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Land at Reculver, Herne Bay,
Kent
Agricultural Land Classification
ALC Map and Report
July 1993

AGRICULTURAL LAND CLASSIFICATION

LAND AT RECULVER, HERNE BAY, KENT

1. SUMMARY

1.1 During April 1993, an Agricultural Land Classification (ALC) survey was carried out on 42.2 hectares of land at Reculver, near Herne Bay, Kent. ADAS was commissioned by MAFF to determine the quality of land affected by proposals for a golf course development.

1.2 The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 42 borings and one soil inspection pit were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land, (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long term limitations on its agricultural use.

At the time of survey, the majority of the site was in arable cropping with small areas of set-aside.

1.3 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent 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 may be misleading.

Distribution of Grades and Subgrades

	Area (ha)	% Total agricultural area
Grade 3a	16.6	39.5
3b	25.4	60.5
Total agricultural area	42.0	100
Non-agricultural	0.2	
Total area of site	42.2 ha	

1.4 Appendix 1 gives a general description of the grades and land use categories in this survey.

1.5 Land on this site has been graded 3a or 3b, good or moderate quality on the basis of wetness, workability and/or droughtiness limitations. The soils observed comprised clay topsoils overlying gleyed and slowly permeable clay subsoils generally of poor structure. Given the particularly dry climatic regime at this locality and low field capacity days, such soils are assigned to wetness class III. The distinction between grades 3a and 3b is whether the topsoils were calcareous or non-calcareous this affecting soil workability. Where calcareous topsoils were observed, workability is slightly better than that for non-calcareous topsoils, and grade 3a is therefore appropriate, as opposed to grade 3b.

Profiles were also limited by droughtiness to grades 3a or occasionally 3b, as a result of clayey soil textures and poor structures interacting with a very warm, dry climate (ie, high soil moisture deficits).

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 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. However it should be noted that climate for the locality is particularly dry in nature (see paragraph 1.5).

2.4 No local climatic factors such as exposure or frost risk affect the site.

Climatic Interpolations

Grid Reference	TR227686	TR234692
Altitude (m)	2	6
Accumulated Temperature (°days)	1488	1483
Average Annual Rainfall (mm)	579	578
Field Capacity (days)	119	119
Moisture Deficit, Wheat (mm)	131	131
Moisture Deficit, Potatoes (mm)	131	131
Overall Climatic Grade	1	1

3. RELIEF

3.1 The site lies at an altitude of 2-6m AOD, land being flat and level over much of the site before rising very gently to the north. Altitude or relief do not affect agricultural land quality.

4. GEOLOGY AND SOIL

4.1 The relevant geological map for the site, Sheet 273 (BGS, 1974) shows the underlying geology to be Recent and Pleistocene Alluvium overlying Eocene Thanet Beds. To the western boundary is mapped Eocene Thanet Beds without drift and to the south Recent and Pleistocene Head Brickearth overlying Thanet Beds.

4.2 The published soils map, sheet 6 "Soils of South East England", (SSEW, 1983) shows the soil types on the site to reflect the geology. In common with Alluvium over Thanet Beds is mapped Newchurch 2 Association - "Deep stoneless mainly calcareous clayey soils". Reflecting Head Brickearth over Thanet Beds and Solid Thanet Beds is mapped Hamble 1 Association - " Deep well drained often stoneless fine silty soils " (SSEW, 1983).

4.3 A detailed examination of soils on the site broadly confirmed the presence of clayey slowly permeable soils similar to those described above.

5. AGRICULTURAL LAND CLASSIFICATION

5.1 Paragraph 1.3 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 is shown on the attached Sample Point map.

Subgrade 3A

5.3 Good quality agricultural land covers the central area of the site. Profiles are calcareous throughout and contain negligible stone. Topsoils typically consist of clay over subsoils of slowly permeable clay and silty clay. Profiles suffer from significant wetness imperfections as evidenced by gleying above 40 cm depth in the profile and slowly permeable layers from 25-40 cm depth. Wetness class is assessed as III and this in combination with calcareous, more workable, clay topsoil textures and the prevailing field capacity day range (119 limits land to subgrade 3A due to wetness and workability. In combination with wetness land is also limited to subgrade 3A due to droughtiness. The particularly dry climatic regime interacts with the poorly structured soils to restrict available water for crop growth.

Subgrade 3B

5.4 Moderate quality land covers the majority of the site and is limited, by wetness workability and/or droughtiness. Profiles contain, negligible stone and typically comprise topsoils of non-calcareous clay, occasionally silty clay. Upper and lower subsoils consist of calcareous, slowly permeable clay. Profiles suffer from significant wetness imperfections arising from gleying above 40 cm in the profile and slowly permeable layers from 20-52 cm depth. Wetness class is assessed as III and this in combination with non-calcareous, less workable, clay topsoils limits land to subgrade 3B.

5.5 As for similar reasons explained in paragraph 5.3 some profiles are also limited by droughtiness. The combination of topsoil textures and poorly structured, slowly permeable clay further limits available water for crop growth.

5.6 A number of profiles of better quality were encountered but not mapped separately due to their limited number and extent.

5.7 Areas mapped as non agricultural include a pond and a storage area for farm machinery.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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 re-claimed 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 (1974), Sheet No. 273, Faversham, 1:50,000 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 East 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 : RECULVER G.C HERNE BAY Pit Number : 1P

Grid Reference: TR23006890 Average Annual Rainfall : 579 mm
Accumulated Temperature : 1488 degree days
Field Capacity Level : 119 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 26	C	10YR42 00	0	0		
26- 52	C	25 Y52 00	0	0	M	MDCSAB
52-120	C	25 Y52 63	0	0	M	WKCSAB

Wetness Grade : 3B Wetness Class : III
Gleying :026 cm
SPL :052 cm

Drought Grade : 3A APW : 132mm MBW : 1 mm
APP : 109mm MBP : -22 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	TR23006920	CER	060	060	2	2	133	2	112	-19	3A					DR	3A	
1P	TR23006890	CER	026	052	3	3B	132	1	109	-22	3A					WE	3B	
2	TR23106920	CER	028	050	3	3B	134	3	109	-22	3A					WE	3B	
3	TR23206920	CER	030	045	3	3B	135	4	111	-20	3A					WE	3B	
4	TR23306920	CER	035	035	3	3B	128	-3	105	-26	3A					WE	3B	
5	TR23406920	CER	029	029	3	3B	126	-5	103	-28	3A					WE	3B	
6	TR23006910	CER	028	035	3	3B	130	-1	107	-24	3A					WE	3B	
7	TR23106910	CER	025		2	2	149	18	116	-15	3A					DR	3A	
8	TR23206910	CER	030	030	3	3A	126	-5	103	-28	3A					WE	3A	WEDR
9	TR23306910	CER	025	025	3	3B	124	-7	101	-30	3A					WE	3B	
10	TR23406910	CER	030	030	3	3B	126	-5	103	-28	3A					WE	3B	
11	TR22606900	FAL	028	028	3	3A	123	-8	98	-33	3B					DR	3B	
12	TR22706900	FAL	035	035	3	3A	127	-4	102	-29	3A					WE	3A	WEDR
13	TR22806900	CER	030	030	3	3B	132	1	109	-22	3A					WE	3B	
14	TR22906900	CER	035	035	3	3A	132	1	107	-24	3A					WE	3A	WEDR
15	TR23006900	CER	035	040	3	3A	129	-2	103	-28	3A					WE	3A	WEDR
16	TR23106900	CER	032	032	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
17	TR23206900	CER	030	030	3	3B	126	-5	103	-28	3A					WE	3B	
18	TR23306900	SAS	030	030	3	3B	126	-5	103	-28	3A					WE	3B	
19	TR23406900	SAS	030	030	3	3A	126	-5	103	-28	3A					WE	3A	WEDR
20	TR22706890	FAL	030	030	3	3B	124	-7	99	-32	3B					WE	3B	
21	TR22806890	FAL	028	028	3	3B	129	-2	104	-27	3A					WE	3B	
22	TR22906890	CER	030	030	3	3B	126	-5	103	-28	3A					WE	3B	
23	TR23006890	CER	030	030	3	3A	126	-5	103	-28	3A					WE	3A	WEDR
24	TR23106890	CER	032	032	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
25	TR23206890	SAS	032	032	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
26	TR23306890	SAS	032	032	3	3B	127	-4	104	-27	3A					WE	3B	
27	TR22806880	CER	033	033	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
28	TR22906880	CER	030	030	3	3A	126	-5	103	-28	3A					WE	3A	WEDR
29	TR23006880	PLO	027	027	3	3A	125	-6	102	-29	3A					WE	3A	WEDR
30	TR23106880	SAS	025	025	3	3A	124	-7	101	-30	3A					WE	3A	WEDR
31	TR23206880	SAS	027	027	3	3A	125	-6	102	-29	3A					WE	3A	WEDR
32	TR23306880	SAS	047	047	2	3A	131	0	108	-23	3A					WE	3A	WEDR
33	TR22706870	PGR	035	035	3	3B	127	-4	102	-29	3A					WE	3B	
34	TR22806870	PGR	028	028	3	3A	123	-8	98	-33	3B					DR	3B	
35	TR22906870	CER	025	025	3	3A	124	-7	101	-30	3A					WE	3A	WEDR
36	TR23006870	PLO	020	020	3	3A	122	-9	99	-32	3B					DR	3B	
37	TR23106870	PLO	033	033	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
38	TR23206870	PLO	032	032	3	3A	127	-4	104	-27	3A					WE	3A	WEDR
39	TR22706860	PGR	028	028	3	3B	123	-8	98	-33	3B					WE	3B	WEDR
40	TR22806860	PGR	028	028	3	3A	123	-8	98	-33	3B					DR	3B	
41	TR22906860	PGR	035	035	3	3B	127	-4	102	-29	3A					WE	3B	

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
42	TR23206860	PLO		035	035		3	3A	128	-3	105	-26	3A				WE	3A	WEDR

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
1	0-30	c	10YR42 00						0	0		0						Y
	30-50	c	10YR42 00	10YR46 00	F				0	0		0		M				Y
	50-60	c	10YR43 53	10YR56 00	C				0	0		0		M				Y
	60-120	c	10YR63 61	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	Y
1P	0-26	c	10YR42 00						0	0		0						
	26-52	c	25 Y52 00	75YR56 00	M			Y	0	0		0	MDCSAB FM	M	Y			Y
	52-120	c	25 Y52 63	75YR56 00	M			Y	0	0		0	WKCSAB FM	P	Y		Y	Y
2	0-28	c	10YR42 00						0	0		0						
	28-50	hcl	10YR52 00	10YR46 56	M			Y	0	0		0		M				Y
	50-100	c	10YR52 00	10YR56 00	M			Y	0	0		0		P			Y	Y
	100-120	sc	10YR52 00	10YR56 00	M			Y	0	0		0		P			Y	
3	0-30	hcl	10YR42 00						0	0		0						
	30-45	c	10YR41 42	10YR46 00	C			Y	0	0		0		M				Y
	45-65	c	10YR61 62	10YR56 00	M			Y	0	0		0		P			Y	Y
	65-75	scl	10YR61 62	10YR56 00	M			Y	0	0		0		P			Y	Y
	75-120	c	10YR61 00	10YR56 00	M			Y	0	0		0		P			Y	Y
4	0-35	c	10YR42 00						0	0		0						
	35-120	c	10YR51 53	10YR56 66	M			Y	0	0		0		P			Y	Y
5	0-29	c	10YR42 00						0	0		0						
	29-120	c	25Y 53 52	10YR56 00	M			Y	0	0		0		P			Y	Y
6	0-28	hcl	25Y 42 00						0	0	HR	1						
	28-35	c	25Y 42 00	75YR56 00	C			Y	0	0		0		M				
	35-55	c	25Y 52 00	75YR56 00	M			Y	0	0		0		P			Y	
	55-70	scl	25Y 62 00	75YR58 56	C			Y	0	0		0		P			Y	
	70-120	c	05Y 62 00	75YR58 00	M			Y	0	0	HR	2		P			Y	
7	0-25	hzcl	25Y 42 00						0	0		0						Y
	25-40	zc	25Y 42 00	75YR56 00	C			Y	0	0		0		P				Y
	40-65	hzcl	10YR42 00					Y	0	0		0		M				
	65-85	zc	25Y 63 00	75YR58 00	C			Y	0	0		0		M				
	85-120	scl	25Y 62 00	75YR58 00	C			Y	0	0		0		M				
8	0-30	c	25Y 42 00						0	0		0						Y
	30-80	c	10YR53 51	10YR56 00	M			Y	0	0		0		P			Y	Y
	80-120	c	25Y 61 63	10YR56 00	M			Y	0	0		0		P			Y	Y
9	0-25	c	10YR42 00						0	0		0						
	25-80	c	10YR53 51	10YR56 00	M			Y	0	0		0		P			Y	Y
	80-120	c	10YR53 00	10YR56 00	C			Y	0	0		0		P			Y	Y
10	0-30	c	10YR42 00						0	0		0						
	30-120	c	10YR52 53	10YR66 56	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
11	0-28	zc	25Y 42 00						0	0		0						Y
	28-120	zc	05Y 62 00	75YR56	58	M	00MN00	00 Y	0	0		0		P			Y	Y
12	0-35	zc	25Y 42 00						0	0		0						Y
	35-120	zc	05Y 62 00	75YR56	58	M		Y	0	0		0		P			Y	Y
13	0-30	hzcl	10YR42 00						0	0		0						
	30-120	c	25Y 52 00	75YR56	00	M		Y	0	0		0		P			Y	
14	0-35	hzcl	10YR32 00						0	0	HR	2						Y
	35-120	zc	10YR53 00	75YR56	00	M		Y	0	0		0		P			Y	Y
15	0-35	zc	10YR42 00						0	0		0						Y
	35-40	zc	25Y 62 00	75YR56	00	C		Y	0	0		0		M				Y
	40-110	zc	05Y 62 00	75YR56	58	M		Y	0	0		0		P			Y	Y
	110-120	scl	05Y 62 00	75YR56	00	M		Y	0	0		0		P			Y	Y
16	0-32	c	10YR42 00						0	0		0						Y
	32-120	c	10YR61 63	10YR46	00	M		Y	0	0		0		P			Y	Y
17	0-30	c	10YR42 00						0	0		0						
	30-120	c	25Y 60 62	10YR56	00	M		Y	0	0		0		P			Y	Y
18	0-30	c	10YR42 00						0	0		0						
	30-120	c	25Y 52 00	10YR46	56	M		Y	0	0		0		P			Y	Y
19	0-30	c	10YR42 00						0	0		0						Y
	30-120	c	25Y 41 51	10YR56	00	M	00MN00	00 Y	0	0		0		P			Y	Y
20	0-30	zc	25Y 42 00						0	0		0						
	30-120	zc	05Y 62 00	75YR56	00	M		Y	0	0		0		P			Y	
21	0-28	hzcl	10YR42 00						0	0		0						
	28-120	zc	05Y 62 00	75YR56	58	M		Y	0	0		0		P			Y	Y
22	0-30	c	10YR32 00						0	0		0						
	30-120	c	25 Y60 00	75YR56	00	M		Y	0	0		0		P			Y	
23	0-30	c	10YR32 00						0	0		0						Y
	30-120	c	10YR53 00	75YR56	00	C	25 Y70	00 Y	0	0		0		P			Y	Y
24	0-32	c	25 Y32 00						0	0		0						Y
	32-50	c	10YR61 00	75YR56	00	M		Y	0	0		0		P			Y	Y
	50-120	c	10YR53 00	75YR56	00	M	25 Y70	00 Y	0	0		0		P			Y	Y
25	0-32	c	10YR42 00						0	0		0						Y
	32-120	c	25Y 51 00	10YR46	00	M		Y	0	0		0		P			Y	Y

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
26	0-32	c	10YR42 00						0	0		0						
	32-120	c	25Y 51 52	10YR46 56	M			Y	0	0		0		P			Y	Y
27	0-33	c	10YR32 00						0	0		0						Y
	33-45	c	10YR52 00	75YR46 00	C		10YR61 00	Y	0	0		0		P			Y	Y
	45-120	c	10YR61 00	75YR56 00	M			Y	0	0		0		P			Y	Y
28	0-30	c	10YR32 00						0	0		0						Y
	30-45	c	10YR62 00	75YR46 00	M		10YR71 00	Y	0	0		0		P			Y	Y
	45-120	c	25 Y70 00	75YR56 00	M			Y	0	0		0		P			Y	Y
29	0-27	c	10YR32 00						0	0		0						Y
	27-120	c	25 Y52 62	75YR56 00	M		25 Y70 00	Y	0	0		0		P			Y	Y
30	0-25	c	10YR32 00						0	0		0						Y
	25-120	c	25 Y62 00	75YR56 00	M		10YR61 00	Y	0	0		0		P			Y	Y
31	0-27	c	10YR32 00						0	0		0						Y
	27-120	c	25 Y60 00	75YR56 46	M			Y	0	0		0		P			Y	Y
32	0-33	c	25 Y32 42						0	0		0						Y
	33-47	c	25 Y32 00	75YR58 00	F		10YR61 00		0	0		0		M				Y
	47-52	c	10YR42 00	75YR58 00	C			Y	0	0		0		P			Y	Y
	52-120	c	10YR61 71	10YR58 00	M			Y	0	0		0		P			Y	Y
33	0-35	zc	25Y 42 00						0	0		0						
	35-120	zc	05Y 62 00	75YR56 58	M			Y	0	0		0		P			Y	Y
34	0-28	zc	25Y 42 00						0	0		0						Y
	28-120	zc	25Y 52 62	75YR56 00	M			Y	0	0		0		P			Y	Y
35	0-25	c	10YR32 00						0	0		0						Y
	25-50	c	25 Y62 00	75YR56 00	M		25 Y70 00	Y	0	0		0		P			Y	Y
	50-120	c	10YR61 00	75YR56 46	M			Y	0	0		0		P			Y	Y
36	0-20	c	10YR32 00						0	0		0						Y
	20-120	c	10YR62 00	75YR56 58	M		10YR71 00	Y	0	0		0		P			Y	Y
37	0-33	c	25 Y52 00						0	0		0						Y
	33-120	c	10YR62 00	75YR56 00	M		10YR61 71	Y	0	0		0		P			Y	Y
38	0-32	c	10YR42 00						0	0		0						Y
	32-65	c	10YR52 00	75YR46 56	C		10YR61 00	Y	0	0		0		P			Y	Y
	65-120	c	10YR62 00	75YR56 00	M		25 Y71 00	Y	0	0		0		P			Y	Y
39	0-28	zc	25Y 42 00						0	0		0						
	28-120	zc	25Y 52 00	75YR56 00	M			Y	0	0		0		P			Y	Y

				----MOTTLES-----			PED		----STONES----			STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
40	0-28	zc	25Y 42 00						0	0		0						Y
	28-120	zc	25Y 52 62	75YR56	58	M		Y	0	0		0		P			Y	Y
41	0-35	zc	10YR42 00						0	0		0						
	35-120	zc	25Y 52 62	75YR56	00	M		Y	0	0		0		P			Y	
42	0-35	c	10YR42 00						0	0		0						Y
	35-50	c	10YR42 00	75YR58	00	C		Y	0	0		0		P			Y	Y
	50-75	c	10YR53 00	75YR58	00	C		Y	0	0		0		P			Y	Y
	75-120	c	05 Y61 00	75YR58	00	M		Y	0	0		0		P			Y	Y