4201 - 124 - 92
125

A1

ADUR DISTRICT LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT

APRIL 1993

MAFF Reference : EL 9129

ADAS Reference : 4201/124/92

ADUR DISTRICT LOCAL PLAN
AGRICULTURAL LAND CLASSIFICATION

1. In December, 1992, detailed Agricultural Land Classification (ALC) surveys were conducted at Lancing and Sompting in West Sussex. ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by proposals for development in the Adur District Local Plan.

A total of 332 hectares was surveyed using MAFF's revised guidelines and criteria for classifying the quality of agricultural land. These guidelines allow land to be graded according to the extent to which its physical or chemical characteristics impose long term limitations on its use for agriculture.

The details of the findings are given in the attached appendices, and the distribution of the grades and sub-grades is shown on the attached ALC maps. These have been drawn at a scale of 1:10,000 and are accurate at this level but any enlargement may be misleading. The fieldwork was conducted at a detailed level, with approximately one soil observation per hectare - a combination of auger boring and soil pit descriptions.

The detailed measurements of each grade are presented in the tables below and the following report describes the Lancing and Sompting areas separately.

TABLE 1: Lancing, Distribution of Grades and Sub-grades

Grade	Area (ha)	% of Agricultural Area
2	22.3	16.8
3A	15.3	11.5
3B	95.1	71.7
Non Agric	5.5	100% (132.7 ha)
Urban	0.3	
TOTAL	138.5 ha	

TABLE 2: Sompting, Distribution of Grades and Sub-grades

Grade	Area (ha)	% of Agricultural Area
2	101.5	67.5
3A	16.3	10.8
3B	32.1	21.4
4	0.5	0.4
Non Agric	32.7	
Urban	10.4	100% (150.4 ha)
TOTAL	193.5 ha	

2. Land at Lancing

2.1 Three distinct blocks of agricultural land were surveyed on the eastern edge of Lancing, totalling 138.5 hectares: an area north of the A27 (T) developed on higher slopes overlying Chalk and Quaternary

Head deposits; a central area of low lying land bounded by the A27 (T) and the coastal railway with soils developed over Alluvium deposits in the east and Quaternary Head and Raised Beach Deposits in the west; a flat, low lying area to the south between the railway and the coast with soils largely developed over Alluvium deposits.

2.2 Land to the north of the A27 (T) is a mixture of Sub-grades 3A and 3B. Pits numbers 2, 3 and 4 were located in this area and illustrate the range of soils that occur in this section. Soil droughtiness is the single most limiting factor on these soils that have developed over Chalk. The northern fringe of Sub-grade 3B identifies shallow soils which rest on Chalk from within 30 cm depth. Even with roots penetrating 45 cm into the Chalk, the low amount of available water for plants restricts these profiles to no better than Sub-grade 3B. The deeper Sub-grade 3A soils exhibit Heavy Clay Loam topsoil textures overlying Clay subsoils, with Chalk occasionally present from 65 cm depth or with subsoils with high chalk stone percentages. Roots again penetrate the Chalk layers but there is a significant limitation on the degree of available water.

2.3 Land between the A27 (T) and the railway falls into two distinct ALC grades.

To the east of Marsh Barn Lane the alluvial soils are classified as Sub-Grade 3B. To the west of the Lane, the soils are classified as Grade 2.

Pit 1 is typical of the Sub-grade 3B soils. Soil wetness is the important limiting factor. Clay topsoils overlie clay subsoils which exhibit clear evidence of shallow gleying caused by waterlogging related to slowly permeable structures in the upper subsoil. These soils are therefore placed in Wetness Class IV (i.e. the 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) and suffer from a significant restriction on the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

The Grade 2 soils in the western end are typically Medium Clay Loam topsoils overlying Heavy Clay Loam upper subsoils and Clay lower subsoils. The profiles are stone free, show no evidence of significant wetness and the subsoils exhibit moderate structural conditions. Soil droughtiness is the most significant physical limitation with the profiles having insufficient available water to qualify for a higher grade.

2.4 The southern block of land is mostly Sub-grade 3B, with a limited area of Sub-grade 3A on the north-eastern fringe. The soils are similar to the poor alluvial soils described by Pit 1 north of the railway, with a significant soil wetness limitation.

A limited area of better quality Sub-grade 3A land defines variable profiles with lighter textures, better structures and a less significant wetness limitation. These profiles experience a soil droughtiness limitation.

Table 3: Climatic Interpolations, Lancing

Grid Reference	TQ 190060	TQ 193043
Altitude	35	4
Accumulated Temperature (° days)	1502	1537
Average Annual Rainfall (mm)	793	758
Field Capacity (days)	166	161
Moisture deficit, Wheat (mm)	115	121
Moisture deficit, Potatoes (mm)	111	119
Climatic Grade	1	1

3. Land at Sompting

3.1 The ALC survey at Sompting covers 193.5 hectares and includes the lower lying flat land in the Sompting gap between the urban areas of Sompting and Worthing and includes a significant block of land north of the A27 (T) around Sompting Abbotts.

The majority of the soils are developed over Head Deposits with a band of Chalk along the higher ground on the northern fringe and with a band of Raised Beach deposits and Alluvium along the southern fringe.

3.2 Land in the extreme north of the site is classified as Sub-grade 3B, with gradients locally in the range 7-11°. On the southern slopes adjacent to this area of Sub-grade 3B there is a fringe of Sub-grade 3A soils where soil droughtiness becomes the most limiting factor. Chalk is encountered at depths below approximately 60 cm, but the stony nature of the subsoil combines to significantly restrict the amount of available water for plants. Pit 1 is typical of these soils.

Soils with stony subsoils also occur in the south-western edge of the northern block. These soils though of heavier textures again experience a significant droughtiness limitation which restricts them to Sub-grade 3A (see Pit 2).

3.3 The remainder of the northern block and the bulk of the southern section form a large map unit of Grade 2 land. Pits 3 and 5 are typical of the variation that exists in this map unit. Soil droughtiness is generally the key limitation, for soils that have Medium Clay Loam topsoils overlying stone-free and freely draining Heavy Clay Loam upper and lower subsoils. These profiles fail to have enough available water in the profile for shallower rooting crops such as potatoes.

In the western edge of this map unit soil wetness becomes the most limiting factor. Soils here are generally heavier, with a sequence of Medium Clay Loam, Heavy Clay Loam, and Clay in the profile, the clay occurring from approximately 50 cm depth. There is clear evidence of gleying within the top 40 cm and, when augering the subsoils appear slowly permeable. The soil pit (Pit 5), however, reveals that the subsoils are not poor in structure, allowing these profiles to be placed in Wetness Class II (i.e. the soils is wet within 70 cm for more than 90 days, but not wet within 40 cm for more than 30 days in most years) and Grade 2. The soil pit is actually

classified as Sub-grade 3A due to a droughtiness limitation related to slightly stony lower subsoils. In general, the subsoils are not as stony and qualify for Grade 2 even on droughtiness.

3.4 A limited area of Sub-grade 3A occurs over Beach Deposits, which have given rise to soils with very stony subsoils (35-45% stone content) which experience a significant restriction on the amount of water available in the profile and, hence, a droughtiness limitation.

3.5 The southern fringe is classified as Sub-grade 3B. This lower lying area has a significant wetness limitation. The soils are developed over Alluvium, are typically Heavy Clay Loam topsoils with Clay subsoils which are slowly permeable. This area is placed in Wetness Class IV (i.e. 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) and this degree of wetness severely restricts the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

3.6 The non-agricultural areas outlined on the map include farm tracks, areas overgrown by bramble and scrub, allotment gardens, school playing fields, reed beds and sizeable field ditches.

Table 4: Climatic Interpolations, Sompting

Grid Reference	TQ165 040	TQ160 055	TQ160 054	TQ157 059
Altitude (m)	5	30	20	70
Accumulated Temperature (° days)	1537	1508	1520	1463
Average Annual Rainfall (mm)	773	805	801	824
Field Capacity (days)	164	169	168	171
Moisture Deficit, Wheat (mm)	120	115	117	110
Moisture Deficit, Potatoes (mm)	113	111	113	104
Overall Climatic Grade	1	1	1	1

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 sclae 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

* 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.

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

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil profile and pit information obtained during ALC surveys is held on a database. This has commonly used notations and abbreviations as set out below.

BORING HEADERS

1. GRID REF : National grid square followed by 8 figure grid reference.

2. USE : Land-use at the time of survey.
The following abbreviations are used.

ARA - arable	PAS/PGR - permanent pasture
WHT - wheat	RGR - rough grazing
BAR - barley	LEY - ley grassland
CER - cereals	CFW - coniferous woodland
OAT - Oats	DCW - deciduous woodland
MZE - maize	SCR - scrub
OSR - Oilseed rape	HTH - heathland
BEN - field beans	BOG - bog or marsh
BRA - brassicae	FLW - fallow
POT - potatoes	PLO - ploughed
SBT - sugarbeet	SAS - set-aside
FCD - fodder crops	OTH - other
FRT - soft and top fruit	LIN - linseed
HOR/HRT - horticultural crops	

3. GRDNT : Gradient as measured by optical reading clinometer.

4. GLEY/SPL : Depth in centimetres (cm) to gleyed and/or slowly permeable horizons.

5. AP (WHEAT/POTS) : Crop-adjusted available water capacity. The amount of soil water (in millimetres) held in the soil profile that is available to a growing crop (wheat and potatoes are used as reference crops).

6. MB (WHEAT/POTS) : The moisture balance for wheat and potatoes obtained by subtracting the soil moisture deficit from the crop-adjusted available water capacity.

7. DRT: Grade according to soil droughtiness assessed against soil moisture balances.

8. M REL : Micro-relief)
FLOOD : Flood risk)
EROSN : Soil erosion)
EXP : Exposure)
FROST : Frost prone)
DIST : Disturbed land)
CHEM : Chemical limitation)

If any of these factors are considered significant in terms of the assessment of agricultural land quality, a y will be entered in the relevant column.

9. LIMIT : Principal limitation to agricultural land quality.
The following abbreviations are used:

OC - overall climate	CH - chemical limitations
AE - aspect	WE - wetness
EX - exposure	WK - workability
FR - frost	DR - drought
GR - gradient	ER - erosion
MR - micro-relief	WD - combined soil wetness/soil droughtiness
FL - flooding	
TX - soil texture	ST - topsoil stoniness
DP - soil depth	

PROFILES & PITS

1. TEXTURE : Soil texture classes are denoted by the following abbreviations:

S - sand
LS - loamy sand
SL - sandy loam
SZL - sandy silt loam
ZL - silt loam
MZCL - medium silty clay loam
MCL - medium clay loam
SCL - sandy clay loam
HZCL - heavy silty clay loam
SC - sandy clay
ZC - silty clay
C - clay

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction may be indicated by the use of prefixes.

F - fine (more than $\frac{2}{3}$ of the sand less than 0.2 mm)
C - coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M - medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:

M - medium (less than 27% clay)
H - heavy (27-35% clay)

Other possible texture classes include:

OL - organic loam
P - peat
SP - sandy peat
LP - loamy peat
PL - peaty loam.
PS - peaty sand
MZ - marine light silts

2. MOTTLE COL : Mottle colour

3. MOTTLE ABUN : Mottle abundance

F - few - less than 2% of matrix or surface described
C - common - 2-2% of the matrix
M - many - 20-40% of the matrix
VM - very many - 40% + of the matrix

4. MOTTLE CONT : Mottle continuity

F - faint - indistinct mottles, evident only on close examination
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 : Stone lithology. One of the following is used.

HR - all hard rocks or stones
MSST - soft, medium or coarse grained sandstone
SI - soft weathered igneous or metamorphic
SLST - soft oolitic or dolomitic 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.

- <u>degree of development</u>
  WK - weakly developed
  MD - moderately developed
  ST - strongly well developed

- <u>ped size</u>
  F - fine
  M - medium
  C - coarse
  VC - very coarse

- <u>ped shape</u>
  S - single grain
  M - massive
  GR - granular
  SB/SAB - sub-angular blocky
  AB - angular blocky
  PR - prismatic
  PL - platy

8. CONSIST : Soil consistence is decribed 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. <u>Other Notations</u>

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 : ADUR LP - LANCING Pit Number : 1P

Grid Reference: TQ29180555
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 0 days
Land Use : Arable
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	C	10YR42 00	0	0		
25- 55	C	25Y 62 00	0	0	M	MCP

Wetness Grade : 3B
Wetness Class : IV
Gleying :025 cm
SPL :025 cm

Drought Grade :
APW : 000mm MBW : 0 mm
APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : ADUR LP - LANCING Pit Number : 2P

Grid Reference: TQ29180603
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 0 days
Land Use : Arable
Slope and Aspect : 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	HZCL	10YR53 63	0	10		
28- 75	CH	00CH00 00	0	3		

Wetness Grade : 2
Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3B
APW : 087mm MBW : -28 mm
APP : 089mm MBP : -22 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ADUR LP - LANCING Pit Number : 3P

Grid Reference: TQ29400590
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 0 days
Land Use :
Slope and Aspect : 03 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	HCL	10YR43 00	0	3		
28- 65	C	10YR43 54	0	20		WCSAB
65-105	CH	10YR82 00	0	5		

Wetness Grade : 2
Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3A
APW : 114mm MBW : -7 mm
APP : 102mm MBP : -17 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ADUR LP - LANCING Pit Number : 4P

Grid Reference: TQ29480590 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 0 days
Land Use :
Slope and Aspect : 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 29	HCL	10YR42 43	0	7		
29- 52	C	10YR44 00	0	10		MCSAB
52- 60	C	10YR54 00	0	20		MCSAB
60-120	HZCL	10YR86 00	0	50		WCSAB

Wetness Grade : 2 Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3A APW : 138mm MBW : 17 mm
APP : 107mm MBP : -12 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ADUR LP - LANCING Pit Number : 5P

Grid Reference: TQ29980470
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 0 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 24	ZC	10YR42 53	0	0		
24- 34	C	10YR53 54	0	0	F	MCAB
34- 57	C	25Y 62 00	0	0	M	MCAB
57- 75	C	25Y 52 00	0	0	M	MCP

Wetness Grade : 3B
Wetness Class : IV
Gleying :034 cm
SPL :034 cm

Drought Grade :
APW : 000mm MBW : 0 mm
APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ29200610	ARA	S	01	000		1	2	085	-30	091	-20	3B				DR	3B	ROOTS 70
1P	TQ29180555	ARA			025	025	4	3B	000	0	000	0					WE	3B	POORSPL
2	TQ28900600	STU	S	05	000		1	2	086	-29	090	-21	3B				DR	3B	
2P	TQ29180603	ARA	S	02	000		1	2	087	-28	089	-22	3B				DR	3B	ROOTS 75
3	TQ29000600	STU	S	06	000		1	2	086	-29	092	-19	3B				DR	3B	ROOTS 70
3P	TQ29400590	AR	S	03	000		1	2	114	-7	102	-17	3A				DR	3A	ROOTS105
4	TQ29100600	STU	S	02	000		1	2	142	27	115	4	2				DR	2	
4P	TQ29480590	AR	S	02	000		1	2	138	17	107	-12	3A				DR	3A	
5	TQ29200600	ARA	S	03	000		1	2	081	-34	087	-24	3B				DR	3B	ROOT 70
5P	TQ29980470	PGR			034	034	4	3B	000	0	000	0					WE	3B	SPL 34
6	TQ29300600	AR	S	02	000		1	2	088	-27	090	-21	3B				DR	3B	ROOT 70
7	TQ29400600	AR	S	02	000		1	2	135	20	101	-10	2				DR	2	WEDR
8	TQ29500600	AR	S	04	000		1	2	102	-13	098	-13	3A				DR	3A	ROOTS 85
9	TQ29600600	AR	S	04	000		1	2	134	19	108	-3	2				DR	2	
10	TQ28900590	STU	S	06	000		1	2	100	-21	112	-7	3B				DR	3B	PROB 3A
12	TQ29100590	STU	S	04	000		1	2	133	12	108	-11	3A				DR	3A	2-3A
13	TQ29200590	AR	S	02	000		1	2	090	-31	093	-26	3B				DR	3B	
14	TQ29300590	AR	S	04	000		1	2	078	-43	078	-41	3B				DR	3B	PROB 3A
15	TQ29400590	AR	S	02	000		1	2	133	12	112	-7	2				DR	2	IMP 80
16	TQ29500590	AR	S		000		1	2	141	20	111	-8	2				DR	2	-8 POT
17	TQ28900580	STU	S	05	000		1	2	135	14	112	-7	2				DR	2	
18	TQ29000580	STU	S	02	000		1	2	079	-42	079	-40	3B				DR	3B	IMP70-3A
19	TQ29100580	STU	S	02	000		1	2	132	11	108	-11	3A				DR	3A	IMP 80
20	TQ29200580	AR	SW	01	000		1	2	090	-31	098	-21	3B				DR	3B	IMP60-3A
23	TQ29700580	STU			029	029	4	3B	000	0	000	0					WE	3B	SPL
24	TQ29200570	STU			028	028	4	3B	086	-35	092	-27	3B				WE	3B	SPL 28
26	TQ29400570	STU			028	028	4	3B	000	0	000	0					WE	3B	SPL 28
28	TQ29600570	STU			028	028	4	3B	000	0	000	0					WE	3B	SPL 28
30	TQ29200560	STU			022	022	4	3B	000	0	000	0					WE	3B	
31	TQ29300560	STU			030	030	4	3B	108	-13	116	-3	3A				WE	3B	
32	TQ29400560	ARA			025	025	4	3B	000	0	000	0					WE	3B	SPL
33	TQ29500560	STU			025	032	4	3B	000	0	000	0					WE	3B	SPL 32
34	TQ29600560	ARA			022	022	4	3B	000	0	000	0					WE	3B	SPL
35	TQ29700560	ARA			020	020	4	3B	000	0	000	0					WE	3B	SPL
36	TQ29200550	STU			025	025	4	3B	000	0	000	0					WE	3B	
37	TQ29300550	STU			023	023	4	3B	000	0	000	0					WE	3B	
38	TQ29400550	ARA			025	025	4	3B	000	0	000	0					WE	3B	SPL
39	TQ29500550	PLO			025	030	4	3B	000	0	000	0					WE	3B	SPL 30
40	TQ29600550	ARA			028	028	4	3B	000	0	000	0					WE	3B	SPL
41	TQ29700550	ARA			025	025	4	3B	000	0	000	0					WE	3B	SPL
42	TQ29000540	STU			000		1	1	138	17	116	-3	2				DR	2	
43	TQ29100540	STU			000		1	1	139	18	116	-3	2				DR	2	F MN 55

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
44	TQ29200540	PLO		025	025	4	3B	000	0	000	0					WE	3B		SPL 25
45	TQ29300540	ARA		025	025	4	3B	079	-42	082	-37	3B				WE	3B		SPL
46	TQ29400540	PLO		035	035	4	3B	000	0	000	0					WE	3B		SPL 35
47	TQ29500540	ARA		035	035	4	3B	000	0	000	0					WE	3B		SPL
48	TQ29600540	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
49	TQ29700540	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
50	TQ29000530	STU		000		1	1	141	20	117	-2	2				DR	2		
51	TQ29100530	STU		000		1	1	139	18	116	-3	2				DR	2		FEW MN
52	TQ29200530	ARA		000	020	4	3B	000	0	000	0					WE	3B		DIST Q
53	TQ29300530	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
54	TQ29400530	PGR		025	035	4	3B	000	0	000	0					WE	3B		SPL
55	TQ29500530	PGR		025	025	4	3B	000	0	000	0					WE	3B		SPL
56	TQ29600530	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
57	TQ29700530	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
58	TQ29000520	STU		000		1	1	140	19	114	-5	2				DR	2		MN 90
59	TQ29100520	STU		030	045	3	3A	096	-25	106	-13	3B				WE	3A		SPL 45
60	TQ29200520	STU		028	040	4	3B	098	-23	103	-16	3B				WE	3B		SPL 40
61	TQ29300520	PLO		040	040	4	3B	000	0	000	0					WE	3B		DEFSPL40
62	TQ29400520	ARA		025	025	4	3B	000	0	000	0					WE	3B		SPL
63	TQ29500520	ARA		025	045	4	3B	000	0	000	0					WE	3B		SPL
64	TQ29600520	PLO		028	028	4	3B	000	0	000	0					WE	3B		SPL 28
66	TQ29000510	STU		000		1	1	139	18	116	-3	2				DR	2		
67	TQ29100510	STU		075	075	2	2	134	13	115	-4	2				DR	2		WEDR
68	TQ29200510	STU		030	030	4	3B	083	-38	089	-30	3B				WE	3B		Q WC34
69	TQ29300510	STU		040	040	4	3B	000	0	000	0					WE	3B		SPL 40
70	TQ29400510	STU		035	035	4	3B	000	0	000	0					WE	3B		SPL 35
72	TQ29600510	PLO		025	025	4	3B	000	0	000	0					WE	3B		SPL 25
73	TQ29000500	STU		000		1	1	153	32	115	-4	2				DR	2		
74	TQ29100500	STU		000		1	1	139	18	115	-4	2				DR	2		
75	TQ29200500	STU		000		1	1	141	20	115	-4	2				DR	2		MNCONCS
76	TQ29300500	STU		025	035	4	3B	000	0	000	0					WE	3B		SPL 35
77	TQ29400500	STU		028	065	3	3B	000	0	000	0					WE	3B		SPL 65
78	TQ29500500	PLO		025	034	4	3B	000	0	000	0					WE	3B		SPL 34
79	TQ28900490	STU		000		1	1	132	11	116	-3	2				DR	2		
80	TQ29000490	STU		000		1	1	142	21	118	-1	2				DR	2		
81	TQ29100490	STU		000		1	1	141	20	117	-2	2				DR	2		
82	TQ29200490	STU		000		1	1	137	16	118	-1	2				DR	2		
83	TQ29300490	STU		025	035	4	3B	000	0	000	0					WE	3B		SPL 35
84	TQ29400490	STU		035	035	4	3B	000	0	000	0					WE	3B		
85	TQ29500490	PLO		055	055	3	3B	000	0	000	0					WE	3B		DEFSPL55
86	TQ29000480	STU		060		1	1	125	4	117	-2	3A				DR	2		SL GLEYD
87	TQ29100480	STU		000		1	1	145	24	118	-1	2				DR	2		

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
88	TQ29200480	STU			000		1	1	129	8	118	-1	2				DR	2	
89	TQ29000470	STU			000		1	1	130	9	114	-5	2				DR	2	
90	TQ29100470	STU			000		1	1	131	10	115	-4	2				DR	2	
91	TQ30100490	PGR	S		065		1	1	139	18	112	-7	2				DR	2	
92	TQ29700480	PGR			025	025	4	3B	000	0	000	0					WE	3B	SPL35-50
93	TQ29800480	PGR			028	058	3	3B	112	-9	116	-3	3A				WE	3B	SPL 58
94	TQ29900480	PGR			036	095	2	3A	156	35	121	2	2				WE	3A	SPL 95
95	TQ30000480	PGR	S		030		2	2	138	17	100	-19	3A				DR	3A	
96	TQ30100480	PGR	S		028	050	3	3A	141	20	117	-2	2				WE	3A	
97	TQ30200480	PGR	S		030		2	2	105	-16	109	-10	3A				DR	3A	IMP 80
98	TQ30300480	PGR	S		032		2	3B	167	46	116	-3	2				WE	3B	
100	TQ29600470	PGR			018	065	3	3B	000	0	000	0					WE	3B	SPL 65
102	TQ30000470	PGR			035	035	4	3B	147	26	115	-4	2				WE	3B	SPL 35CM
103	TQ30100470	PGR			028		2	3B	000	0	000	0					WE	3B	IMP 40
104	TQ30200470	PGR			029		2	3B	150	29	114	-5	2				WE	3B	
105	TQ30300470	PGR			028	045	3	3B	000	0	000	0					WE	3B	SPL 45
106	TQ29400460	PGR			025	025	4	3B	000	0	000	0					WE	3B	
107	TQ29500460	PGR			026		2	3B	171	50	116	-3	2				WE	3B	NO SPL
109	TQ29700460	PGR			034		2	3B	162	41	118	-1	2				WE	3B	NO SPL
110	TQ30100460	PGR			028	028	4	3B	083	-38	089	-30	3B				WE	3B	SPL 28
111	TQ30200460	PGR			038	038	4	3B	000	0	000	0					WE	3B	SPL 38CM
112	TQ30300460	PGR			030		1	3A	167	46	109	-10	2				WE	3A	BDR WC2 3B
113	TQ29400450				027	037	4	3B	000	0	000	0					WE	3B	SPL 37
115	TQ29600450	CER			055	055	3	3B	105	-16	111	-8	3A				WE	3B	SPL 55
117	TQ30200450	PGR			034	034	4	3B	163	42	112	-7	2				WE	3B	
118	TQ30300450	PGR			037	037	4	3B	082	-39	085	-34	3B				WE	3B	SPL
119	TQ30500450	PGR			025	025	4	3B	075	-46	075	-44	3B				WE	3B	SPL 28CM
121	TQ29300440	PGR			020	020	4	3B	089	-32	101	-18	3B				WE	3B	SPL 25
122	TQ29400440	PGR			018	018	4	3B	086	-35	098	-21	3B				WE	3B	SPL 20
123	TQ29500440	PGR			000	030	4	3B	000	0	000	0					WE	3B	SPL30-50
124	TQ29100430	PGR			035	035	4	3B	078	-43	078	-41	3B				WE	3B	SPL 35
125	TQ29200430	PGR			026	037	4	3B	091	-30	097	-22	3B				WE	3B	SPL 37
127	TQ29400430	PGR			028		2	3B	165	44	112	-7	2				WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-30	hzcl	10YR53 63						0	0	HR	10						Y
	30-70	ch	00CH00 00						0	0	HR	3		M				Y
1P	0-25	c	10YR42 00						0	0		0						
	25-55	c	25Y 62 00	10YR56 00	M		10YR52 00	Y	0	0		0	MCP	FM	P	Y	Y	
2	0-29	mcl	10YR52 53						0	0	HR	5						Y
	29-33	hzcl	10YR74 64						0	0	CH	80		M				Y
	33-73	ch	00CH00 00						0	0	HR	3		M				Y
2P	0-28	hzcl	10YR53 63						0	0	HR	10						Y
	28-75	ch	00CH00 00						0	0	HR	3		M				Y
3	0-25	hzcl	10YR53 63						0	0	HR	3						Y
	25-30	hzcl	10YR64 74						0	0	CH	50		M				Y
	30-70	ch	00CH00 00						0	0	HR	3		M				Y
3P	0-28	hcl	10YR43 00						0	0	HR	3						Y
	28-65	c	10YR43 54						0	0	HR	20	WCSAB	FR	M	Y		Y
	65-105	ch	10YR82 00						0	0	HR	5		M				Y
4	0-26	hcl	10YR42 00						0	0	HR	2						Y
	26-60	c	10YR54 44						0	0	HR	2		M				Y
	60-78	hcl	10YR54 44				00MN00 00		0	0	HR	2		M				Y
	78-120	c	10YR54 44	000C00 00	F				0	0	HR	2		M				Y
4P	0-29	hcl	10YR42 43						0	0	HR	7						Y
	29-52	c	10YR44 00						0	0	HR	10	MCSAB	F	M	Y		Y
	52-60	c	10YR54 00						0	0	CH	20	MCSAB	FR	M			Y
	60-120	hzcl	10YR86 00						0	0	CH	50	WCSAB	VF	M			Y
5	0-28	hcl	10YR53 54						0	0	HR	10						Y
	28-33	hcl	10YR54 00						0	0	CH	95		M				Y
	33-70	ch	00CH00 00						0	0	HR	3		M				
5P	0-24	zc	10YR42 53						0	0		0						Y
	24-34	c	10YR53 54	75YR56 00	F				0	0		0	MCAB	F	M			Y
	34-57	c	25Y 62 00	75YR56 00	M		25Y 62 00	Y	0	0		0	MCAB	F	P	Y	Y	Y
	57-75	c	25Y 52 00	75YR56 00	M		25Y 62 63	Y	0	0		0	MCP	F	P	Y	Y	Y
6	0-28	hcl	10YR53 54						0	0	HR	5						Y
	28-42	hcl	10YR54 00						0	0	CH	90		M				Y
	42-75	ch	00CH00 00						0	0	HR	3		M				Y
	75-76	ch	00CH00 00						0	0	HR	3		M				
7	0-28	hcl	10YR53 54						0	0	HR	3						Y
	28-50	c	10YR54 00						0	0	CH	50		M				Y
	50-72	hzcl	10YR74 64						0	0	CH	75		M				Y
	72-88	hzcl	10YR64 00						0	0	CH	5		M				Y
	88-120	hzcl	10YR74 64						0	0	CH	80		M				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
8	0-25	hzcl	10YR53 00						0	0	HR	12						Y
	25-45	c	10YR54 64						0	0	CH	5		M				Y
	45-85	ch	00CH00 00						0	0	HR	3		M				Y
9	0-29	hcl	10YR53 00						0	0	HR	6						Y
	29-90	zc	10YR53 54						0	0	CH	15		M				Y
	90-120	zc	10YR53 54						0	0	CH	20		M				Y
10	0-30	hcl	10YR42 00						0	0	HR	2						Y
	30-55	c	10YR54 64						0	0	CH	6		M				Y
	55-70	zc	10YR66 00						0	0	CH	35		M				Y
12	0-27	hcl	10YR42 00						0	0	HR	6						Y
	27-54	c	75YR46 00						0	0	HR	5		M				Y
	54-75	c	10YR66 00						0	0	CH	50		M				Y
	75-120	c	10YR66 00						0	0	CH	60		M				Y
13	0-27	hcl	10YR43 00						0	0	HR	5						Y
	27-35	c	10YR54 00						0	0	HR	3		M				Y
	35-75	ch	00CH00 00						0	0	HR	3		M				Y
14	0-28	hcl	10YR43 00						0	0	HR	5						Y
	28-50	hzcl	10YR74 00						0	0	CH	50		M				Y
15	0-27	hcl	10YR43 00						0	0	HR	3						Y
	27-70	c	10YR54 44						0	0	CH	15		M				Y
	70-80	hzcl	10YR74 00						0	0	CH	50		M				Y
	80-120	ch	00CH00 00						0	0	HR	3		M				Y
16	0-29	hcl	10YR42 43						0	0	HR	5						Y
	29-52	c	10YR44 00						0	0	HR	3		M				Y
	52-60	c	10YR54 00						0	0	CH	20		M				Y
	60-120	hzcl	10YR86 00						0	0	CH	50		M				Y
17	0-35	hcl	10YR42 00						0	0	HR	6						Y
	35-120	c	10YR44 54	00C000	00	F			0	0	HR	6		M				
18	0-30	hcl	10YR42 00						0	0	HR	8						Y
	30-50	c	10YR44 54						0	0	HR	10		M				Y
	50-70	hcl	10YR44 54						0	0	HR	10		M				Y
19	0-32	hcl	10YR42 32						0	0	HR	8						
	32-75	c	10YR44 54						0	0	HR	10		M				
	75-120	c	10YR66 00						0	0	CH	25		M				Y
20	0-28	hcl	10YR42 32						0	0	HR	3						Y
	28-60	c	10YR56 00						0	0	HR	5		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
23	0-29	c	10YR42 00						0	0		0						
	29-50	c	10YR53 00	75YR56 00	C			Y	0	0		0		P			Y	
24	0-28	hcl	10YR42 00						0	0		0						
	28-60	c	10YR53 54	75YR56 00	C			Y	0	0		0		P			Y	
26	0-28	hcl	10YR42 00						0	0		0						
	28-60	c	10YR53 00	75YR56 00	C			Y	0	0		0		P			Y	
28	0-28	c	10YR42 00						0	0		0						
	28-60	c	10YR53 00	75YR56 00	C			Y	0	0		0		P			Y	
30	0-22	c	10YR42 00						0	0		0						
	22-120	c	05 Y71 00	75YR46 00	M			Y	0	0		0		M			Y	
31	0-20	hcl	10YR42 00						0	0		0						
	20-30	c	10YR54 00	75YR56 00	F				0	0		0		M				
	30-120	c	10YR53 00	75YR56 00	M		10YR71 00	Y	0	0		0		M			Y	
32	0-25	hcl	10YR42 00						0	0		0						
	25-55	c	25Y 52 00	000C00 00	M			Y	0	0		0		P	Y		Y	
33	0-25	c	10YR42 00						0	0	HR	2						
	25-32	c	10YR53 00	75YR56 00	C			Y	0	0		0		P				
	32-60	c	25Y 63 00	75YR56 58	M			Y	0	0		0		P			Y	
34	0-22	c	10YR42 00						0	0		0						
	22-55	c	25Y 62 00	000C00 00	M			Y	0	0		0		P	Y		Y	
35	0-20	c	10YR42 00						0	0		0						
	20-55	c	25Y 62 00	000C00 00	C			Y	0	0		0		P	Y		Y	
36	0-25	hcl	10YR32 00						0	0	HR	5						Y
	25-50	c	10YR53 00	75YR56 00	C		10YR61 00	Y	0	0	HR	2		M			Y	Y
	50-120	c	05 Y71 00	75YR56 00	M			Y	0	0		0		M			Y	Y
37	0-23	c	10YR32 00						0	0		0						Y
	23-120	c	10YR52 00	75YR56 58	M		10YR71 00	Y	0	0		0		M			Y	Y
38	0-25	hcl	10YR32 00						0	0		0						
	25-60	c	25Y 63 00	000C00 00	M			Y	0	0		0		P	Y		Y	
39	0-25	c	10YR42 00						0	0	HR	2						
	25-30	c	10YR53 00	75YR56 00	C			Y	0	0	HR	2		M				
	30-60	c	25Y 63 00	75YR56 58	M			Y	0	0	HR	2		P			Y	
40	0-28	c	10YR32 00						0	0		0						
	28-55	c	25Y 62 00	000C00 00	M			Y	0	0		0		P	Y		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
41	0-25	c	10YR42 00						0	0		0						
	25-55	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
42	0-35	mcl	10YR42 00						0	0	HR	3						
	35-45	hcl	10YR54 56						0	0	HR	3		M				
	45-95	c	10YR54 56						0	0	HR	2		M				
	95-120	c	10YR54 00						0	0	HR	10		M				Y
43	0-27	mcl	10YR42 00						0	0	HR	2						
	27-55	c	10YR54 56						0	0	HR	1		M				
	55-120	c	10YR54 56						0	0	HR	2		M				
44	0-25	c	10YR42 00						0	0	HR	2						
	25-42	c	10YR53 00	75YR56	00	M	00MN00	00 Y	0	0	HR	2		P			Y	
	42-50	hcl	10YR53 00	75YR56	00	C	00MN00	00 Y	0	0	HR	5		P			Y	
45	0-25	c	10YR42 00						0	0		0						
	25-55	c	25Y 52 00	000C00	00	M		Y	0	0		0		P	Y		Y	
46	0-35	hcl	10YR42 00						0	0	HR	2						
	35-60	c	05Y 62 00	75YR56	00	M		Y	0	0	HR	2		P			Y	
47	0-35	hcl	10YR32 00						0	0		0						
	35-60	c	25Y 63 00	000C00	00	M		Y	0	0		0		P	Y		Y	
48	0-25	c	10YR32 00						0	0		0						
	25-60	c	25Y 63 00	000C00	00	M		Y	0	0		0		P	Y		Y	
49	0-25	c	10YR42 00						0	0		0						
	25-55	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
50	0-35	mcl	10YR42 00						0	0	HR	2						
	35-53	hcl	10YR54 00						0	0	HR	2		M				
	53-100	c	75YR54 56						0	0	HR	2		M				
	100-120	c	75YR54 56				00MN00	00	0	0	HR	2		M				
51	0-30	mcl	10YR42 00						0	0	HR	2						
	30-45	hcl	10YR54 00						0	0	HR	2		M				
	45-120	c	10YR54 56						0	0	HR	2		M				
52	0-20	c	25Y 52 00	000C00	00	M		Y	0	0		0						
	20-55	c	25Y 52 00	000C00	00	M		Y	0	0		0		P	Y		Y	
53	0-25	c	10YR42 00						0	0		0						
	25-55	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
54	0-25	c	10YR42 00						0	0		0						
	25-35	c	10YR52 00	000C00	00	M		Y	0	0		0		P	Y			
	35-55	c	25Y 63 00	000C00	00	M		Y	0	0		0		P	Y		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
55	0-25	c	10YR32 00						0	0		0						
	25-55	c	25Y 63 00	000C00	00	M		Y	0	0		0		P	Y		Y	
56	0-25	hcl	10YR32 00						0	0		0						
	25-60	c	25Y 63 00	000C00	00	M		Y	0	0		0		P	Y		Y	
57	0-25	hcl	10YR42 00						0	0		0						
	25-60	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
	60-65	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
58	0-30	mcl	10YR42 00						0	0	HR	5						
	30-48	mcl	10YR43 00						0	0	HR	3		M				
	48-65	hcl	75YR54 00						0	0	HR	2		M				
	65-120	c	10YR54 56				00MN00	00	0	0	HR	3		M				
59	0-30	mcl	10YR42 00						0	0	HR	2						
	30-45	mcl	10YR53 64	75YR56	00	C		Y	0	0	HR	2		M				
	45-70	hcl	10YR53 00	75YR56	00	C	00MN00	00 Y	0	0	HR	2		P			Y	
60	0-28	hcl	10YR42 00						0	0		0						
	28-40	c	10YR53 00	75YR56	00	C		Y	0	0	HR	2		P				
	40-80	c	10YR53 00	75YR56	00	C	00MN00	00 Y	0	0	HR	5		P			Y	
61	0-26	c	10YR42 00						0	0	HR	2						
	26-40	c	25Y 53 64	10YR56	00	F			0	0		0		M				
	40-60	c	25Y 63 00	75YR56	00	C	00MN00	00 Y	0	0	HR	2		P			Y	
62	0-25	hcl	10YR42 00						0	0		0						
	25-55	c	25Y 64 00	000C00	00	M		Y	0	0		0		P	Y		Y	
63	0-25	hcl	10YR42 00						0	0		0						
	25-45	hcl	10YR52 00	000C00	00	M		Y	0	0		0		M				
	45-70	c	25Y 62 00	000C00	00	M		Y	0	0		0		P	Y		Y	
64	0-25	c	10YR42 00						0	0		0						
	25-28	c	10YR53 54	75YR56	00	F			0	0		0		M				
	28-60	c	25Y 63 00	75YR56	00	M		Y	0	0		0		P			Y	
66	0-30	mcl	10YR42 00						0	0	HR	2						
	30-35	hcl	10YR54 56						0	0	HR	2		M				
	35-120	c	75YR54 00						0	0	HR	2		M				
67	0-30	mcl	10YR42 00						0	0	HR	3						
	30-45	hcl	75YR54 56				00MN00	00	0	0	HR	2		M				
	45-75	c	75YR54 56				00MN00	00	0	0	HR	2		M				
	75-120	c	75YR54 00	75YR56	00	C	10YR53	64 Y	0	0	HR	2		P			Y	
68	0-25	hcl	10YR42 00						0	0	HR	2						
	25-30	c	10YR54 00	75YR56	00	F	00MN00	00	0	0	HR	2		M				
	30-45	hcl	10YR53 00	75YR56	00	C	00MN00	00 Y	0	0	HR	2		P			Y	
	45-60	c	10YR53 00	75YR56	00	C	00MN00	00 Y	0	0	HR	2		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC
69	0-28	c	10YR42 00						0	0		0						
	28-40	c	25Y 63 64	75YR56 00	F				0	0		0		M				
	40-70	c	25Y 62 00	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
70	0-27	c	10YR42 00						0	0	HR	2						
	27-35	c	10YR54 53	75YR56 00	F				0	0		0		M				
	35-60	c	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y	
72	0-25	c	10YR42 00						0	0		0						
	25-30	c	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y	
	30-40	hcl	25Y 63 00	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
	40-60	c	25Y 62 63	75YR56 00	M			Y	0	0	HR	2		P			Y	
73	0-28	mcl	10YR42 00						0	0	HR	3						
	28-75	hcl	10YR43 00						0	0	HR	2		M				
	75-120	hcl	10YR54 00				00MN00 00		0	0	HR	1		M				
74	0-28	mcl	10YR42 00						0	0	HR	2						
	28-45	hcl	10YR43 54						0	0	HR	2		M				
	45-120	c	10YR54 00						0	0	HR	2		M				
75	0-25	mcl	10YR43 00						0	0	HR	2						
	25-65	hcl	10YR54 00				00MN00 00		0	0	HR	2		M				
	65-120	c	10YR54 00				00MN00 00		0	0	HR	2		M				
76	0-25	c	10YR42 00						0	0		0						
	25-35	c	10YR53 54	75YR56 00	F			Y	0	0		0		M				
	35-60	c	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y	
77	0-28	c	10YR42 00						0	0		0						
	28-45	c	25Y 63 00	75YR56 00	C			Y	0	0		0		P				
	45-65	mcl	25Y 62 00	75YR56 00	C			Y	0	0		0		M				
	65-80	c	25Y 62 00	75YR56 00	M			Y	0	0		0		P			Y	
78	0-25	c	10YR42 00						0	0		0						
	25-34	c	10YR53 00	75YR56 00	F			Y	0	0		0		M				
	34-60	c	25Y 63 00	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
79	0-22	mcl	10YR42 00						0	0		0						
	22-35	hcl	10YR44 00						0	0		0		M				
	35-120	c	10YR54 56						0	0		0		M				
80	0-28	mcl	10YR42 00						0	0		0						
	28-50	hcl	10YR44 00						0	0		0		M				
	50-120	c	10YR54 00						0	0		0		M				Faintly mottled
81	0-27	mcl	10YR43 00						0	0		0						
	27-35	hcl	10YR44 54						0	0		0		M				
	35-55	c	10YR54 00						0	0		0		M				
	55-85	c	10YR54 00						0	0		0		M				
	85-120	c	10YR56 00						0	0		0		M				Few Mn concs.

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
82	0-29	mcl	10YR43 00						0	0		0							
	29-65	hcl	10YR44 00						0	0		0		M					
	65-120	c	75YR56 00						0	0		0		M					
83	0-25	mcl	10YR42 00						0	0		0							
	25-35	hcl	10YR53 00	75YR56 00	C		00MN00 00	Y	0	0		0		M					
	35-60	c	10YR53 00	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
84	0-28	c	10YR42 00						0	0		0							
	28-35	c	10YR54 00						0	0		0		M					
	35-55	hcl	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y		
	55-70	c	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y		
85	0-25	c	10YR42 00						0	0		0							
	25-55	c	10YR54 00	75YR56 00	F				0	0		0		M					
	55-80	c	25Y 63 76	75YR56 00	M			Y	0	0		0		P			Y		
86	0-25	mcl	10YR42 00						0	0		0							
	25-45	c	75YR56 00						0	0		0		M					
	45-60	c	75YR56 00	75YR68 00	F				0	0		0		M					
	60-120	c	75YR64 00	75YR56 00	C			Y	0	0		0		M					Faintly gleyed
87	0-32	mcl	10YR43 00						0	0		0							
	32-50	mcl	10YR44 00						0	0	HR	2		M					
	50-65	hcl	75YR54 56						0	0		0		M					
	65-120	c	75YR54 56						0	0		0		M					
88	0-30	mcl	10YR43 00						0	0		0							
	30-50	mcl	10YR44 00						0	0		0		M					
	50-65	hcl	10YR54 00						0	0		0		M					
	65-120	c	10YR54 00						0	0		0		M					
89	0-29	mcl	10YR42 00						3	0	HR	3							
	29-45	hcl	10YR44 00						0	0	HR	3		M					
	45-120	c	10YR44 54						0	0	HR	3		M					Few Mn concs 80+
90	0-25	mcl	10YR42 00						0	0	HR	2							
	25-35	hcl	10YR44 00						0	0	HR	2		M					
	35-120	c	75YR56 00						0	0	HR	2		M					
91	0-28	hcl	10YR41 42						0	0	HR	1						Y	
	28-40	hcl	10YR73 63	000C00 00	F				0	0	HR	1		M				Y	
	40-65	hcl	10YR54 00	000C00 00	F				0	0	HR	1		M				Y	
	65-95	lfs	10YR53 63	10YR56 00	C			Y	0	0	HR	1		M				Y	
	95-120	scl	10YR53 63	75YR56 00	C			Y	0	0	HR	1		M				Y	
92	0-25	mcl	10YR42 00						0	0		0							
	25-50	c	25Y 62 63	75YR56 00	M			Y	0	0		0		P			Y		
	50-80	hcl	25Y 63 00	75YR56 00	C			Y	0	0		0		M			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
93	0-28	hcl	10YR42 00						0	0		0						
	28-45	fsl	25Y 62 63 75YR56 00 C					Y	0	0		0		M				
	45-58	scl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	58-80	c	25Y 52 00 75YR56 00 M					Y	0	0		0		P			Y	
94	0-36	hcl	10YR42 43						0	0		0						
	36-55	hcl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	55-65	fsl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	65-85	scl	10YR53 63 75YR56 00 C					Y	0	0		0		M				
	85-95	fsl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	95-120	c	25Y 62 63 75YR56 58 M					Y	0	0		0		P			Y	
95	0-30	mcl	10YR32 42						0	0	HR	1						Y
	30-50	mcl	10YR53 00 75YR56 00 C					Y	0	0		0		M				Y
	50-75	lfs	10YR53 00 75YR56 00 C					Y	0	0		0		M				Y
	75-95	fs	05Y 63 00					Y	0	0		0		M				Y
	95-120	fsl	10YR53 00					Y	0	0		0		M				Y
96	0-28	mcl	10YR42 00 000C00 00 F						0	0	HR	1						Y
	28-50	c	25Y 73 00 75YR56 00 M					Y	0	0	HR	1		M				Y
	50-75	c	10YR64 54 000C00 00 F					Y	0	0		0		M			Y	Y
	75-120	c	10YR53 00 75YR56 00 M					Y	0	0		0		M			Y	Y
97	0-30	mcl	10YR42 00						0	0		0						Y
	30-45	lfs	25Y 63 73 75YR56 00 C					Y	0	0		0		M				Y
	45-65	scl	10YR53 00 75YR56 00 C					Y	0	0		0		M				Y
	65-75	ms	25Y 73 63					Y	0	0		0		M				Y
	75-80	ms	25Y 73 63					Y	0	0	HR	20		M				Y
98	0-25	c	10YR42 00						0	0		0						Y
	25-32	c	10YR53 54						0	0		0		M				Y
	32-45	c	25Y 73 00 75YR56 00 C					Y	0	0		0		M				Y
	45-65	hcl	25Y 72 00 000C00 00 C					Y	0	0		0		M				Y
	65-75	fsl	10YR64 00 000C00 00 F					Y	0	0		0		M				Y
	75-100	lfs	10YR64 00					Y	0	0		0		M				Y
	100-120	fs	25Y 63 00					Y	0	0		0		M				Y
100	0-18	hcl	10YR42 00						0	0		0						
	18-45	scl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	45-65	hcl	25Y 63 00 75YR56 00 C					Y	0	0		0		M				
	65-80	c	25Y 62 63 75YR56 00 M					Y	0	0		0		P			Y	
102	0-28	zc	10YR42 00						0	0		0						Y
	28-35	c	10YR53 54						0	0		0		M				Y
	35-78	c	25Y 73 00 75YR56 00 M					Y	0	0		0		M			Y	Y
	78-95	hzcl	10YR53 00 000C00 00 C					Y	0	0		0		M				Y
	95-120	scl	10YR53 00 000C00 00 C					Y	0	0		0		M				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
103	0-28	zc	10YR42 00	000C00 00	F				0	0	HR	2						Y
	28-40	c	10YR53 00	75YR56 00	M			Y	0	0	HR	2		M				Y
104	0-29	zc	10YR53 00						0	0	HR	1						Y
	29-48	c	25YR73 00	75YR56 00	M			Y	0	0		0		M				Y
	48-65	hcl	25YR73 00	75YR56 00	C			Y	0	0		0		M				Y
	65-75	c	10YR54 00	000C00 00	C			Y	0	0		0		M				Y
	75-120	hcl	10YR54 00	000C00 00	C			Y	0	0		0		M				Y
105	0-28	hcl	10YR32-00						0	0	HR	15						
	28-45	c	25Y 63-00	05YR46-	C			Y	0	0	HR	1		M				Y
	45-120	c	25Y 63-00	05YR46-	M			Y	0	0	HR	1		P			Y	Y
106	0-10	ohcl	10YR31 00						0	0		0						
	10-25	c	10YR42 32						0	0		0		M				
	25-50	c	25Y 62 63	75YR56 00	M			Y	0	0		0		P			Y	
107	0-26	zc	10YR42 00						0	0		0						
	26-40	c	25Y 63 62	75YR56 00	M			Y	0	0		0		P				
	40-95	fsl	25Y 63 00	75YR56 00	C			Y	0	0		0		M				
	95-120	lfs	10YR62 00					Y	0	0		0		M				
109	0-34	c	10YR42 43						0	0		0						
	34-50	hcl	25Y 62 63	75YR56 00	C			Y	0	0		0		M				
	50-65	fsl	25Y 62 63	75YR56 00	C			Y	0	0		0		M				
	65-100	lfs	10YR53 00	75YR56 00	C			Y	0	0		0		M				
	100-120	c	25Y 62 63	75YR56 00	C			Y	0	0		0		P				
110	0-28	c	10YR42 00						0	0		0						Y
	28-60	c	10YR54 53	75YR56 00	M		25Y 63 00	Y	0	0		0		P			Y	Y
111	0-28	c	10YR42 00						0	0		0						Y
	28-38	c	10YR54 00						0	0		0		M				Y
	38-70	c	25Y 73 00	75YR56 00	M			Y	0	0		0		M			Y	Y
112	0-30	c	10YR42 00						0	0		0						Y
	30-39	c	25Y 52 62	75YR56 00	C			Y	0	0		0		P				Y
	39-90	lfs	10YR53 54	75YR56 00	C			Y	0	0		0		M				Y
	90-120	fs	25Y 72 73					Y	0	0		0		M				Y
113	0-8	ohcl	10YR32 00						0	0		0						
	8-27	c	10YR42 32						0	0		0		M				
	27-37	c	10YR53 54	75YR56 00	F		000000 00	Y	0	0		0		M				
	37-70	c	25Y 53 63	75YR56 00	M			Y	0	0		0		P			Y	
115	0-34	c	10YR42 43						0	0		0						
	34-55	c	10YR54 53						0	0		0		M				
	55-80	c	10YR53 00	75YR56 00	C			Y	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
117	0-28	zc	10YR43 00						0	0	0						Y
	28-34	c	10YR54 00						0	0	0		M				Y
	34-55	c	25Y 73 00	75YR56	00	M		Y	0	0	0		P			Y	Y
	55-75	fsl	10YR53 00	000C00	00	C		Y	0	0	0		M			Y	Y
	75-85	lfs	10YR53 00	000C00	00	C		Y	0	0	0		M			Y	Y
	85-120	fs	25Y 72 73					Y	0	0	0		M			Y	Y
118	0-25	c	10YR42 00						0	0	0						Y
	25-37	c	10YR53 54						0	0	0		M				Y
	37-55	c	25Y 62 63	75YR56	00	M		Y	0	0	0		P			Y	Y
119	0-25	zc	10YR42 52						0	0	0						Y
	25-50	c	25Y 63 00	000C00	00	M		Y	0	0	0		P			Y	Y
121	0-20	hcl	10YR42 00						0	0	0						
	20-70	c	25Y 62 00	75YR56	00	C		Y	0	0	0		P			Y	
122	0-18	c	10YR42 32						0	0	0						
	18-70	c	10YR53 63	75YR56	00	C		Y	0	0	0		P			Y	
123	0-30	c	10YR42 00	75YR56	00	C		Y	0	0	0						
	30-50	c	25Y 63 00	75YR56	00	M		Y	0	0	0		P			Y	
	50-80	scl	25Y 63 00	75YR56	00	C		Y	0	0	0		M			Y	
	80-120	fsl	25Y 62 63					Y	0	0	0		M			Y	
124	0-25	c	10YR42 32						0	0	0						
	25-35	c	10YR53 54						0	0	0		M				
	35-50	c	10YR53 54	75YR56	00	C		Y	0	0	0		P			Y	
125	0-26	hzcl	10YR42 32						0	0	0						
	26-37	c	10YR53 54	75YR56	00	C		Y	0	0	0		M				
	37-60	c	25Y 62 63	75YR56	00	M		Y	0	0	0		P			Y	
127	0-28	c	10YR42 00						0	0	0						
	28-40	hcl	25Y 63 00	75YR56	00	C		Y	0	0	0		M				
	40-80	lfs	25Y 62 63	75YR56	00	C		Y	0	0	0		M				
	80-95	fsl	25Y 62 63	75YR56	00	F		Y	0	0	0		M				
	95-120	scl	25Y 62 63	75YR56	00	C		Y	0	0	0		M				