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Hove Borough Local Plan
Site 4: Land at Toads Hole Valley
Agricultural Land Classification
ALC Map and Report
December 1993

**HOVE BOROUGH LOCAL PLAN
SITE 4: LAND AT TOADS HOLE VALLEY, HOVE, EAST SUSSEX
AGRICULTURAL LAND CLASSIFICATION REPORT**

1. Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on four sites in Hove. The work forms part of MAFF's statutory input to the preparation of the Hove Borough Local Plan.
- 1.2 Approximately 43 hectares of land relating to Site 4, at Toads Hole Valley in East Hove, East Sussex was surveyed during November 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 20 soil auger borings and 3 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 long term limitations on its use for agriculture.
- 1.3 The survey work was conducted by members of the Resource Planning Team in the Guildford Statutory Group.
- 1.4 At the time of the survey most of the land appeared to be in set aside which was in the process of being ploughed.
- 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 1:5,000. it is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous information for this site.

Table 1: Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Site</u>	<u>% of Agricultural Area</u>
2	9.0	20.9	28.0
3a	3.0	7.0	9.3
3b	19.3	44.9	59.9
4	0.9	2.1	<u>2.8</u>
			100% (32.2 ha)
Non-Agricultural	10.2	23.7	
Urban	<u>0.6</u>	<u>1.4</u>	
Total area of site	43.0	100	

- 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 majority of agricultural land on the site has been classified as Subgrade 3b, moderate quality land, with soil droughtiness as the principal limitation. Medium silty clay loam and medium clay loam topsoils are directly underlain by chalk, which restricts rooting, giving rise to only moderate reserves of available water for crop growth. Land classified as Subgrade 3a has a deeper soil resource over the chalk and soil droughtiness is therefore less severe. Land classified as Grade 2, very good quality, towards the west of the site is drought limited as a result of moderate flint contents in the lower subsoil. Significant slope limitations towards the east of the site leads to an area being classified as no better than Grade 4. This is surrounded by Subgrade 3b land, also limited by slope, gradients between 7.5 and 13 degrees were recorded using an optical reading clinometer.

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 the overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature, 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 5 km gridpoint database (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 No local climatic factors such as exposure or frost risk affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations.

Table 2: Climatic Interpolations

Grid Reference:	TQ279076	TQ276075	TQ285081
Altitude (m):	55	90	125
Accumulated Temperature (days):	1476	1436	1396
Average Annual Rainfall (mm):	801	812	844
Field Capacity (days):	169	170	175
Moisture Deficit, Wheat (mm):	112	108	101
Moisture Deficit, Potatoes (mm):	106	101	94
Overall Climatic Grade:	1	1	1

3. Relief

- 3.1 Land at this site lies between approximately 55 m AOD and 125 m AOD. The majority of the site is sloping from a high point in the east towards west. This then levels before rising abruptly to the western boundary which is between 65 and 100 m AOD. Within the site, some slopes are of a sufficient gradient to affect land quality.

4. Geology and Soils

- 4.1 The British Geological Survey Sheet 318/333, Brighton and Worthing (1:50,000, 1984) shows the majority of the site to be underlain with Cretaceous Upper and Middle Chalk. Towards the east, Quaternary clay with flints is mapped. This is described as a stiff reddish brown clay or sandy clay containing broken flint nodules. The lowest areas within the site are mapped as Quaternary Head deposits, a glaciofluvial deposit commonly of brown silty loam with variable stone contents.
- 4.2 The Soil Survey of England and Wales, Sheet 6, Soils of South East England (1:250,000, 1983) shows the entire site to be underlain by soils of the Andover I Association, describing them as 'shallow well drained calcareous silty soils over chalk on slopes and crests. Deeper calcareous and non-calcareous fine silty soils in valley bottoms' (SSEW, 1984). Soils of this general nature were found at this site.

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.
- 5.3 Grade 2

Land of very good quality is mapped across lowlying parts of the site and is typically represented by the pit observation 2P (see Appendix III). The principal limitation is soil droughtiness caused by profile stone content. Typically soils consist of a very slightly stony (c. 3% flints by volume) non-calcareous medium silty clay loam topsoil. This overlies a slightly stony (c. 8% flints by volume) non-calcareous moderately structured heavy clay loam upper subsoil, passing to a moderately stony (c. 25% flints by volume) non-calcareous heavy clay loam lower subsoil. This stone content along with the heavy water retentive textures of the subsoil leads to a slight drought limitation and so Grade 2 is appropriate. Land of this quality could be expected to produce high yields of a wide range of agricultural and horticultural crops, but there may be reduced flexibility with the most demanding crops such as winter harvested vegetables and arable root crops.

- 5.4 Subgrade 3a

Land of this quality occupies two discrete units on the site's northern boundary. Soils in the small area to the north of the site are typical of those described at 1P (Appendix III), being a very slightly stony (c. 2% flints by volume) non-calcareous heavy silty clay loam over a stoneless calcareous moderately structured clay. This passes to a very chalky (c. 50% chalk fragments) calcareous heavy silty clay loam lower subsoil before passing to pure chalk at around 57 cm. Roots were observed to penetrate 10 cm into this hard chalk. Soil droughtiness is the principal limitation caused by restricted rooting depth into the chalk which limits available water for crop growth.

The larger area of Subgrade 3a to the west is similarly restricted by soil droughtiness, the soil profile is different however. Typically topsoil was a very slightly to slightly chalky, (c. 2 to 10% chalk fragments) calcareous medium clay loam. This overlies a very slightly stony (c. 5% flints by volume) calcareous heavy clay loam subsoil before passing directly to pure chalk around 45 cm depth. Roots were observed to penetrate the chalk (3P, Appendix III) between 20 and 30 cm, dependent on the depth at which the chalk became hard (see para 5.6). Land of this quality could be expected to produce moderate yields of a wide range of crops including cereals, grass, oilseed rape and sugar beet.

5.5 Subgrade 3b

Land of this quality covers the majority of the site in a single large unit. Land in this area is restricted for one of two reasons. The higher flatter land is limited by soil droughtiness. The remaining sloping area is limited by gradient. The soil profiles in this area are typically those seen in 3P, Appendix III, where a very slightly stony (c. 3% flints by volume) calcareous medium silty clay loam topsoil overlies a very chalky (c. 50% chalk fragments) calcareous medium silty clay loam subsoil, passing to pure chalk in which roots were found to penetrate 20 cm due to the chalk becoming very hard. This restricted rooting depth and shallow soil depth leads to inadequate reserves of available water for crops such that a droughtiness limitation exists (see para 5.6).

The second reason for land to be graded as this quality is slope. Parts of the land mapped as Subgrade 3b had slopes between 7° and 11°, these were measured using an optical reading clinometer. Steep gradients restrict the safe and efficient use of certain types of farm machinery. Land of this quality would be expected to produce moderate yields of a narrow range of crops principally cereals and grass.

5.6 Drought affected land can, dependent upon the severity of the problem, be subject to restrictions on the type of crop that may be grown, because at some point during or throughout the growing season water availability will not match demand in most years. In the case of this site, this is due to restrictions on rooting depths caused by chalk bedrock beneath the soil profile, leading to moderately and significantly restricted available water reserves.

5.7 Grade 4

A small area of severely limited land has been mapped within the site. This area had slopes greater than 11° but less than 18° as measured with an optical reading clinometer. This slope severely restricts the safe and efficient use of many types of farm machinery to an extent whereby Grade 4 is appropriate.

5.8 The areas marked Non-Agricultural within the site consist of scrub.

5.9 The area marked as Urban is a builders yard and storage area to the north east of the site.

ADAS Ref: 4104/239/93
MAFF Ref: EL41/453

Resource Planning Team
Guildford Statutory Group
ADAS Reading

Sources of Reference

- * British Geological Survey (1984) Sheet No. 318/333, Brighton and Worthing, 1:50,000, 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 (1983), Soils of South East England, 1:250,000 map and accompanying legend.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 on the 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.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, 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.

Sub-grade 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 very 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 : 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/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial 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 III

SOIL PIT AND SOIL BORING DESCRIPTIONS

- Contents :
- * Soil Abbreviations : Explanatory Note
 - * Soil Pit Descriptions
 - * Database Printout : Boring Level Information
 - * Database Printout : Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF** : national 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 **HRT** : Horticultural Crops **PGR** : Permanent Pasture **LEY** : Ley Grass **RGR** : Rough Grazing
SCR : Scrub **CFW** : Coniferous Woodland **DCW** : Deciduous Woodland **HTH** : Heathland **BOG** : Bog or Marsh
FLW : Fallow **PLO** : Ploughed **SAS** : Set aside **OTH** : Other

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

4. **GLEYS/SPL** : Depth in cm to gleying or slowly permeable layers.

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

6. **MB (WHEAT/POTS)** : Moisture Balance.

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

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

MREL : Microrelief limitation **FLOOD** : Flood risk **EROSN** : Soil erosion risk **EXP** : Exposure limitation **FROST** : Frost
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** : Soil Erosion Risk **WD** : Combined 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
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 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

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

6. **STONE LITH** : One of the following is used,

HR : all hard rocks and stones MSST : soft, medium or coarse grained sandstone

SI : soft weathered igneous or metamorphic SLST : soft oolitic or dolimitic limestone

FSST : soft, fine grained sandstone ZR : soft, argillaceous, or silty rocks CH : chalk

GH : gravel with non-porous (hard) stones GS : gravel with porous (soft) stones

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

7. **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

8. **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

9. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness.

G : good M : moderate P : poor

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

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

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

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

14. 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 : HOVE LP-TOAD'S HOLE VLLY Pit Number : 1P

Grid Reference: TQ28390800 Average Annual Rainfall : 812 mm
 Accumulated Temperature : 1436 degree days
 Field Capacity Level : 170 days
 Land Use :
 Slope and Aspect : 03 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 15	HZCL	10YR43 00	0	2		
15- 34	C	05YR58 00	0	0		WCSAB
34- 57	HZCL	75YR46 00	0	50		
57- 67	CH	10YR81 00	0	0		

Wetness Grade : 2 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 3A APW : 93 mm MBW : -9 mm
 APP : 99 mm MBP : 5 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HOVE LP-TOAD'S HOLE VLLY Pit Number : 2P

Grid Reference: TQ27850757 Average Annual Rainfall : 812 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 170 days
Land Use :
Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MZCL	10YR44 00	0	3		
30- 75	HCL	10YR46 00	0	8		WKCSAB
75- 87	HCL	10YR46 00	0	25		
87-120	HCL	10YR46 00	0	25		

Wetness Grade : 1 Wetness Class : I
Gleying : cm
SPL : No SPL

Drought Grade : 2 APW : 142mm MBW : 30 mm
APP : 115mm MBP : 9 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HOVE LP-TOAD'S HOLE VLLY Pit Number : 3P

Grid Reference: TQ28050755 Average Annual Rainfall : 812 mm
 Accumulated Temperature : 1436 degree days
 Field Capacity Level : 170 days
 Land Use :
 Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 23	MZCL	10YR44 00	0	3		
23- 37	MZCL	10YR54 81	0	50		
37- 57	CH	10YR64 81	0	0		

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 3B APW : 79 mm MBW : -32 mm
 APP : 81 mm MBP : -25 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRONT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	
1	TQ28400800	SAS			1	2	68	-34	68	-26	3B				DR 3B IMPST 40 1P
1P	TQ28390800	SAS W	03		1	2	93	-9	99	5	3A				DR 3A CHROOTS67 FACE
2P	TQ27850757	SAS E	01		1	1	142	30	115	9	2				DR 2 PIT 87 AUG 120
3P	TQ28050755	SAS W	02		1	1	79	-32	81	-25	3B				DR 3B PIT 77 ROOTS 5
5	TQ28400790	SAS		025 025	4	3B	86	-16	97	3	3A				WE 3B SPL 25
9	TQ28400780	SAS			1	2	51	-51	51	-51	4				DR 4 IMPEN 30
12	TQ27700770	PLO			1	1	119	8	113	7	2				DR 2 IMPCH 90 1P
13	TQ27800770	PLO			1	1	97	-14	100	-6	3A				DR 3A IMPCH 75 1P
14	TQ27900770	PLO			1	1	116	5	113	7	3A				DR 3A IMPST 90 2P
15	TQ28000770	PLO			1	1	94	-17	100	-6	3A				DR 3A IMPCH 70 1P
19	TQ28400770	SAS			1	2	84	-21	90	-8	3B				DR 3B IMPCH 70 1P
21	TQ27700760	SAS			1	1	94	-17	100	-6	3A				DR 3A IMPST 60 2P
22	TQ27800760	SAS			1	2	119	18	117	11	2				DR 2 IMPST 90 2P
23	TQ27900760	SAS			1	2	72	-39	72	-34	3B				DR 3B IMPST 45 2P
24	TQ28000760	SAS			1	1	78	-33	81	-25	3B				DR 3B IMPCH 60 3P
25	TQ28100760	SAS			1	1	99	-12	108	2	3A				DR 3A IMPST 65 2P
29	TQ27800750	SAS E	03		1	1	130	19	122	16	2				DR 2 IMPCH 90 1P
30	TQ27900750	SAS S	02		1	1	77	-34	78	-28	3B				DR 3B IMPCH 37 3P
31	TQ28000750	SAS S	02		1	1	124	13	115	9	2				DR 2 IMPST 100 2P
36	TQ27900740	SAS			1	1	93	-18	100	-6	3A				DR 3A IMPST 65 2P
37	TQ28000740	SAS W	02		1	2	113	2	118	12	3A				DR 3A IMPST 80 2P
41	TQ27900730	SAS			1	2	104	-7	114	18	3A				DR 3A IMPST 65 2P
42	TQ28000730	SAS SW	05		1	2	76	-35	76	30	3B				DR 3B IMPCH 35 3P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----				STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		STR	POR	IMP	SPL	CALC
1	0-20	hzc1	10YR53 00						0	0	HR	5						
	20-40	c	10YR53 00						0	0	HR	2			M			
1P	0-15	hzc1	10YR43 00						0	0	HR	2						
	15-34	c	05YR58 00				75YR56 00		0	0		0	WCSAB	FM	M	Y		
	34-57	hzc1	75YR46 00						0	0	CH	50			M			
	57-67	ch	10YR81 00						0	0		0			M			
2P	0-30	mzc1	10YR44 00						0	0	HR	3						
	30-75	hc1	10YR46 00						0	0	HR	8	WKCSAB	VF	M			
	75-87	hc1	10YR46 00						0	0	HR	25			M			
	87-120	hc1	10YR46 00						0	0	HR	25			M			
3P	0-23	mzc1	10YR44 00						0	0	HR	3						Y
	23-37	mzc1	10YR54 81						0	0	CH	50			M			Y
	37-57	ch	10YR64 81						0	0		0			P			
5	0-25	hc1	10YR43 00						0	0	HR	5						
	25-70	c	75YR52 00	10YR58 00 M			00MN00 00 Y		0	0	HR	8			P	Y		Y
9	0-30	hc1	10YR44 00						0	0	HR	5						
12	0-35	mc1	10YR53 00						0	0	HR	5						
	35-60	hc1	10YR54 00						0	0	HR	2			M			
	60-80	hc1	10YR56 00						0	0	CH	30			M			
	80-90	ch	10YR71 00						0	0		0			M			
13	0-25	mc1	10YR43 00						0	0	HR	2						
	25-45	hc1	10YR54 00						0	0	HR	5			M			
	45-75	ch	10YR71 00						0	0		0			M			
14	0-30	mc1	10YR44 00						0	0	HR	5						
	30-65	hc1	10YR53 00						0	0	HR	5			M			
	65-90	c	10YR56 00						0	0	HR	2			M			
15	0-35	mc1	10YR44 00						0	0	CH	10						
	35-45	hc1	10YR54 00						0	0	HR	5			M			
	45-70	ch	10YR71 00						0	0		0			M			
19	0-25	hc1	10YR44 00						0	0		0						
	25-70	ch	10YR71 00						0	0		0			M			
21	0-25	mzc1	10YR44 00						0	0	HR	3						
	25-60	hc1	10YR44 00						0	0	HR	5			M			
22	0-35	hzc1	10YR54 00						0	0	HR	5						
	35-60	hc1	10YR46 00						0	0	HR	5			M			
	60-90	c	10YR44 00						0	0	HR	2			M			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----				STRUCT/	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
23	0-25	hc1	10YR43 00					0	0	HR	5						
	25-45	hc1	10YR44 00					0	0	HR	8			M			
24	0-25	mzc1	10YR54 00					0	0	CH	8						
	25-60	ch	10YR71 00					0	0		0			M			
25	0-30	mzc1	10YR44 00					0	0	HR	5						
	30-65	hc1	10YR54 00					0	0	HR	5			M			
29	0-30	mzc1	10YR44 54					0	0	HR	2						
	30-50	hzc1	10YR56 00					0	0	CH	5			M			Y
	50-80	hzc1	10YR56 00					0	0	CH	10			M			Y
	80-85	mzc1	10YR66 81					0	0	CH	30			M			Y
	85-100	mzc1	10YR66 81					0	0	CH	60			M			Y
100-92	ch	00CH00 00					0	0		0			P			Y	
30	0-30	mc1	10YR44 00					0	0	CH	10						Y
	30-35	mzc1	10YR54 81					0	0	CH	50			M			Y
	35-55	ch	00CH00 00					0	0		0			P			Y
31	0-28	mc1	10YR44 54					0	0	HR	3						
	28-50	hc1	10YR54 00					0	0	CH	3			M			
	50-80	c	10YR54 00					0	0	CH	5			M			
	80-100	c	10YR43 44					0	0	CH	5			M			
36	0-20	mzc1	10YR43 00					1	0	CH	3						
	20-55	mc1	10YR44 00	10YR56 00	C			0	0	CH	35			M			
	55-65	hc1	10YR44 00	10YR58 00	C			0	0	CH	30			M			
37	0-25	hzc1	10YR43 00					0	0	CH	2						
	25-65	hc1	10YR44 00					0	0	CH	3			M			
	65-80	c	10YR44 00					0	0	CH	5			M			
41	0-30	hzc1	25Y 43 00					1	0	CH	4						
	30-60	hzc1	10YR44 00	10YR56 00	F			0	0	CH	5			M			
	60-65	hzc1	10YR44 56					0	0	CH	8			M			
42	0-27	hzc1	10YR43 00					2	0	CH	8						
	27-32	hzc1	10YR43 00					0	0	CH	50			M			
	32-52	ch	10YR71 00					0	0		0			M			