0202-033-94

[redacted]

MAFF Ministry of Agriculture Fisheries and Food

A1
NEWBURY LOCAL PLAN
SITE 43 : LAND SOUTH OF
HUNGERFORD
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
JANUARY 1994

NEWBURY LOCAL PLAN
SITE 43 : LAND SOUTH OF HUNGERFORD
AGRICULTURAL LAND CLASSIFICATION REPORT

1.0 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 Newbury District of Berkshire. The work forms part of MAFF's statutory input to the preparation of the Newbury Local Plan.

1.2 Approximately 27 hectares of land relating to site 43, Land South of Hungerford was surveyed in January 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 27 soil auger 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 longterm limitations on its use for agriculture.

1.3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.

1.4 At the time of the survey the landuse on the site was field beans.

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 survey information for this site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
1	3.1	11.7	11.8
2	22.2	83.4	84.7
3b	0.9	3.4	3.5
Non agricultural	0.4	1.5	100% (26.2ha)
Total area of site	26.6	100%	

1.6 Appendix 1 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 Land on the site is classified as grades 1, 2, and 3b. The majority of the land is classified as grade 2 with soil workability and/or droughtiness as the main limitations. Soils comprise medium or heavy clay loam topsoils over clayey subsoils, often passing to chalk in the lower subsoil. The occurence of shallow rooting into the chalk reduces available water for plant growth and soils are limited by slight droughtiness. Additionally the heavy nature of the topsoil where present means that soils are slower to return to a workable condition after wetting, thereby reducing the flexibility of land for cultivation. Land classified as grade 1 comprises similar soils to those of grade 2 land, but with a medium clay loam topsoil and chalk deeper or absent in the profile. Consequently soils suffer neither a wetness/workability or droughtiness limitation. Finally subgrade 3b land is limited by soil wetness. The presence of poorly structured slowly permeable clay below the topsoil significantly restricts the movement of water through the profile.

2.0 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 annual average 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 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 No local climatic factors such as exposure or frost risk affect the site. It should be noted that climatic characteristics such as the relatively low moisture deficits can interact with soil properties to reduce the likelihood of soil droughtiness problems. Also the relatively high rainfall and field capacity days can increase the likelihood of soil wetness problems especially on clayey soils.

Table 2 : Climatic Interpolation

Grid Reference :	SU 337 672
Altitude (m) :	125
Accumulated Temperature (days) :	1392
Average Annual Rainfall (mm) :	784
Field Capacity (days) :	175
Moisture Deficit, Wheat (mm) :	98
Moisture Deficit, Potatoes (mm) :	87
Overall Climatic Grade :	1

3.0 Relief

3.1 The site lies at an altitude of approximately 125-130 metres with land falling very gently to the south. Nowhere on the site does relief or gradient affect agricultural land quality.

4.0 Geology and Soil

4.1 The published geological sheet for the site, Sheet 267 (BGS, 1971) shows the majority of the site to be mapped as Clay with Flints with Upper Chalk encroaching on the southern and western boundaries.

4.2 The published soils information for the area, Sheet 6 (SSEW, 1983) shows the entire site to comprise soils of the Frilsham association -"Well drained mainly fine loamy soils over chalk, some calcareous. Shallow calcareous fine loamy and fine silty soils in places". (SSEW, 1983). A detailed inspection of soils on the site revealed the presence of soils similar to those described above, mostly over chalk in the lower subsoil. A small area of clayey slowly permeable soils was encountered to the north.

5.0 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 1

5.3 Agricultural land of excellent quality is mapped to the south of the site and soil profiles typically comprise topsoils of non calcareous medium clay loam containing 2% total small flints. Upper subsoils consist of calcareous or non calcareous heavy clay loam with 0-15% total flints and chalk stones. This passes to chalk at a depth of 70-100 cm, though occasionally the heavy clay loam continues to depth. Soil Pit 1 dug into the chalk revealed an effective rooting depth of 35 cm. Soils are well drained showing no signs of wetness problems and are assigned to wetness class I. This in combination with a medium, easily workable, topsoil texture and climatic factors such as field capacity days results in a wetness grade of 1. There is no droughtiness limitation either as the soil properties in combination with climatic characteristics and the depth of rooting in the Chalk results in adequate available water reserves in the profile for crop growth. Consequently land of this quality can be expected to produce consistently high yields of a wide range of crops.

Grade 2

5.4 Very good quality agricultural land is mapped over the majority of the site. Typical soil profiles comprise topsoils of non calcareous heavy clay loam, occasionally medium clay loam containing 0-5% total flints. Upper subsoils consist of calcareous and non calcareous clay, occasionally heavy clay loam with 0-15% total flints and chalk stones. This passes to similar textures in the lower subsoil but with 10-65% weathered chalk which either continues to depth or passes to pure chalk in a number of profiles at a depth of 50-100 cm. Soil Pit 1 dug in this map unit found an effective rooting depth of 35 cm into the chalk. Profiles show little or no signs of wetness problems and are assigned to wetness class I. This in combination with climatic factors and heavy clay loam topsoils which predominate across the site results in a slight workability limitation and land is limited to grade 2. The heavy topsoil retains water for longer after wetting than lighter soils and reduces the flexibility of timing with which the land can be cultivated. Additionally, many profiles are also limited to this grade due to a slight droughtiness limitation either in combination with soil workability or as the main limitation in the case of profiles with medium clay loam topsoils. The presence of chalk closer to the surface than that of grade 1 land reduces available water in the profile and the land is classified as grade 2.
Included in this map unit are a small number of profiles of better and poorer quality which were not mapped separately due to their limited number and distribution.

Subgrade 3b

5.5 Land classified as subgrade 3b accounts for a small area of land to the north of the site. Soils typically consist of heavy clay loam topsoils with 2% total flints over subsoils of slowly permeable clay from 25-29 cm depth. Soil Pit 2 dug in this map unit found a slowly permeable layer of clay from 25 cm with signs of wetness in the form of common ochreous mottles and manganese concretions. Due to the presence of slowly permeable layers between 25-29 cm depth soils are assigned to wetness class III and this in combination with a heavy topsoil texture and climatic factors limits land to subgrade 3b due to a significant wetness limitation. The grade reflects the resultant difficulties in cultivating such land.

5.6 The area of Non-agricultural consists of land overgrown with trees and bushes

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.

Sub-grade 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 II

REFERENCES

* BRITISH GEOLOGICAL SURVEY (1971), Sheet No.267, Hungerford, 1:63,360 scale.

* 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 No.6, "Soils of South England", 1:250,000 scale and accompanying legend.

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

APPENDIX IV

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 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. **GLEY/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 appropiate 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 : NEWBURY LP SITE 43 Pit Number : 1P

Grid Reference: SU33706740 Average Annual Rainfall : 784 mm
Accumulated Temperature : 1392 degree days
Field Capacity Level : 175 days
Land Use :
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 24	HCL	10YR43 00	0	2		
24- 50	C	10YR46 00	0	0		MDCSAB
50- 85	CH	00CH00 00	0	1		

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

Drought Grade : 2 APW : 108mm MBW : 10 mm
APP : 104mm MBP : 17 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Workability

SOIL PIT DESCRIPTION

Site Name : NEWBURY LP SITE 43 Pit Number : 2P

Grid Reference: SU33506750 Average Annual Rainfall : 784 mm
Accumulated Temperature : 1392 degree days
Field Capacity Level : 175 days
Land Use :
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	HCL	10YR43 00	0	2		
25- 45	C	10YR44 00	0	0	C	MDCAB
45- 60	C	10YR44 00	0	1	M	MDCAB

Wetness Grade : 3B Wetness Class : III
Gleying :045 cm
SPL :025 cm

Drought Grade : APW : mm MBW : 0 mm
APP : mm MBP : 0 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

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	SU33306750	BEN				1	1	128	30	107	20	1					1	
1P	SU33706740	BEN				1	2	108	10	104	17	2				WK	2	ROOTS 35
2	SU33406750	BEN				1	2	116	18	109	22	2				WK	2	
2P	SU33506750	BEN	045	025		3	3B		0		0					WE	3B	SL GLEY 25
3	SU33506750	BEN		029		3	3B	145	47	116	29					WE	3B	SL GLEY 29
4	SU33606750	BEN		045		3	3B		0		0					WE	3B	AS 2P
5	SU33706750	BEN				1	1	92	-6	100	13	3A				DR	3A	IMP60Q2
6	SU33306740	BEN				1	2	119	21	110	23	2				WK	2	
7	SU33406740	BEN		028		3	3B		0		0	2				WE	3B	AS 2P
8	SU33506740	BEN				1	2	115	17	103	16	2				WK	2	
9	SU33606740	BEN				1	2	148	50	117	30	1				WK	2	
10	SU33706740	BEN				1	2	116	18	107	20	2				WK	2	
11	SU33306730	BEN				1	1	118	20	107	20	2				DR	2	IMPEN100
12	SU33406730	BEN				1	2	81	-17	86	-1	3A				DR	3A	
13	SU33506730	BEN				1	2	137	39	115	28	1				WK	2	
14	SU33606730	BEN				1	2	131	33	109	22	1				WK	2	
15	SU33706730	BEN				1	2	106	8	98	11	2				WK	2	
16	SU33806730	BEN				1	2	117	19	109	22	2				WK	2	
17	SU33306720	BEN				1	2	132	34	110	23	1				WK	2	
18	SU33406720	BEN				1	1	129	31	115	28	1					1	
19	SU33506720	BEN				1	1	142	44	113	26	1					1	
20	SU33606720	BEN				1	1	145	47	114	27	1					1	
21	SU33706720	BEN				1	2	114	16	107	20	2				WK	2	
22	SU33806720	BEN				1	2	97	-1	99	12	3A				DR	3A	
23	SU33406710	BEN				1	2	111	13	104	17	2				WK	2	
24	SU33506710	BEN				1	1	137	39	109	22	1					1	
25	SU33606710	BEN				1	1	105	7	117	30	2				DR	2	IMPEN 70
26	SU33706710	BEN				1	2	128	30	114	27	1				WK	2	
27	SU33806710	BEN				1	2	134	36	116	29	1				WK	2	

AMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-25	mcl	10YR42 00						0	0	HR	2							
	25-34	c	10YR44 00						0	0		0		M					
	34-45	c	10YR66 00						0	0	CH	15		M			Y		
	45-60	hcl	10YR66 00						0	0	CH	50		M			Y		
	60-76	hcl	10YR66 00						0	0	CH	60		M			Y		
	76-111	ch	00CH00 00						0	0	HR	1		P			Y		
1P	0-24	hcl	10YR43 00						0	0	HR	2							
	24-50	c	10YR46 00						0	0		0	MDCSAB FM	M					
	50-85	ch	00CH00 00						0	0	HR	1		P			Y		
2	0-25	hcl	10YR42 00						0	0	HR	2							
	25-40	c	10YR44 00						0	0		0		M					
	40-60	c	10YR44 00						0	0	CH	10		M			Y		
	60-95	ch	00CH00 00						0	0	HR	1		P			Y		
2P	0-25	hcl	10YR43 00						0	0	HR	2							
	25-45	c	10YR44 00	75YR56 00	C		00MN00 00		0	0		0	MDCAB FM	M		Y		SLI GLEYED	
	45-60	c	10YR44 00	75YR58 00	M		10YR53 00	Y	0	0	HR	1	MDCAB FM	P	Y	Y		GLEYED	
3	0-29	hcl	10YR42 00						0	0	HR	2							
	29-76	c	10YR44 00	75YR56 00	C		00MN00 00		0	0	HR	2		M		Y		SPL AS 2P	
	76-120	hcl	10YR66 00	75YR58 00	M				0	0	CH	30		M			Y		
4	0-25	hcl	10YR42 00						0	0	HR	2							
	25-45	c	10YR44 00						0	0	HR	5		M					
	45-120	c	10YR44 00	75YR56 00	C		00MN00 00		0	0		0		P		Y		SPL AS 2P	
5	0-25	mcl	10YR43 00						0	0	HR	2							
	25-60	c	10YR56 00						0	0	HR	1		M					
6	0-28	hcl	10YR42 00						0	0	HR	2							
	28-35	c	10YR43 00						0	0		0		M					
	35-65	c	10YR44 00						0	0	CH	20		M			Y		
	65-100	ch	00CH00 00						0	0		0		P			Y		
7	0-26	hcl	10YR42 00						0	0	HR	2							
	26-70	c	25Y 53 00	10YR56 00	F		00MN00 00		0	0		0		P		Y		SPL AS 2P	
	70-105	ch	00CH00 00					Y	0	0	HR	1		P			Y		
8	0-28	hcl	10YR42 00						0	0	HR	2							
	28-35	c	10YR43 00						0	0		0		M					
	35-65	c	10YR44 00						0	0	CH	60		M			Y		
	65-100	ch	00CH00 00						0	0	HR	1		P			Y		
9	0-28	hcl	10YR42 00						0	0	HR	2							
	28-70	c	10YR44 00						0	0		0		M					
	70-80	sc	25Y 53 00						0	0		0		M					
	80-120	sc	25Y 53 00						0	0	CH	20		M			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
10	0-28	hcl	10YR43 00						0	0	HR	2						
	28-48	c	10YR44 00						0	0		0		M				
	48-60	c	10YR66 00						0	0	CH	50		M				Y
	60-95	ch	00CH00 00						0	0	HR	1		P				Y
11	0-25	mcl	10YR42 00						0	0	HR	2						
	25-65	hcl	10YR64 00						0	0	HR	10		M				
	65-100	ch	10YR71 00						0	0		0		P				Y
12	0-25	hcl	10YR42 00						0	0	HR	5						
	25-30	c	10YR54 00						0	0		0		M				
	30-65	ch	10YR71 00						0	0		0		P				Y
13	0-25	hcl	10YR42 00						0	0	HR	2						
	25-60	c	10YR54 00						0	0	HR	2		M				
	60-100	c	10YR64 00						0	0	CH	10		M				Y
	100-120	ch	10YR71 00						0	0		0		P				Y
14	0-30	hcl	10YR42 00						0	0	HR	5						
	30-95	c	10YR54 00						0	0	HR	10		M				
	95-120	ch	10YR71 00						0	0		0		P				Y
15	0-30	hcl	10YR53 00						0	0	HR	2						
	30-55	hcl	10YR53 71						0	0	CH	65		M				Y
	55-90	ch	10YR71 00						0	0		0		P				Y
16	0-25	hcl	10YR43 00						0	0	HR	5						
	25-65	c	10YR54 00						0	0	HR	5		M				
	65-100	ch	10YR71 00						0	0		0		P				Y
17	0-25	mcl	10YR42 00						0	0		0						
	25-30	hcl	10YR54 00						0	0		0		M				
	30-45	hcl	10YR54 71						0	0	CH	65		M				Y
	45-80	mcl	10YR64 00						0	0	CH	10		M				Y
	80-115	ch	10YR71 00						0	0		0		P				Y
18	0-30	mcl	10YR42 00						0	0	HR	2						
	30-45	hcl	10YR54 00						0	0		0		M				
	45-70	hcl	10YR64 00						0	0	CH	10		M				Y
	70-105	ch	10YR71 00						0	0		0		P				Y
19	0-25	mcl	10YR42 00						0	0	HR	2						
	25-45	hcl	10YR54 00						0	0	HR	5		M				
	45-90	hcl	10YR64 00						0	0	CH	10		M				Y
	90-120	ch	10YR71 00						0	0		0		P				Y
20	0-30	mcl	10YR42 00						0	0	HR	2						
	30-55	hcl	10YR54 00						0	0	HR	5		M				
	55-100	hcl	10YR74 00						0	0	CH	15		M				Y
	100-120	ch	10YR71 00						0	0		0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
21	0-25	hcl	10YR43 00						0	0	HR	2						
	25-55	hcl	10YR64 00						0	0		0		M				
	55-90	ch	10YR71 00						0	0		0		P				Y
22	0-25	hcl	10YR43 00						0	0		0						
	25-40	hcl	10YR54 00						0	0		0		M				
	40-75	ch	10YR71 00						0	0		0		P				Y
23	0-25	hcl	10YR43 00						0	0	HR	2						
	25-35	c	10YR44 00						0	0		0		M				
	35-55	hcl	10YR66 00						0	0	CH	25		M				Y
	55-90	ch	00CH00 00						0	0	HR	1		P				Y
24	0-25	mcl	10YR42 00						0	0	HR	2						
	25-75	hcl	10YR54 00						0	0	HR	10		M				
	75-110	hcl	10YR64 00						0	0	CH	10		M				Y
25	0-25	mcl	10YR42 00						0	0		0						
	25-70	hcl	10YR54 00						0	0		0		M				
26	0-25	hcl	10YR43 00						0	0	HR	2						
	25-40	hcl	10YR54 00						0	0		0		M				
	40-75	c	10YR73 00						0	0	CH	10		M				Y
	75-110	ch	10YR71 00						0	0		0		P				Y
27	0-25	hcl	10YR42 00						0	0	HR	2						
	25-60	hcl	10YR44 00						0	0		0		M				
	60-110	c	10YR54 58	00MN00	00	F			0	0		0		M				