	M	
45 55	C	10YR53 00	0	50	HR	M		FM	P	

Wetness G ade 3A Wet e Cla II
Gl y g 0 cm
SPL No SPL

D o ght G de 3B APW 069mm MBW 40 mm
APP 070mm MBP 32 mm

FINAL ALC GRADE 3B
MAIN LIMITATION D ght e

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT	COMMENTS
1	SU66901070	PGR	NE	01	0	025	4	3B	101	8	106	4	3A				WE 3B	
1P	SU66801040	PGR	SW	01	0	023	4	3B	000	0	000	0					WE 3B	PIT 60
2	SU67001070	PGR	S	01	0	025	4	4	101	8	106	4	3A				WE 4	
2P	SU66801010	PGR			0		2	3A	069	40	070	32	3B				DR 3B	IMP 55
3	SU66801060	PGR	S	01	025	025	4	3B	109	0	117	15	3A				WE 3B	
4	SU66901060	PGR			0	025	4	3B	000	0	000	0					WE 3B	HCL U S
5	SU67001060	PGR	SE	01	0	020	4	4	098	11	103	1	3A				WE 4	
6	SU66801050	PGR	S	01	010	010	4	3B	100	9	103	1	3A				WE 3B	
7	SU66901050	PGR	SW	01	0	028	4	3B	000	0	000	0					WE 3B	
8	SU66801040	PGR	S		015	015	4	3B	101	8	106	4	3A				WE 3B	
9	SU66901040	PGR	SW	01	0	025	4	3B	000	0	000	0					WE 3B	HCL U S
10	SU67001040	PGR	SW	01	0	023	4	3B	000	0	000	0					WE 3B	HCL U S
11	SU66701030	PGR	S	01	0	045	4	4	000	0	000	0					WE 4	SPL 45
12	SU66801030	PGR	S	01	010	030	4	3B	114	5	105	3	2				WE 3B	
13	SU66901030	PGR			0	026	4	3B	000	0	000	0					WE 3B	
14	SU67001030	PGR	S	01	0	020	4	3B	098	11	103	1	3A				WE 3B	
15	SU67101030	SET	S	01	0	040	4	3B	107	2	112	10	3A				WE 3B	
16	SU66701020	PGR	S	01	020	032	4	3B	000	0	000	0					WE 3B	SPL 32
17	SU66801020	PGR	S	01	015	035	4	3B	103	6	108	6	3A				WE 3B	
18	SU66901020	PGR			0	027	4	3B	000	0	000	0					WE 3B	
19	SU67001020	PGR	S	01	020	020	4	3B	098	11	103	1	3A				WE 3B	
20	SU67101020	SET	S	01	035	035	4	3B	106	3	111	9	3A				WE 3B	
21	SU66701010	PGR	S	01	020		2	3A	052	57	052	50	4				DR 3B	SEE 2P
22	SU66801010	PGR					1	2	052	57	052	50	4				DR 3B	SEE 2P
23	SU66901010	PGR	S	01			1	2	034	75	034	68	4				DR 3B	SEE 2P
24	SU67001010	PGR					1	2	034	75	034	68	4				DR 3B	SEE 2P
25	SU67101010	SET	S	01			1	2	034	75	034	68	4				DR 3B	SEE 2P
26	SU66701000	PGR			0	023	4	4	000	0	000	0					WE 4	QSPL23
27	SU66801000	PGR					1	2	031	78	031	71	4				DR 3B	SEE 2P
28	SU66901000	PGR	S	01			1	2	034	75	034	68	4				DR 3B	SEE 2P
29	SU66600990	PGR			0		2	3A	051	58	051	51	4				DR 3B	SEE 2P
30	SU66700990	PGR					1	2	031	78	031	71	4				DR 3B	SEE 2P
31	SU66800990	PGR					1	2	031	78	031	71	4				DR 3B	SEE 2P

				MOTTLES			PED		STONES				STRUCT/	SUBS			
AMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0 25	mzcl	10YR53 62	10YR53 62	M			Y	0	0		0						
	25 60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
	60 80	c	10YR52 00	10YR56 00	M			Y	0	0		0		P			Y	
1P	0 23	mzcl	10YR53 00	10YR58 00	M			Y	0	0	HR	1						
	23 34	h cl	10YR62 00	75YR56 00	M			Y	0	0		0	WDVCAB VM	P	Y		Y	
	34 60	c	10YR61 00	75YR68 00	M			Y	0	0		0	MDVCAB FM	P	Y		Y	
2	0 25	h cl	10YR42 00	75YR56 00	C			Y	0	0		0						
	25 80	c	25Y 62 00	10YR68 00	C			Y	0	0		0		P			Y	
2P	0 20	mzcl	10YR52 00	10YR58 00	C			Y	2	0	HR	15						
	20 45	hcl	10YR53 00	75YR58 00	C			Y	0	0	HR	25	FM	M				
	45 55	c	10YR53 00	75YR58 00	M	00MN00	00	Y	0	0	HR	50	FM	P				
3	0 25	mcl	10YR54 00	75YR58 00	F				0	0		0						
	25 40	hcl	10YR62 00	10YR68 00	C			Y	0	0		0		P			Y	
	40 80	c	25Y 62 00	75YR68 00	C			Y	0	0		0		P			Y	
4	0 25	m cl	10YR53 62	75YR56 00	M			Y	0	0		0						
	25 38	h l	10YR62 00	75YR56 00	M			Y	0	0		0		P			Y	
	38 60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
5	0 20	hzcl	10YR51 00	05YR58 00	C			Y	0	0		0						
	20 80	c	25Y 62 00	75YR56 00	C			Y	0	0		0		P			Y	
6	0 10	mzcl	10YR54 00	75YR68 00	F				0	0	HR	2						
	10 35	h cl	10YR62 00	10YR68 00	C			Y	0	0		0		P				
	35 80	c	25Y 62 00	75YR68 00	C			Y	0	0		0		P			Y	
7	0 28	mzcl	10YR53 62	10YR58 00	M			Y	0	0		0						
	28 50	c	10YR62 61	75YR68 00	M			Y	0	0		0		P			Y	
	50 60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
8	0 15	mzcl	10YR54 00	75YR58 00	F				0	0		0						
	15 30	h cl	10YR62 00	10YR68 00	C			Y	0	0		0		P				
	30 80	c	25Y 62 00	10YR58 00	C			Y	0	0		0		P			Y	
9	0 25	m cl	10YR53 00	10YR58 00	M			Y	0	0	HR	1						
	25 30	hcl	10YR62 00	75YR56 00	M			Y	0	0	HR	1		P			Y	
	30 60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
10	0 23	m cl	10YR53 00	10YR56 00	M			Y	0	0	HR	1						
	23 30	hcl	10YR62 00	75YR56 00	M			Y	0	0		0		P			Y	
	30 60	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
11	0 45	c	10YR53 00	10YR58 62	M	00MN00	00	Y	0	0	HR	1					Y	
	45 60	c	10YR52 00	10YR58 62	C	00MN00	00	Y	0	0		0		P	Y		Y	

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
12	0 10	mzcl	10YR54 00	75YR58 00	F				0	0		0						
	10 30	hzcl	10YR52 00	05YR58 00	C			Y	0	0		0		P				
	30 100	c	25Y 62 00	10YR68 00	C			Y	0	0		0		P			Y	
13	0 26	mzcl	10YR53 00	10YR58 00	M			Y	0	0	HR	1						
	26 50	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
	50 60	c	10YR53 61	10YR58 00	M			Y	0	0		0		P			Y	
14	0 20	m cl	10YR52 00	75YR56 00	C			Y	0	0		0						
	20 80	c	10YR62 00	10YR58 00	C			Y	0	0		0		P			Y	
15	0 25	m cl	10YR42 00	75YR56 00	F			Y	0	0		0						
	25 40	h cl	10YR52 00	10YR58 00	C			Y	0	0		0		M				
	40 80	c	25Y 62 00	75YR56 00	C			Y	0	0		0		P			Y	
16	0 20	mzcl	10YR53 00	10YR58 62	F				0	0	HR	1						
	20 32	mzcl	10YR53 00	10YR58 62	C			Y	0	0	HR	1		M				
	32 55	c	10YR53 00	10YR58 62	M			Y	0	0		0		P	Y		Y	
17	0 15	mzcl	10YR54 00	75YR58 00	F				0	0		0						
	15 35	h cl	10YR62 00	10YR58 00	C			Y	0	0		0		P				
	35 80	c	10YR52 00	75YR58 00	C			Y	0	0		0		P			Y	
18	0 27	mzcl	10YR53 00	10YR58 00	M			Y	0	0	HR	1						
	27 50	c	10YR61 00	75YR68 00	M			Y	0	0		0		P			Y	
	50 60	c	10YR52 62	10YR58 00	M			Y	0	0		0		P			Y	
19	0 20	mzcl	10YR54 00						0	0		0						
	20 80	c	25Y 62 00	75YR56 00	C			Y	0	0		0		P			Y	
20	0 35	mzcl	10YR54 00	75YR56 00	F				0	0	HR	2						
	35 80	c	25Y 62 00	75YR56 00	C			Y	0	0		0		P			Y	
21	0 20	m cl	10YR53 00	10YR58 62	F				0	0	HR	5						
	20 30	m cl	10YR53 00	10YR58 62	C			Y	0	0	HR	5		M				IMP 30 STONES
22	0 30	mzcl	10YR54 00						0	0	HR	10						IMP 30 STONES
23	0 20	mzcl	10YR54 00						0	0	HR	10						IMP 20 STONES
24	0 20	mzcl	10YR43 00						0	0	HR	10						IMP 20 STONES
25	0 20	m cl	10YR33 00						0	0	HR	10						IMP 20 STONES
26	0 23	h cl	25Y 52 00	75YR46 00	M		00MN00 00	Y	0	0	HR	3						
	23 30	c	25Y 52 00	75YR46 00	M		00MN00 00	Y	0	0	HR	10		P	Y		Y	
	30 50	c	25Y 62 00	75YR58 00	M			Y	0	0	HR	5		P	Y		Y	

				MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
27	0 20	m cl	10YR54 00						0	0	HR	20				IMP 20	STONES	
28	0 20	m cl	10YR54 00						0	0	HR	10				IMP 20	STONES	
29	0 27	h cl	25Y 52 00	75YR46 00	C			Y	0	0	HR	5						
	27 29	h l	25Y 62 00	75YR46 00	C			Y	0	0	HR	5		P		IMP 29	STONES	
30	0 18	m cl	10YR53 00						0	0	HR	10				IMP 18	STONES	
31	0 20	mzcl	10YR54 00						0	0	HR	20				IMP 20	STONES	