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Isle of Thanet Local Plan
Site 8 Northdown Hill,
Broadstairs
Agricultural Land Classification
ALC Map and Report
September 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

ISLE OF THANET LOCAL PLAN SITE 8 NORTHDOWN HILL, BROADSTAIRS

1 Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for five 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 8 comprises approximately 25 hectares of land to the west of Northdown Hill and to the south of St Marys Avenue in Broadstairs east Kent. An Agricultural Land Classification (ALC) survey was carried out during September 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 26 borings and two soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture.
- 1.3 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 on the site was a mixture of cereal stubble and cauliflowers. The Urban mapped comprises an electrical sub-station and a rubble tip.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10 000. It is accurate at this scale but any enlargement would be misleading.

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
2	8.1	32.7	33.5
3a	10.8	43.5	44.6
3b	5.3	21.4	<u>21.9</u>
Urban	<u>0.6</u>	<u>2.4</u>	100.0 (24.2 ha)
Total area of site	24.8	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 agricultural land on the site has been classified as Grade 2 and Subgrades 3a and 3b with soil droughtiness and wetness as the main limitations. In the north of the site land has been classified as Grade 2 very good quality. Soil profiles typically comprise *medium silty clay loam topsoils which become heavier with depth and are relatively stoneless*. However these soils show a slight soil droughtiness restriction such that a classification of Grade 2 is appropriate. The majority of the land on the site has been classified as Subgrade 3a good quality land with soil droughtiness as the main limitation. Soils tend to comprise deeper profiles over chalk or with stony subsoils the nature of which means that there is a moderate soil droughtiness limitation. Moderate quality land Subgrade 3b is mapped in the west of the site where the soils are relatively shallow over chalk causing a significant soil droughtiness limitation. In the east of the site the reverse is the case with land restricted to Subgrade 3b due to a drainage imperfection caused by the presence of a slowly permeable clay horizon at shallow depths.

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.

2 4 However climatic factors do influence soil wetness and droughtiness limitations. At this location the field capacity days for the site are relatively low in a national context with correspondingly high moisture deficits. Therefore the likelihood of soil wetness problems will be decreased and the severity of soil droughtiness problems may be increased. This may be attributed to the coastal location which is characterised by low rainfall and high rates of evapotranspiration.

2 5 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 Climatic Interpolation

Grid Reference	TR 378 698
Altitude (m)	45
Accumulated Temperature (degree days Jan June)	1433
Average Annual Rainfall (mm)	600
Field Capacity (days)	119
Moisture Deficit Wheat (mm)	126
Moisture Deficit Potatoes (mm)	125
Overall Climatic Grade	1

3 Relief

3 1 The site is gently sloping lying at an altitude of approximately 35-45m AOD

4 Geology and Soils

4 1 The relevant geological sheet (BGS 1980) shows the majority of the site to be underlain by Upper Chalk with an area of head brickearth (older) in the east of the site

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

4 3 Detailed field examination found the majority of the soils on the site to overlie chalk at various depths Soils become deeper and subsoils heavier towards the north and east of the site where a small area of soils have poorly structured clayey subsoils

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 An area of land towards the north of the site has been classified as Grade 2 very good quality land with soil droughtiness and occasionally wetness as the main limitations Soil profiles tend to be deeper than elsewhere on the site yet proved impenetrable to the auger at depths of between 75-95cm principally as a result of flinty subsoils Profiles typically comprise a medium silty clay loam topsoil overlying a similarly textured or heavy silty clay loam upper subsoil with clay commonly prevailing at depth in the lower subsoil In some cases chalk fragments were also encountered at depth in some of the profiles Soil inspection pit no 2 was dug in this mapping unit to assess the nature of these soils At the location of the pit a very slightly stony (3% total flints) medium silty clay loam topsoil was found to overlie a very slightly stony (2% total flints) heavy silty clay loam upper subsoil extending to a depth of 53cm This in turn rests upon clay lower subsoils which exhibit a colour change at 68cm and extend to 120cm Both of the clay subsoils exhibit signs of a wetness imperfection in the form of gleying and also possess the requisite soil structural conditions to be classified as slowly permeable Such drainage characteristics equate this profile to Wetness Class II with a resultant classification of Grade 2 However wetness is not the overriding limitation across all of this mapping unit Calculations of the amount of profile available water at the pit shows there to be a slight droughtiness restriction in common with many of the profiles within this mapping unit due to a combination of soil textures structures and the local climatic regime This in turn will have an effect upon the level and consistency of crop yields such that a classification of Grade 2 is appropriate

Subgrade 3a

- 5 4 Good quality Subgrade 3a land covers almost 11 hectares of the site. Within this mapping unit soil droughtiness is the main limitation with soils tending to be relatively shallow over chalk. Solid chalk is encountered at depths of between 55-80cm within this mapping unit. Soil profiles typically comprise a very slightly stony (2-5% total flints) medium silty clay loam or medium clay loam topsoil over similarly textured upper subsoil. A layer of chalky drift comprising soil with approximately 50% chalk fragments tends to rest upon the chalk. Soil inspection pit no 1 on the Subgrade 3b land showed that plant rooting was restricted to a depth of 30cm into the solid chalk which will have an effect upon the ability of plants to extract moisture for growth. An assumption has been made regarding plant root penetration into the chalk on the Subgrade 3a land such that a depth of 30cm after solid chalk is encountered has been used as a cut-off point for the purpose of calculating profile available water. This shows that there is a moderate droughtiness restriction which can effect the level and consistency of crop yields resulting in a classification of Subgrade 3a. It should be noted that soils in some parts of this mapping unit are similar to those assigned to Grade 2 yet the dispersed nature of these observations means that mapping as a separate unit is not possible at this scale of survey.

Subgrade 3b

- 5 5 The remainder of the agricultural land on the site has been classified as Subgrade 3b moderate quality land with soil droughtiness and wetness as the main limitations. Where droughtiness is overriding soil profiles typically comprise medium silty clay loams over solid chalk at depths of between 35-40cm. Soil inspection pit no 1 was dug to assess the extent of rooting into the chalk, rooting being observed to a depth of 65cm. This restricted rooting depth in combination with soil textures, structures and the local climatic regime means that there is a significant restriction on profile available water. This is sufficient to limit this land to Subgrade 3b due to droughtiness.
- 5 6 The area of Subgrade 3b land on the eastern edge of the site is restricted by a wetness limitation. Soil profiles typically comprise medium or heavy silty clay loam topsoils, heavy silty clay loam upper subsoils and clay lower subsoils at relatively shallow depths of 30-38cm. The clay subsoils show evidence of impeded drainage in the form of gleying and are similar in composition to the slowly permeable clays observed in soil inspection pit no 1. However, the shallow depth of the clays in this mapping unit means that the soils are assigned to Wetness Class IV due to the more significant drainage impedence which results. This in combination with the topsoil texture and field capacity days for the site gives a resultant classification of Subgrade 3b. Poorly drained wet soils can restrict plant and root development and may be more susceptible to structural damage through trafficking by agricultural machinery or poaching by grazing livestock.

ADAS Ref 2012/214/94
MAFF Ref EL 20/248

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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) Soil Survey Bulletin No 9 Soils of Kent 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 religious buildings cemeteries Also hard-surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be reclaimed using derelict land grants

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture including private parkland public open spaces sports fields allotments and soft surfaced areas on airports Also active mineral workings and refuse tips where restoration conditions to 'soft' after uses may apply

Woodland

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

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (eg polythene tunnels erected for lambing) may be ignored

Open Water

Includes lakes ponds and rivers as map scale permits

Land Not Surveyed

Agricultural land which has not been surveyed

Where the land use includes more than one of the above eg buildings in large grounds and where map scale permits the cover types may be shown separately Otherwise the most extensive cover type will be shown

APPENDIX II

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

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

Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging 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.

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

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents

Soil Abbreviations - explanatory note

D it ib ise Printout - soil pit information

D it ib ise Printout - boring level information

D it ib ise Printout - horizon level information

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 **GLEYS** If the soil horizon is gleyed a **Y** will appear in this column. If slightly gleyed an **S** will appear

- 7 **STONE LITH** Stone Lithology One of the following is used

HR	all hard rocks and stones	SLST	soft oolitic or dolomitic 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 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 THANET LP SITE 8 Pit Number 1P

Grid Reference TR37626950 Average Annual Rainfall 600 mm
 Accumulated Temperature 1433 degree days
 Field Capacity Level 119 days
 Land Use Field Vegetables
 Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MZCL	10YR42 43	0		3	HR					Y
29- 35	MZCL	10YR43 00	0		5	CH				M	Y
35- 65	CH	05Y 82 00	0		0					M	Y

Wetness Grade 1 Wetness Class I
 Gleying cm
 SPL No SPL

Drought Grade 3B APW 89 mm MBW -39 mm
 APP 94 mm MBP 32 mm

FINAL ALC GRADE 3B
 MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name THANET LP SITE 8 Pit Number 2P

Grid Reference TR37806982 Average Annual Rainfall 600 mm
 Accumulated Temperature 1433 degree days
 Field Capacity Level 119 days
 Land Use Field Vegetables
 Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	MZCL	10YR42 00	0	3	HR					
26- 53	HCL	10YR53 00	0	2	HR				M	
53- 68	C	10YR53 00	0	0		C	MDCAB	FR	M	
68-120	C	25Y 53 00	0	0		C	STCAB	FM	P	

Wetness Grade 2 Wetness Class II
 Gleying 053 cm
 SPL 053 cm

Drought Grade 2 APW 137mm MBW 9 mm
 APP 117mm MBP 9 mm

FINAL ALC GRADE 2
 MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS	
			GRDNT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB						DRT
1P	TR37626950	VEG			1	1	89	-39	94	-32	3B			DR	3B	ROOTS TO 65
2	TR37766994	VEG			1	1	110	-18	119	-7	3A			DR	3A	POSS 2
2P	TR37806982	VEG		053 053	2	2	137	9	117	-9	2			WE	2	DR ALSO
3	TR37756987	VEG			1	1	124	4	123	-3	3A			DR	2	190 SEE2P
4	TR37866986	VEG			1	1	156	28	124	-2	2			DR	2	
5	TR37706974	VEG			1	1	146	18	122	-4	2			DR	2	
6	TR37806974	VEG		S45 045	3	3A	125	3	121	-5	3A			WE	3A	
7	TR37906974	VEG		S70	1	1	150	22	124	-2	2			DR	2	
8	TR37706964	VEG			1	1	123	5	118	-8	3A			DR	3A	POSS 2
9	TR37806964	VEG			1	1	130	2	122	-4	3A			DR	3A	POSS 2
10	TR37906964	VEG		038 038	4	3B	133	5	110	16	3A			WE	3B	
11	TR37606955	VEG			1	1	112	-16	110	-16	3A			DR	3A	
12	TR37706955	VEG			1	2	114	-14	114	12	3A			DR	3A	IMPEN 90
13	TR37806955	VEG			1	1	147	19	122	-4	2			DR	2	
14	TR37906955	VEG		050 050	2	3A	138	10	115	-11	3A			DR	3A	WE ALSO
15	TR37506945	VEG	W	03	1	1	87	-41	91	-35	3B			DR	3B	CH 33
16	TR37606945	VEG			1	1	92	-36	98	-28	3B			DR	3B	CH 40
17	TR37706945	VEG			1	2	143	15	119	-7	2			DR	2	WK ALSO
18	TR37806945	STB			1	1	97	-31	102	-24	3B			DR	3B	IMPEN 60
19	TR37906945	STB		030 030	4	3B	109	-19	107	-19	3A			WE	3B	
20	TR37606935	VEG			1	1	116	-12	107	-19	3A			DR	3A	
21	TR37706935	VEG			1	1	128	0	113	-13	3A			DR	3A	
22	TR37806935	VEG			1	2	104	-24	115	-11	3B			DR	3B	PROB 3A
23	TR37906935	VEG			1	2	143	15	115	-11	3A			DR	3A	
24	TR37706925	STB			1	1	138	10	121	-5	2			DR	2	
25	TR37806925	VEG			1	1	145	17	121	-5	2			DR	2	
26	TR37906924	VEG			1	1	140	12	116	-10	2			DR	2	
27	TR38006924	VEG			1	1	118	-10	109	-17	3A			DR	3A	

-----MOTTLES----- PED --STONES----- STRUCT/ SUBS

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES			PED COL	STONES			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1P	0-29	mzc1	10YR42 43					0	0	HR	3						Y
	29-35	mzc1	10YR43 00					0	0	CH	5		M				Y
	35-65	ch	05Y 82 00					0	0		0		M				Y
IMP CHALK																	
2	0-27	mzc1	10YR42 00					0	0	HR	3						Y
	27-55	hzc1	10YR54 00					0	0	HR	3		M				Y
	55-65	c	10YR56 00					0	0	CH	2		M				Y
	65-75	hzc1	10YR64 00					0	0	CH	30		M				Y
IMP FLINTS																	
2P	0-26	mzc1	10YR42 00					0	0	HR	3						
	26-53	hc1	10YR53 00					0	0	HR	2		M				
	53-68	c	10YR53 00	10YR58 00 C				Y	0	0	0	MDCAB	FR	M	Y		Y
	68-120	c	25Y 53 00	10YR58 00 C				Y	0	0	0	STCAB	FM	P	Y		Y
3	0-27	mzc1	10YR42 00					0	0	HR	2						
	27-65	hzc1	10YR54 00					0	0		0		M				
	65-90	c	10YR56 00					0	0		0		M				
IMP FLINTS																	
4	0-30	mzc1	10YR42 00					0	0	HR	2						
	30-40	mzc1	10YR42 54					0	0		0		M				
	40-80	mzc1	10YR54 00					0	0		0		M				
	80-100	hzc1	10YR54 00					0	0		0		M				
	100-120	c	10YR56 00					0	0		0		M				
5	0-30	mzc1	10YR42 00					2	0	HR	2						
	30-52	hzc1	10YR54 00					0	0		0		M				
	52-80	c	10YR56 00					0	0		0		M				
	80-120	c	10YR74 00					0	0	CH	15		M				Y
6	0-25	mzc1	10YR43 00					0	0	HR	2						
	25-45	hzc1	10YR54 00					0	0		0		M				
	45-95	c	10YR56 00	10YR58 00 C				S	0	0	0		M			Y	
IMP FLINTS																	
7	0-30	mzc1	10YR42 00					0	0	HR	2						
	30-60	mzc1	10YR54 00					0	0		0		M				
	60-70	hzc1	10YR54 00					0	0		0		M				
	70-120	c	10YR54 56					S	0	0	0		M				
8	0-27	mzc1	10YR42 00					0	0	HR	2						
	27-55	c	10YR54 00					0	0		0		M				
	55-95	c	10YR74 00					0	0	CH	15		M			Y	
IMP FLINTS																	
9	0-30	mzc1	10YR42 00					0	0	HR	2						
	30-55	hzc1	10YR54 00					0	0		0		M				
	55-90	c	10YR56 00					0	0		0		M				
	90-100	c	10YR56 00					0	0	HR	10		M				
IMP FLINTS																	
10	0-25	mzc1	10YR42 00					0	0	HR	3						
	25-38	hzc1	10YR54 00					0	0		0		M				
	38-60	c	10YR53 00	10YR58 61 C				Y	0	0	0		P				Y
	60-120	c	25Y 62 00	10YR68 00 C				Y	0	0	0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES ---			PED COL	GLEY	-- STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT			2	>6	LITH		TOT	STR	POR	IMP	SPL
11	0-27	mzc1	10YR43 00						0	0	HR	5					
	27-55	mzc1	10YR64 00						0	0	CH	10	M				Y
	55-85	ch	05Y 82 00						0	0		0	M				Y
12	0-29	hc1	10YR42 00						0	0	HR	5					
	29-50	hzc1	10YR44 00						0	0	HR	2	M				
	50-90	c	10YR54 52						0	0	HR	10	M				IMP FLINTS
13	0-27	mzc1	10YR42 00						0	0	HR	2					
	27-60	mzc1	10YR54 00						0	0		0	M				
	60-120	c	10YR56 53						0	0		0	M				
14	0-28	hzc1	10YR42 00						0	0	HR	3					
	28 50	hzc1	10YR53 00						0	0		0	M				
	50-120	c	25Y 53 00	25Y	68	72	C	Y	0	0		0	P			Y	
15	0 33	mzc1	10YR42 00						0	0	HR	3					
	33 63	ch	05Y 82 00						0	0		0	M				Y
16	0-30	mzc1	10YR43 00						0	0	HR	5					
	30-40	mzc1	10YR64 00						0	0	CH	50	M				Y
	40-70	ch	05Y 82 00						0	0		0	M				Y
17	0-30	hzc1	10YR42 00						0	0	HR	5					
	30-40	hzc1	10YR54 00						0	0	HR	2	M				
	40-120	c	10YR56 00						0	0		0	M				
18	0-26	mzc1	10YR42 00						0	0	HR	2					
	26-45	hzc1	25Y 54 00						0	0	CH	3	M				Y
	45-60	mc1	10YR54 00						0	0	HR	10	M				IMP FLINTS
19	0-30	mzc1	10YR42 00						0	0	HR	2					
	30-60	c	25Y 53 00	25Y	68	71	C	Y	0	0		0	P			Y	
	60-90	c	25Y 52 62	25Y	68	71	C	Y	0	0	HR	5	P			Y	
20	0-30	mzc1	10YR42 00						0	0	HR	4					
	30-65	mzc1	10YR64 00						0	0	CH	50	M				Y
	65-95	ch	05Y 82 00						0	0		0	M				Y
21	0-24	mzc1	10YR42 00						0	0	CH	3					Y
	24-35	hzc1	10YR54 00						0	0		0	M				Y
	35-45	mzc1	10YR64 00						0	0	CH	20	M				Y
	45-75	mzc1	10YR64 00						0	0	CH	50	M				Y
	75-105	ch	05Y 82 00						0	0		0	M				Y
22	0-30	hc1	10YR42 00						0	0	CH	3					Y
	30-45	hc1	10YR44 00						0	0		0	M				
	45-70	mc1	10YR54 00						0	0	HR	5	M				IMP FLINTS

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL	- --STONES---			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
23	0-30	mc1	10YR42 00					0	0	HR	2						
	30-50	hc1	10YR44 00					0	0		0			M			
	50-65	hc1	10YR54 00					0	0	HR	10			M			
	65-120	c	10YR56 00					0	0		0			M			
24	0-30	mzc1	10YR42 00					0	0	HR	3						
	30-55	hzc1	10YR44 00					0	0		0			M			
	55-65	hzc1	10YR44 00					0	0	CH	10			M			Y
	65-80	mzc1	10YR64 00					0	0	CH	50			M			Y
	80-110	ch	05Y 82 00					0	0		0			M			Y
25	0-25	mzc1	10YR42 52					1	0	HR	3						
	25-50	hzc1	10YR54 00					0	0		0			M			
	50-120	c	10YR54 00	00MN00	00	F		0	0		0			M			
26	0-22	mc1	10YR42 52					0	0	HR	2						
	22-35	mc1	10YR44 00					0	0		0			M			
	35-70	mc1	10YR54 00					0	0		0			M			
	70-80	mzc1	10YR54 00					0	0	CH	50			M			Y
	80-120	ch	05Y 82 00					0	0		0			M			Y
27	0-30	mc1	10YR42 00					0	0	HR	2						
	30-47	hc1	10YR44 00					0	0		0			M			
	47-65	mzc1	10YR44 00					0	0	CH	50			M			Y
	65-95	ch	05Y 82 00					0	0		0			M			Y