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Isle of Thanet Local Plan

Site 5 Chilton Farm,

Ramsgate

ALC Map and Report

December 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

ISLE OF THANET LOCAL PLAN
SITE 5 CHILTON FARM RAMSGATE

1 Summary

1 1 ADAS was commissioned by MAFF s Land Use Planning Unit to provide information on land quality for a number of sites in the Thanet district of Kent The work forms part of MAFF s statutory input to the preparation of the Isle of Thanet Local Plan

1 2 Site 5 comprises 22 5 hectares of land to the north of Chalk Hill to the south of Canterbury Road East and to the east of the A256 in Ramsgate Kent This site was the subject of a previous survey carried out in August 1986 (ADAS Ref 2012/037/86) to assess agricultural land quality This survey was however carried out prior to the revision of MAFF s guidelines and criteria for grading the quality of agricultural land (MAFF 1988) which came into effect on 1 January 1989 Consequently this site has been re evaluated during December 1994 when 25 borings and two soil inspection pits were described in accordance with the revised guidelines 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 the survey the land use was a mixture of cauliflowers and bare soil The small area in the north of the site mapped as urban comprises a house and garden

1 5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below These results supersede the earlier 1986 survey 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

Grade	Area (ha)	% of Site	% of Agricultural Land
2	2 6	11 6	11 6
3a	7 6	33 8	33 9
3b	12 2	54 2	54 5
Urban	0 1	0 4	100 0 (22 4 ha)
Total area of site	22 5	100 0	

1 6 Appendix I 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 7 The previous survey classified the site as a mixture of Subgrade 3a good quality and Grades 2 very good quality and 1 excellent quality At that time profiles were found to comprise silty textured soils mostly silt loams overlying chalk at varying depths Where chalk occurred at relatively shallow to moderate depths within the profile the land was classified as Subgrade 3a or Grade 2 because of respectively moderate or slight soil droughtiness limitations Deeper profiles were assigned to Grade 1

1 8 The recent (December 1994) survey confirmed silty textured soils but of slightly heavier texture typically silty clay loams than found during the previous survey These were found to overlie chalk at various depths However applying the revised ALC criteria which have more refined droughtiness (and wetness) criteria compared with the earlier guidelines the site has been classified as Grade 2 and Subgrades 3a and 3b because of slight to significant soil droughtiness limitations Land classified as Grade 2 comprises deep silty textured soils However because the local climate at this site is particularly dry in a national context the interaction between soil properties and the climatic regime acts to cause a minor soil droughtiness limitation Land assigned to Subgrades 3a and 3b comprises silty clay loams over chalk at varying depth In comparison to land classified as Grade 2 the underlying chalk occurs at shallower depths which means that these profiles have less moisture available for uptake by crop roots Profiles where the chalk occurs at relatively shallow depths has been classified as Subgrade 3b and moderately deep profiles as Subgrade 3a

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 on the next page and these show that there is no overall climatic limitation affecting the site However climatic factors interact with soil factors to influence soil wetness and droughtiness limitations The crop adjusted soil moisture deficits at this locality are very high in a national context due to the warm dry climate which prevails High soil moisture deficits increase the likelihood of soil droughtiness limitations

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

Table 2 Climatic Interpolations

Grid Reference	TR358650	TR362647
Altitude (m)	35	30
Accumulated Temperature (degree days Jan June)	1450	1455
Average Annual Rainfall (mm)	617	620
Field Capacity (days)	125	126
Moisture Deficit Wheat (mm)	125	126
Moisture Deficit Potatoes (mm)	123	124
Overall Climatic Grade	1	1

3 Relief

3 1 The site is relatively flat and lies at an altitude of approximately 30 to 35 m AOD falling gently towards the south-west

4 Geology and Soil

4 1 British Geological Survey (1980) Sheet 274 shows the entire site to be underlain by Upper Chalk with drift deposits of head mapped in the east of the site

4 2 The published Soil Survey map (SSEW 1980) shows the entire site to comprise brown calcareous earths These soils are described as variably chalky and flinty soils in head brickearth associated with shallow chalky soils over chalk free drainage (SSEW 1980)

4 3 Detailed field examination found soils to be consistent with those described in paragraph 4 2 comprising well drained silty clay loams over chalk at varying depths

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 2

5 3 Land classified as very good quality is restricted by minor soil droughtiness limitations This land generally occurs across the area covered by the drift deposits of head brickearth Profiles typically comprise calcareous medium silty clay loam topsoils which overlie similarly textured upper subsoils These pass into silt loam and occasionally heavy clay loam lower subsoils at about 70 to 100 cm depth Profiles are well drained (Wetness Class I) and very slightly stony throughout containing approximately 0 2% total flints and/or chalk fragments by volume Although these soil textures retain relatively high amounts of soil available water

for uptake by crop roots the prevailing local climate is very dry in a national context The interaction between these soil properties and the dry climatic regime (i e high soil moisture deficits) gives rise to land which is slightly droughty Moisture balance figures indicate that there is likely to be a slight restriction in soil water available throughout the growing season Consequently crops may suffer slight drought stress The level and consistency of crop yields may be affected as a result

Subgrade 3a

5 4 Land classified as good quality is restricted by moderate soil droughtiness limitations Calcareous medium silty clay loam topsoils are underlain by well drained (Wetness Class I) similarly textured subsoils which overlie chalk at about 70 to 80 cm depth Profiles are generally very slightly stony throughout containing 0 3% total flints and/or chalk fragments by volume Within some of the profiles the horizon which immediately overlies the chalk is moderately or very stony containing 20 50% total chalk fragments by volume Pit 1 represents profiles typical of this mapping unit From this pit it could be seen that due to the very hard and compact nature of the chalk penetration by crop roots into the chalk was restricted to about 5 cm The interaction between this severely restricted rooting and chalky lower subsoils with the very dry prevailing local climate gives rise to land which is moderately droughty Moisture balance figures indicate that there is a moderate restriction in soil available water throughout the growing season such that crops may suffer from drought stress The level and consistency of crop yields may be moderately affected as a result

Subgrade 3b

5 5 Land classified as moderate quality is restricted by significant soil droughtiness limitations Soil profiles are similar to those described in paragraph 5 4 except that the chalk occurs at shallower depths of approximately 40 to 55 cm depth From Pit 2 which represents such profiles it was found that the underlying chalk was also very hard and compact Severely restricted penetration by crop roots into the chalk was found to be consistent with that observed from Pit 1 However because the chalk occurs at shallower depths then this land is likely to be prone to suffer significant soil droughtiness Moisture balance figures indicate that both shallower and deeper rooting crops are likely to suffer from drought stress The level and consistency of crop yields may be significantly affected as a result

5 6 Within this mapping unit shallower profiles over chalk typically with chalk from 35 cm also occur This gives rise to land which is severely droughty resulting in poorer land quality However this poor quality land does not constitute a large enough area to be mapped separately

SOURCES OF REFERENCE

British Geological Survey (1980) Sheet No 274 Ramsgate 1 50 000 Series (solid and drift edition)

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 (1980) Bulletin No 9 Soils of Kent and accompanying maps at 1 250 000

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

Site Name ISLE OF THANET LP SITE 5 Pit Number 1P

Grid Reference TR36006480 Average Annual Rainfall 621 mm
Accumulated Temperature 1455 degree days
Field Capacity Level 126 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	MZCL	10YR43 00	0		1	HR					Y
35- 76	MZCL	10YR54 00	0		3	CH		MDCSAB	FR	M	Y
76- 81	CH	10YR81 00	0		1	HR				P	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3A APW 120mm MBW -6 mm
APP 125mm MBP 1 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name ISLE OF THANET LP SITE 5 Pit Number 2P

Grid Reference TR35706490 Average Annual Rainfall 621 mm
Accumulated Temperature 1455 degree days
Field Capacity Level 126 days
Land Use Field Vegetables
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR43 00	0	1	HR					Y
30- 43	MZCL	10YR54 00	0	1	CH				M	Y
43- 48	CH	10YR81 00	0	1	HR				P	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL No SPL

Drought Grade 3B APW 83 mm MBW -43 mm
APP 83 mm MBP -41 mm

FINAL ALC GRADE 3B
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	TR35606510	VEG					1	1	86	-40	86	-38	3B				DR	3B	Chalk 45
1P	TR36006480	OTH					1	1	120	-6	125	1	3A				DR	3A	Chalk 76
2	TR35706510	VEG					1	1	71	-55	71	-53	4				DR	4	Chalk 35
2P	TR35706490	VEG					1	1	83	-43	83	-41	3B				DR	3B	Chalk 43
3	TR35806510	VEG					1	1	71	-55	71	-53	4				DR	4	Chalk 35
4	TR35606500	VEG					1	1	121	-5	121	-3	3A				DR	3A	Chalk 80
5	TR35706500	VEG					1	1	81	-45	81	-43	3B				DR	3B	Chalk 40
6	TR35806500	VEG					1	1	78	48	78	-46	3B				DR	3B	Chalk 40
7	TR35906500	VEG					1	1	93	-33	94	-30	3B				DR	3B	Chalk 50
8	TR35606490	VEG	SW	02			1	1	111	-15	119	-5	3A				DR	3A	Chalk 70
9	TR35706490	VEG					1	1	78	-48	78	-46	3B				DR	3B	Chalk 40
10	TR35806490	VEG	S	01			1	1	67	59	67	-57	4				DR	4	Chalk 35
11	TR35906490	OTH	S	01			1	1	64	62	64	-60	4				DR	4	Chalk 33
12	TR36006490	OTH					1	1	82	-44	83	-41	3B				DR	3B	Chalk 50
13	TR35606480	VEG	SW	02			1	1	71	-55	71	-53	4				DR	4	Chalk 35
14	TR35706480	OTH					1	1	96	30	100	-24	3B				DR	3B	Chalk 55
15	TR35806480	OTH					1	1	113	-13	123	-1	3A				DR	3A	Chalk 70
16	TR35906480	OTH					1	1	121	-5	121	-3	3A				DR	3A	Chalk 80
17	TR36006480	OTH					1	1	115	11	125	1	3A				DR	3A	Chalk 70
18	TR36106480	OTH					1	1	113	13	122	-2	3A				DR	3A	Chalk 70
19	TR36206480	OTH					1	1	160	34	124	0	2				DR	2	No chalk
20	TR35906470	OTH					1	1	134	8	125	1	2				DR	2	Chalk 90
21	TR36006470	OTH	S	02			1	1	118	-8	124	0	3A				DR	3A	Chalk 75
22	TR36106470	OTH					1	1	125	-1	125	1	3A				DR	3A	Chalk 80
23	TR36206470	OTH					1	1	115	-11	125	1	3A				DR	3A	Chalk 70
24	TR36306470	OTH					1	1	168	42	124	0	2				DR	2	No chalk
25	TR36206460	OTH					1	1	175	49	124	0	2				DR	2	No chalk

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC
1	0-30	mzcl	10YR33 00						0	0	CH	2						Y
	30-45	mzcl	10YR54 00						0	0	CH	10		M				Y
	45-50	ch	10YR71 00						0	0		0		P				Y
1P	0-35	mzcl	10YR43 00						0	0	HR	1						Y
	35-76	mzcl	10YR54 00						0	0	CH	3	MDCSAB FR	M				Y
	76-81	ch	10YR81 00						0	0	HR	1		P	Y			Y
2	0-35	mzcl	10YR33 00						0	0	CH	2						Y
	35-40	ch	10YR71 00						0	0		0		P				Y
2P	0-30	mzcl	10YR43 00						0	0	HR	1						Y
	30-43	mzcl	10YR54 00						0	0	CH	1		M				Y
	43-48	ch	10YR81 00						0	0	HR	1		P	Y			Y
3	0-35	mzcl	10YR33 00						0	0	CH	3						Y
	35-40	ch	10YR81 00						0	0	HR	1		P				Y
4	0-30	mzcl	10YR33 00						0	0	CH	1						
	30-65	mzcl	10YR44 00						0	0	HR	5		M				Y
	65-80	mzcl	10YR54 00						0	0	CH	20		M				Y
	80-85	ch	10YR71 00						0	0		0		P				Y
5	0-40	mzcl	10YR33 00						0	0	CH	1						Y
	40-45	ch	10YR71 00						0	0		0		P				Y
6	0-30	mzcl	10YR33 00						0	0	CH	1						Y
	30-40	mzcl	10YR44 00						0	0	CH	5		M				Y
	40-45	ch	10YR71 00						0	0		0		P				Y
7	0-30	mzcl	10YR33 00						0	0	CH	1						Y
	30-50	mzcl	10YR44 00						0	0	CH	10		M				Y
	50-55	ch	10YR71 00						0	0		0		P				Y
8	0-30	mzcl	10YR43 00						0	0	HR	1						Y
	30-55	mzcl	10YR54 00						0	0	HR	5		M				Y
	55-70	mzcl	10YR56 00						0	0	CH	30		M				Y
	70-75	ch	10YR81 00						0	0		0		P				Y
9	0-30	mzcl	10YR43 00						0	0	HR	1						Y
	30-37	mzcl	10YR54 00						0	0	CH	1		M				Y
	37 40	mzcl	10YR54 00						0	0	CH	40		M				Y
	40-45	ch	10YR81 54						0	0	HR	1		P				Y
10	0-30	mzcl	10YR43 00						0	0	CH	2						Y
	30 35	mzcl	10YR54 00						0	0	CH	80		P				Y
	35-40	ch	10YR81 00						0	0		0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
11	0-30	mzcl	10YR43 00						0	0	CH	5						Y
	30-33	mzcl	10YR53 00						0	0	CH	80			P			Y
	33-38	ch	10YR81 00						0	0		0			P			Y
12	0-30	mzcl	10YR42 00						0	0	CH	3						Y
	30-50	mcl	10YR74 00						0	0	CH	50			P			Y
	50-55	ch	10YR81 00						0	0		0			P			Y
13	0-35	mzcl	10YR43 00						0	0	CH	2						Y
	35-40	ch	10YR81 00						0	0		0			P			Y
14	0-33	mzcl	10YR43 00						0	0	HR	1						Y
	33-48	mzcl	10YR54 00						0	0	CH	1			M			Y
	48-55	mzcl	10YR54 00						0	0	CH	50			P			Y
	55-60	ch	10YR81 54						0	0	HR	1			P			Y
15	0-25	mzcl	10YR43 00						0	0	HR	1						Y
	25-60	mzcl	10YR54 00						0	0	CH	1			M			Y
	60-70	mzcl	10YR54 64						0	0	CH	8			M			Y
	70-75	ch	10YR81 54						0	0	HR	1			P			Y
16	0-25	mzcl	10YR43 00						0	1	HR	1						Y
	25-45	mzcl	10YR54 00						0	0	CH	1			M			Y
	45-65	mzcl	10YR54 00						0	0	CH	8			M			Y
	65-80	mzcl	10YR64 00						0	0	CH	25			M			Y
	80-85	ch	10YR81 54						0	0		0			P			Y
17	0-35	mzcl	10YR43 00						0	0	HR	1						Y
	35-70	mzcl	10YR54 00						0	0	CH	1			M			Y
	70-75	ch	10YR81 54						0	0	HR	1			P			Y
18	0-35	mzcl	10YR44 00						0	0	CH	1						Y
	35-60	mzcl	10YR54 00						0	0	CH	3			M			Y
	60-70	mzcl	10YR64 00						0	0	CH	50			M			Y
	70-75	ch	10YR81 00						0	0	HR	1			P			Y
19	0-30	mzcl	10YR42 00						0	0	HR	1						Y
	30-45	mzcl	10YR54 00						0	0	CH	2			M			Y
	45-70	hzcl	10YR54 00						0	0		0			M			
	70-120	hcl	10YR56 00						0	0		0			M			
20	0-35	mzcl	10YR43 00						0	0	CH	1						Y
	35-75	mzcl	10YR54 00						0	0	CH	1			M			Y
	75-90	mzcl	10YR64 00						0	0	CH	20			M			Y
	90-95	ch	10YR81 00						0	0	HR	1			P			Y
21	0-30	mzcl	10YR42 00						0	0	HR	1						
	30-55	mzcl	10YR54 00						0	0	HR	1			M			
	55-75	mzcl	10YR74 00						0	0	CH	2			M			Y
	75-80	ch	10YR81 00						0	0		0			P			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
22	0-35	mzcl	10YR42 00						0	0	CH	1						Y
	35-80	mzcl	10YR54 00						0	0	CH	1		M				Y
	80 85	ch	10YR81 00						0	0	HR	1		P				Y
23	0-35	mzcl	10YR42 00						0	0	CH	1						Y
	35-70	mzcl	10YR54 00						0	0	CH	2		M				Y
	70 75	ch	10YR81 00						0	0	HR	1		P				Y
24	0-29	mzcl	10YR43 00						0	0	HR	1						Y
	29 100	mzcl	10YR54 00						0	0		0		M				Y
	100-120	zl	10YR54 00						0	0		0		M				
25	0-30	mzcl	10YR42 00						0	0	HR	1						Y
	30-80	mzcl	10YR54 00						0	0	CH	2		M				Y
	80-120	zl	10YR54 00						0	0	CH	2		M				Y