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Maidstone Borough Local Plan
Site 38 Land East of Millbank, Headcorn
Agricultural Land Classification
ALC Map and Report
October 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

MAIDSTONE BOROUGH LOCAL PLAN
SITE 38 LAND EAST OF MILLBANK, HEADCORN

1 Summary

1 1 ADAS was commissioned by MAFF s Land Use Planning Unit to provide information on land quality for a number of sites in the Maidstone Borough of Kent The work forms part of MAFF s statutory input to the Maidstone Borough Local Plan

1 2 Site 38 comprises 65 8 hectares of land to the north of Headcorn near Maidstone in Kent An Agricultural Land Classification (ALC) survey was undertaken during October 1994 at a detailed level with a total of 62 borings and three soil inspection pits being assessed in accordance with MAFF s revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988) These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture

1 3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS

1 4 At the time of survey the majority of the site contained stubble from the 1994 harvest Some fields were being ploughed during the period of survey Towards the west of the site two fields were under permanent grass The areas of non agricultural land shown are mainly areas close to ponds comprising scrub Also shown as non agricultural are an area of allotment gardens towards the south east of the site and a field which has reverted to scrub to the east of Tattlebury in the north of the site The areas of woodland mapped are generally newly planted and deciduous located towards the west and east of the site Urban land comprises domestic dwellings and gardens a metalled road and towards the west of the site a bowling club

1 5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below The map has been drawn at a scale of 1 10 000 It is accurate at this scale but any enlargement would be misleading This map supersedes any previous ALC survey information for this site

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
3b	58 3	88 6	100% (58 3ha)
Non Agricultural	1 6	2 4	
Woodland	2 0	3 0	
Urban	3 2	4 9	
Open Water	0 7	1 1	
Total area of site	65 8	100%	

1 6 Appendix I gives a general description of the grades subgrades and land use categories identified in the survey The main classes are described in terms of the type of limitation that can occur the typical cropping range and the expected level and consistency of yield

1 7 The site has been classified as Subgrade 3b moderate quality land Poorly drained clayey soils derived from Weald Clay cause the land to experience significant soil wetness and workability restrictions Occasional observations were impenetrable due to weathered limestone fragments but this restriction was not significant overall

2 Climate

2 1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

2 2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall as a measure of overall wetness and accumulated temperature 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 are believed to affect the site However climatic and soil factors interact to influence soil wetness and droughtiness limitations

Table 2 Climatic Interpolation

Grid Reference	TQ834446	TQ832447
Altitude (m AOD)	20	30
Accumulated Temperature (°days Jan -June)	1487	1476
Average Annual Rainfall (mm)	632	642
Field Capacity Days	131	133
Moisture deficit wheat (mm)	124	123
Moisture deficit potatoes (mm)	122	120
Overall Climatic Grade	1	1

3 Relief

3 1 The site lies between approximately 20 and 30m AOD The majority of the site is flat however towards the south the land falls slightly and towards the south west there is a slight rise Nowhere on the site does relief or gradient affect land quality

4 Geology and Soils

4 1 The published geological information (BGS 1976) shows the majority of the site to be underlain by Cretaceous Weald Clay some of which towards the south is shown as being interbedded with Paludina Limestone In a small area towards the north east of the site 2nd terrace river gravels are shown as a drift deposit

4 2 The published soils information (SSEW 1983 and 1984) shows the site to be underlain by soils of the Shabbington and Wickham 1 Associations occurring in approximately equal amounts Shabbington soils located towards the north of the site are described as Deep fine loamy and fine loamy over sandy soils variably affected by groundwater Some slowly permeable seasonally waterlogged fine loamy over clayey soils (SSEW 1983) The Wickham 1 soils are described as slowly permeable seasonally waterlogged fine silty over clayey fine loamy over clayey and clayey soils (SSEW 1983) Typically over the site fine loamy over slowly permeable clayey soils were encountered

5 Agricultural Land Classification

5 1 Paragraph 1 5 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

Subgrade 3b

5 3 Land of moderate quality (Subgrade 3b) is mapped over all of the agricultural land at this site The principal limitation is soil wetness due to impeded drainage Typically profiles comprise a stoneless or very slightly stony (up to 2% v/v limestone fragments) occasionally slightly calcareous heavy clay loam topsoil This commonly passes to a gleyed heavy clay loam or clay upper subsoil which overlies moderately structured slowly permeable clay between 25 and 65cm See pit observations 1p 2p and 3p (Appendix III) Given the local climatic regime soils of this nature are placed in Wetness Class III or IV (see Appendix III) Due to heavy topsoils and associated workability limitations a grading of 3b is appropriate These wetness and workability factors lead to severe restrictions on the versatility of the land principally in terms of the timing of cultivations and stocking if structural damage to the soil is to be avoided Occasional observations became impenetrable to the soil auger due to limestone fragments in the matrix around 60cm but in these cases the slowly permeable clay horizons above were sufficient to apply Subgrade 3b Similarly occasional observations were of a slightly better quality but were of insufficient distribution to justify separate mapping

SOURCES OF REFERENCE

British Geological Survey (1976) Sheet 288 Maidstone 1 50 000 Solid & Drift Edition

MAFF (1988) Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land

Meteorological Office (1989) Climatic datasets for Agricultural Land Classification

Soil Survey of England and Wales (1983) Sheet No 6 Soils of South East England 1 250 000 and Accompanying Legend

Soil Survey of England and Wales (1984) Soils and their use in South-East England Bulletin No 15

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 Excellent Quality Agricultural Land
Land with no or very minor limitations to agricultural use A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit soft fruit salad crops and winter harvested vegetables Yields are high and less variable than on land of lower quality

Grade 2 Very Good Quality Agricultural Land
Land with minor limitations which affect crop yield cultivations or harvesting A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops The level of yield is generally high but may be lower or more variable than Grade 1 land

Grade 3 Good to Moderate Quality Land
Land with moderate limitations which affect the choice of crops the timing and type of cultivation harvesting or the level of yield When more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2

Subgrade 3a Good Quality Agricultural Land
Land capable of consistently producing moderate to high yields of a narrow range of arable crops especially cereals or moderate yields of a wide range of crops including cereals grass oilseed rape potatoes sugar beet and the less demanding horticultural crops

Subgrade 3b Moderate Quality Agricultural Land
Land capable of producing moderate yields of a narrow range of crops principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year

Grade 4 Poor Quality Agricultural Land
Land with severe limitations which significantly restrict the range of crops and/or the level of yields It is mainly suited to grass with occasional arable crops (e g cereals and forage crops) the yields of which are variable In moist climates yields of grass may be moderate to high but there may be difficulties in utilisation The grade also includes very droughty arable land

Grade 5 Very Poor Quality Agricultural Land
Land with severe limitations which restrict use to permanent pasture or rough grazing except for occasional pioneer forage crops

Urban
Built-up or hard uses with relatively little potential for a return to agriculture including housing industry commerce education transport religious buildings cemeteries Also hard surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be reclaimed using derelict land grants

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

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

Agricultural Buildings
Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (e g 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 e g 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

DEFINITION OF SOIL WETNESS CLASS

Wetness Class I

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

Wetness Class II

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

Wetness Class III

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

Wetness Class IV

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

Wetness Class V

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

Wetness Class VI

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

APPENDIX III

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

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 **ST** Topsoil Stones
CH Chemical	**WE** Wetness	**WK** Workability
DR Drought	**ER** Erosion Risk	**WD** Soil Wetness/Droughtiness

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	**SLST** soft oolitic or dolimitic limestone
CH chalk	**FSST** soft fine grained sandstone
ZR soft argillaceous or silty rocks	**GH** gravel with non-porous (hard) stones
MSST soft medium grained sandstone	**GH** gravel with non porous (hard) stones
SI soft weathered igneous/metamorphic rock	

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

7 **STRUCT** the degree of development size and shape of soil peds are described using the following notation

degree of development **WK** weakly developed **MD** moderately developed **ST** strongly developed
ped size **F** fine **M** medium **C** coarse **VC** very coarse
ped shape **S** single grain **M** massive **GR** granular **AB** angular blocky **SAB** sub-angular blocky **PR** prismatic **PL** platy

8 **CONSIST** Soil consistence is described using the following notation

L loose **VF** very friable **FR** friable **FM** firm **VM** very firm **EM** extremely firm
EH extremely hard

9 **SUBS STR** Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** good **M** moderate **P** poor

10 **POR** Soil porosity If a soil horizon has less than 0 5% biopores >0 5 mm a 'Y' will appear in this column

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

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

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

14 Other notations
APW available water capacity (in mm) adjusted for wheat
APP available water capacity (in mm) adjusted for potatoes
MBW moisture balance wheat
MBP moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name MAIDSTONE LP SITE 38 Pit Number 1P

Grid Reference TQ83504500 Average Annual Rainfall 637 mm
Accumulated Temperature 1481 degree days
Field Capacity Level 132 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	HCL	10YR53 00	0		2	HR					
25- 42	HCL	10YR53 63	0		5	HR	C	MDCSAB	FR	M	
42- 68	C	10YR53 64	0		0		M	WKCSAB	FR	M	
68- 95	C	10YR53 73	0		0		M	WKCSAB	FM	P	

Wetness Grade 3B Wetness Class III
Gleying 25 cm
SPL 42 cm

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

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name MAIDSTONE LP SITE 38 Pit Number 2P

Grid Reference TQ83404510 Average Annual Rainfall 637 mm
Accumulated Temperature 1481 degree days
Field Capacity Level 132 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 26	HCL	10YR43 00	0		0		F				
26 39	HCL	10YR43 44	0		0		F	MDCSAB	FR	M	
39 57	HCL	10YR53 42	0		0		M	MDCSAB	FR	M	
57 85	C	25Y 53 00	0		0		M	WKCSAB	FR	M	
85-120	C	25Y 61 53	0		0		M	WKCSAB	FR	M	

Wetness Grade 3B Wetness Class III
Gleying 39 cm
SPL 57 cm

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

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name MAIDSTONE LP SITE 38 Pit Number 3P

Grid Reference TQ83004550 Average Annual Rainfall 637 mm
Accumulated Temperature 1481 degree days
Field Capacity Level 132 days
Land Use
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 33	HCL	10YR53 43	0	0		F				
33- 41	C	25Y 53 62	0	0		M	WKCSAB	FR	M	
41- 60	C	05Y 61 62	0	2	SLST	M	MDVCAB	FM	P	

Wetness Grade 3B Wetness Class IV
Gleying 33 cm
SPL 33 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	--WETNESS-- GRDNT	GLEY	SPL	CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ83134558	STB			38	38	3	3B	0	0							WE	3B	SPL 38
1P	TQ83504500	STB			25	42	3	3B	0	0							WE	3B	SPL 42 PIT 95
2	TQ83204560	STB			33	50	3	3B	0	0							WE	3B	SPL 50
2P	TQ83404510	STB			39	57	3	3B	0	0							WE	3B	PIT100 AUG120
3	TQ83004550	STB			25	25	4	3B	0	0							WE	3B	SPL 35 SEE 3P
3P	TQ83004550	STB			33	33	4	3B	0	0							WE	3B	PIT 60 AUG 90
4	TQ83104550	STB			27	27	4	3B	0	0							WE	3B	SPL 27
5	TQ83204550	STB			27	45	3	3B	0	0							WE	3B	SPL 27
6	TQ83284551	STB			0	55	3	3B	0	0							WE	3B	SPL 27 SLGLEY0
7	TQ83414550	STB			0		2	3A	0	0							WE	3A	GLEY 0
8	TQ83504550	STB			0	37	3	3B	0	0							WE	3B	SPL 37
9	TQ83004540	STB			0	26	4	3B	0	0							WE	3B	SPL 26
10	TQ83104540	STB			27	40	3	3B	0	0							WE	3B	SPL 27
11	TQ83204540	STB			27	45	3	3B	0	0							WE	3B	SPL45 SLGLEY27
12	TQ83304540	STB			37	37	3	3B	0	0							WE	3B	SPL 37
13	TQ83404540	STB			25	35	4	3B	0	0							WE	3B	SPL 35
14	TQ83504540	STB			44	44	3	3B	0	0							WE	3B	SPL 44 IMP 55
18	TQ83104529	STB			0	27	4	3B	0	0							WE	3B	SPL 27
19	TQ83204530	STB			25	25	4	3B	0	0							WE	3B	SPL 25
20	TQ83304530	STB			29	29	4	3B	0	0							WE	3B	SPL 29
21	TQ83404530	STB			0	27	4	3B	0	0							WE	3B	SPL 27
22	TQ83504530	STB			0	25	4	3B	0	0							WE	3B	SPL 25
23	TQ83654527	CER			38	65	2	3A	0	0							WE	3A	SPL 65
24	TQ83704535	CER			35	35	4	3B	0	0							WE	3B	SPL 35
25	TQ82904520	PGR			30	39	3	3B	0	0							WE	3B	SPL 39
26	TQ83004520	PGR			27	48	3	3B	0	0							WE	3B	SPL 48
27	TQ83104520	STB			27	27	4	3B	0	0							WE	3B	SPL 27
28	TQ83204520	STB			28	28	4	3B	0	0							WE	3B	SPL 28
29	TQ83304520	STB			29	29	4	3B	0	0							WE	3B	SPL 29
30	TQ83404520	STB			27	27	4	3B	0	0							WE	3B	SPL 27
31	TQ83504520	STB			28	28	4	3B	0	0							WE	3B	SPL 28
32	TQ83604520	STB			26	35	3	3B	0	0							WE	3B	SPL 35
34	TQ83804520	STB			25	25	3	3B	0	0							WE	3B	SPL 25
35	TQ82904510	PGR			20	20	3	3B	0	0							WE	3B	SPL20 SLGLEY20
36	TQ83004510	PGR			27	27	4	3B	0	0							WE	3B	SPL 27
37	TQ83104510	STB			27	27	4	3B	0	0							WE	3B	SPL 27
38	TQ83204510	STB			25		2	3A	0	0							WE	3A	GLEY 25
39	TQ83304510	STB			25		2	3A	0	0							WE	3A	GLEY 25
40	TQ83404510	STB			38	60	3	3B	0	0							WE	3B	SPL 60
41	TQ83504510	STB			29	29	3	3B	0	0							WE	3B	SPL 29
42	TQ83604510	STB			38	38	3	3B	0	0							WE	3B	SPL 38
43	TQ83704510	STB			26	26	4	3B	0	0							WE	3B	SPL 26

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
44	TQ83104500	STB	N	01	50	50	2	3A		0		0					WE	3A	SPL 50
45	TQ83204500	STB			35	35	4	3B		0		0					WE	3B	SPL 35
46	TQ83294502	STB			25	40	3	3B		0		0					WE	3B	SPL 40
47	TQ83404500	STB			45	45	3	3B		0		0					WE	3B	SPL 45
48	TQ83504500	STB			0	29	3	3B		0		0					WE	3B	SPL 29
49	TQ83604500	STB			26	26	3	3B		0		0					WE	3B	SPL 26
50	TQ83704500	STB			30	30	3	3B		0		0					WE	3B	SPL 30
51	TQ83104490	PGR	N	01	28	28	4	3B		0		0					WE	3B	SPL 28 IMP 65
52	TQ83204490	STB	N	02	0	28	4	3B		0		0					WE	3B	SPL 28
53	TQ83504490	PLO			30	30	4	3B		0		0					WE	3B	SPL 30
54	TQ83604490	PLO			30	30	4	3B		0		0					WE	3B	SPL 30
55	TQ83704480	STB			26	26	3	3B		0		0					WE	3B	SPL 26
56	TQ83104480	PGR			35	35	4	3B		0		0					WE	3B	SPL 35 IMP 60
57	TQ83204480	STB	N	02	30	30	4	3B		0		0					WE	3B	SPL 30
58	TQ83304480	STB	NW	01	25	25	4	3B		0		0					WE	3B	SPL 25
59	TQ83404480	STB	SE	01	45	45	3	3B		0		0					WE	3B	SPL 45
60	TQ83504480	PLO			35	35	4	3B		0		0					WE	3B	SPL 35
61	TQ83204470	PLO			35	35	4	3B		0		0					WE	3B	SPL 35
62	TQ83304470	PLO	SE	03	35	35	4	3B		0		0					WE	3B	SPL 35
63	TQ83404470	STB	SE	02	30	50	3	3B		0		0					WE	3B	SPL 50
64	TQ83204460	PLO	SE	03	30	30	4	3B		0		0					WE	3B	SPL 30
65	TQ83304460	PLO	SE	01	33	33	4	3B		0		0					WE	3B	SPL 33
66	TQ83404460	PLO	SE	01	33	33	4	3B		0		0					WE	3B	SPL 33

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 25	hcl	10YR43 00						0	0		0						
	25-38	hcl	10YR44 54	00MN00	00	F			0	0		0		M				
	38-80	c	25Y 53 52	10YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
1P	0-25	hcl	10YR53 00						0	0	HR	2						
	25-42	hcl	10YR53 63	10YR58	00	C	00MN00	00 Y	0	0	HR	5	MDCSAB	FR	M			
	42-68	c	10YR53 64	10YR68	00	M	00MN00	00 Y	0	0		0	WKCSAB	FR	M	Y		Y
	68 95	c	10YR53 73	10YR68	73	M	00MN00	00 Y	0	0		0	WKCSAB	FM	P	Y		Y
2	0 33	hcl	10YR43 00						0	0		0						
	33 50	hcl	25Y 52 00	10YR56	00	M		Y	0	0		0		M				
	50 80	c	25Y 53 52	10YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
2P	0-26	hcl	10YR43 00	10YR56	00	F			0	0		0						
	26 39	hcl	10YR43 44	00MN00	00	F			0	0		0	MDCSAB	FR	M			
	39 57	hcl	10YR53 42	10YR56	00	M		Y	0	0		0	MDCSAB	FR	M	Y		
	57 85	c	25Y 53 00	75YR56	00	M		Y	0	0		0	WKCSAB	FR	M	Y		Y
	85 120	c	25Y 61 53	10YR56	68	M	00MN00	00 Y	0	0		0	WKCSAB	FR	M	Y		Y
3	0 25	hcl	10YR53 00						0	0		0						
	25 35	c	10YR53 00	75YR56	00	C		Y	0	0		0		M			Y	
	35 60	c	05Y 61 62	75YR68	00	M		Y	0	0		0		P			Y	
3P	0 33	hcl	10YR53 43	00MN00	00	F			0	0		0						
	33 41	c	25Y 53 62	10YR68	00	M	00MN00	00 Y	0	0		0	WKCSAB	FR	M	Y		Y
	41-60	c	05Y 61 62	75YR68	00	M		Y	0	0	SLST	2	MDVCAB	FM	P	Y		Y
4	0 27	hcl	10YR53 00						0	0		0						
	27-40	c	25Y 53 00	10YR58	00	C	00MN00	00 Y	0	0		0		M			Y	
	40 60	c	25Y 63 53	75YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
5	0-27	hcl	10YR53 00						0	0		0						
	27-45	hcl	25Y 53 64	75YR46	58	C	00MN00	00 Y	0	0		0		M				
	45-70	c	25Y 53 00	75YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
6	0-27	hcl	10YR43 00	10YR56	00	C		S	0	0		0						
	27-55	hcl	25Y 53 00	10YR58	00	M	00MN00	00 Y	0	0		0		M				
	55 70	c	25Y 53 63	10YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
7	0 25	hcl	10YR42 00	10YR56	00	C		Y	0	0		0						
	25 38	hcl	10YR53 00	10YR56	00	C		Y	0	0		0		M				
	38 55	hcl	25Y 53 63	75YR58	00	M	00MN00	00 Y	0	0		0		M				
8	0-25	hcl	10YR42 00	10YR56	00	C		Y	0	0		0						
	25-37	hcl	10YR53 54	10YR56	00	C		Y	0	0		0		M				
	37-60	c	25Y 53 00	75YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
9	0 26	c	10YR53 00	10YR56	00	C	00MN00	00 Y	0	0		0						
	26 45	c	25Y 63 00	75YR56	00	M	00MN00	00 Y	0	0		0		M			Y	
	45 65	c	25Y 72 00	10YR58	00	M	00MN00	00 Y	0	0		0		P			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	
10	0-27	hcl	10YR54 00						0	0		0							
	27-40	hcl	25Y 53 63 75YR58 00	M			00MN00 00	Y	0	0		0		M					
	40-60	c	25Y 63 00 75YR58 00	M			00MN00 00	Y	0	0		0		M			Y		
11	0-27	hcl	25Y 53 00 00MN00 00	C					0	0		0							
	27 45	hcl	25Y 54 00 10YR56 00	C				S	0	0		0		M					SLIGHTLY GLEYED
	45-65	c	25Y 53 63 75YR56 00	M			00MN00 00	Y	0	0		0		M			Y		
12	0-25	hcl	10YR43 00 00MN00 00	F					0	0		0							
	25-37	hcl	10YR54 44 00MN00 00	F					0	0		0		M					
	37-65	c	25Y 52 00 75YR46 68	M			00MN00 00	Y	0	0		0		M			Y		
13	0 25	hcl	10YR42 00 10YR56 00	F					0	0		0							
	25-35	c	10YR53 00 10YR56 00	C				Y	0	0		0		M					
	35-55	c	25Y 53 63 75YR56 00	M			00MN00 00	Y	0	0		0		M			Y		
14	0-25	hcl	10YR32 00 00MN00 00	M					0	0	HR	2							
	25-44	hcl	10YR54 00 00MN00 00	C					0	0		0		M					
	44-55	c	25Y 53 00 75YR56 00	M			00MN00 00	Y	0	0		0		M			Y		
18	0-27	hcl	10YR42 00 10YR56 00	C				Y	0	0		0							
	27-48	c	10YR63 00 10YR56 00	M			00MN00 00	Y	0	0		0		M			Y		
	48-65	c	10YR61 00 75YR68 00	M				Y	0	0		0		P			Y		
19	0-25	hcl	10YR43 00 10YR56 00	F					0	0		0							
	25-60	c	25Y 53 00 10YR58 62	M			00MN00 00	Y	0	0		0		M			Y		
	60-85	c	25Y 53 00 10YR58 62	M			00MN00 00	Y	0	0	HR	10		M			Y		
	85-100	c	10YR61 00 10YR58 00	M				Y	0	0		0		P			Y		
20	0-29	hcl	25Y 43 00						0	0		0							
	29-55	c	25Y 53 63 10YR58 00	M			00MN00 00	Y	0	0		0		M			Y		
	55-70	c	10YR61 00 75YR58 00	M				Y	0	0		0		P			Y		
21	0-27	hcl	10YR42 00 10YR56 00	C				Y	0	0		0							
	27-55	c	25Y 53 63 75YR46 58	M			00MN00 00	Y	0	0		0		M			Y		
22	0-25	hcl	10YR42 00 10YR56 00	C				Y	0	0		0							
	25 60	c	10YR72 00 75YR56 68	M				Y	0	0		0		M			Y		
23	0-30	hcl	10YR43 00						0	0		0							
	30-38	hcl	10YR44 00 00MN00 00	F					0	0		0		M					
	38-65	hcl	25Y 52 62 10YR58 00	C			00MN00 00	Y	0	0		0		M					
	65-90	c	25Y 53 00 10YR58 00	M			00MN00 00	Y	0	0		0		M			Y		
24	0-35	hcl	10YR43 00						0	0		0							
	35-70	c	10YR53 00 10YR58 00	M			00MN00 00	Y	0	0		0		M			Y		
25	0-30	hcl	10YR43 00 00MN00 00	F					0	0		0							
	30-39	c	10YR53 00 10YR56 00	M				Y	0	0		0		M					
	39-53	c	25Y 63 00 10YR58 00	M			00MN00 00	Y	0	0	HR	1		M			Y		
	53-70	c	25Y 72 00 75YR56 00	M				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	
26	0 27	hcl	10YR43 00						0	0		0							
	27 48	c	10YR53 54	10YR56 00	M			Y	0	0		0		M					
	48-65	c	25Y 71 00	10YR56 00	M			Y	0	0		0		P			Y		
27	0-27	c	10YR43 00	10YR56 00	F				0	0		0							
	27-48	c	25Y 63 00	10YR56 00	M		00MN00 00	Y	0	0		0		M			Y		
	48-65	c	25Y 71 00	10YR56 00	M			Y	0	0		0		P			Y		
28	0-28	hcl	10YR43 00						0	0		0							
	28-55	c	25Y 63 00	10YR58 00	C		00MN00 00	Y	0	0		0		M			Y		
	55-60	c	25Y 63 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y		
29	0 29	c	10YR43 44	10YR56 00	F				0	0		0							
	29-55	c	25Y 63 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y		
30	0 27	hcl	25Y 43 00						0	0		0							
	27 40	c	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y		
	40 55	c	25Y 53 00	10YR58 46	M		00MN00 00	Y	0	0		0		M			Y		
31	0 28	hcl	10YR43 00						0	0		0							
	28 60	c	25Y 52 63	75YR56 00	M		00MN00 00	Y	0	0		0		M			Y		
32	0-26	hcl	10YR53 00						0	0		0							
	26-35	hcl	10YR53 00	10YR68 00	C			Y	0	0		0		M					
	35-70	c	10YR53 54	10YR68 71	M		00MN00 00	Y	0	0		0		M			Y		
34	0-25	hcl	10YR53 00						0	0		0							
	25-60	c	10YR52 63	10YR68 72	C		00MN00 00	Y	0	0		0		M			Y		
35	0-20	c	10YR43 00						0	0		0							
	20-40	c	10YR54 00	10YR56 00	C			S	0	0		0		M			Y		SLIGHTLY GLEYED
	40-65	c	10YR53 00	10YR56 00	C			Y	0	0		0		M			Y		
	65-85	hcl	25Y 62 00	10YR56 58	M			Y	0	0		0		M					
36	0-27	hcl	10YR43 00						0	0		0							
	27-40	c	10YR53 00	10YR56 00	M			Y	0	0		0		M			Y		
	40-60	c	25Y 63 00	75YR58 00	M		00MN00 00	Y	0	0		0		M			Y		
37	0 27	hcl	10YR43 00						0	0		0							
	27 60	c	10YR63 00	10YR56 00	C		00MN00 00	Y	0	0		0		M			Y		
	60 95	csl	10YR53 00	10YR56 00	C			Y	0	0		0		M					
	95 100	c	10YR63 00	10YR56 00	C			Y	0	0		0		M			Y		
38	0-25	hcl	25Y 43 00						0	0		0							
	25 60	hcl	10YR53 00	75YR46 00	C		00MN00 00	Y	0	0		0		M					
	60 100	hcl	10YR53 00	75YR46 00	C			Y	0	0		0		M					
39	0 25	mcl	10YR43 00						0	0		0							
	25 35	hcl	10YR53 00	10YR56 00	C			Y	0	0		0		M					
	35-60	hcl	10YR63 00	10YR58 00	M		00MN00 00	Y	0	0		0		M					
	60-100	hcl	10YR63 00	10YR58 56	M		00MN00 00	Y	0	0		0		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
40	0-20	hcl	25Y 53 00						0	0		0						
	20-38	hcl	10YR44 00						0	0		0		M				
	38-60	hcl	10YR63 00	10YR56 00	M			Y	0	0		0		M				
	60-80	c	10YR63 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y	
	80-120	c	10YR71 00	75YR56 00	C			Y	0	0		0		P			Y	
41	0-29	hcl	10YR52 00						0	0		0						
	29-70	c	10YR53 00	10YR68 62	C		00MN00 00	Y	0	0		0		M			Y	
42	0-27	hcl	10YR43 00						0	0		0						
	27-38	hcl	10YR52 00	00MN00 00	F				0	0		0		M				
	38-70	c	10YR53 00	10YR68 00	C		00MN00 00	Y	0	0	HR	10		M			Y	
43	0-26	hcl	10YR52 00						0	0		0						
	26-55	c	10YR53 00	10YR68 72	C		00MN00 00	Y	0	0		0		M			Y	
	55-70	hcl	10YR53 54	10YR68 00	C		00MN00 00	Y	0	0		0		M				
	70-100	hcl	10YR54 00	10YR68 00	C		00MN00 00	S	0	0		0		M				
44	0-33	hcl	10YR43 00						0	0		0						
	33 50	c	10YR54 00	00MN00 00	F				0	0		0		M				
	50 80	c	25Y 52 00	10YR58 00	M			Y	0	0	SLST	5		M			Y	
45	0 35	hcl	10YR43 00	10YR56 00	F				0	0		0						
	35-68	c	10YR53 00	10YR56 00	C		00MN00 00	Y	0	0		0		M			Y	
	68-90	c	25Y 52 62	10YR68 00	M		00MN00 00	Y	0	0	SLST	5		M			Y	
46	0-25	hcl	10YR42 00						0	0		0						
	25-40	hcl	10YR53 00	10YR56 00	C			Y	0	0		0		M				
	40-65	c	10YR53 00	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y	
	65 90	hcl	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0		0		M				
47	0-35	hcl	10YR42 43	00MN00 00	F				0	0		0						
	35 45	hcl	10YR54 53	00MN00 00	F				0	0		0		M				
	45-90	c	25Y 53 61	10YR58 00	M		00MN00 00	Y	0	0		0		M			Y	
48	0-29	hcl	10YR43 00	10YR68 00	C			Y	0	0		0						
	29-55	c	10YR53 00	10YR68 62	C		00MN00 00	Y	0	0		0		M			Y	
	55-70	c	10YR53 41	10YR68 00	M		00MN00 00	Y	0	0	HR	10		M			Y	
49	0-26	c	10YR53 00						0	0		0						
	26-45	c	10YR53 56	10YR68 00	C		00MN00 00	Y	0	0		0		M			Y	
	45-80	c	10YR53 56	10YR68 00	M		00MN00 00	Y	0	0	HR	15		M			Y	
50	0-30	hcl	10YR53 00						0	0		0						
	30-50	c	10YR53 00	10YR68 00	C		00MN00 00	Y	0	0		0		M			Y	
	50-75	c	10YR53 31	10YR68 00	C		00MN00 00	Y	0	0	HR	10		M			Y	
	75-100	hcl	10YR53 66	10YR68 00	C		00MN00 00	Y	0	0	HR	15		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
51	0 28	hcl	10YR43 00						0	0		0						
	28 45	c	10YR53 00 75YR46 00 C					Y	0	0	HR	5		M		Y		
	45 65	c	10YR53 00 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		IMP WEATH LIMEST 6
52	0 28	hcl	10YR42 00 10YR56 00 C					Y	0	0		0						
	28 60	c	10YR53 00 10YR58 00 C				00MN00 00	Y	0	0		0		M		Y		
	60 80	c	25Y 53 00 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
53	0 30	hcl	10YR42 00						0	0		0						
	30-60	c	10YR53 00 10YR56 00 M					Y	0	0		0		M		Y		
	60-80	c	05GY61 00 10YR68 00 M					Y	0	0		0		P		Y		
54	0 30	hcl	10YR42 43						0	0		0						
	30 40	c	25Y 53 00 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
	40 70	c	05Y 62 00 10YR58 00 M					Y	0	0		0		P		Y		
55	0 26	c	10YR53 00						0	0		0						
	26 45	c	10YR53 00 10YR68 00 C					Y	0	0		0		M		Y		
	45 60	c	10YR53 56 10YR68 00 C					Y	0	0		0		M		Y		
56	0-35	c	10YR43 00						0	0		0						
	35-55	c	10YR53 00 10YR56 00 C				00MN00 00	Y	0	0		0		M		Y		
	55-60	c	10YR53 00 10YR56 00 C					Y	0	0	HR	20		M		Y		IMP WEATH LIMEST 6
57	0-30	hcl	10YR42 00 10YR56 00 F						0	0		0						
	30-60	c	10YR53 00 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
	60-80	c	25Y 53 00 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
58	0-25	c	10YR43 00 10YR56 00 F						0	0		0						
	25-35	c	10YR53 00 10YR58 00 C					Y	0	0		0		M		Y		
	35-80	c	25Y 53 61 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
59	0 35	hcl	10YR42 43						0	0		0						
	35 45	hcl	10YR54 00 00MN00 00 F						0	0		0		M				
	45-70	c	10YR53 63 10YR58 00 M				00MN00 00	Y	0	0		0		M		Y		
	70 120	c	25Y 62 00 10YR68 00 M				00MN00 00	Y	0	0		0		P		Y		
60	0 35	hcl	10YR42 43						0	0		0						
	35-60	c	05GY61 00 10YR58 00 M				00MN00 00	Y	0	0		0		P		Y		
	60 80	c	05GY61 00 10YR58 00 M					Y	0	0		0		P		Y		
61	0 35	hcl	10YR42 43						0	0		0						
	35 70	c	10YR53 42 10YR56 46 M				00MN00 00	Y	0	0	HR	5		M		Y		
	70 120	c	05GY51 61 10YR58 00 M				00MN00 00	Y	0	0		0		P		Y		
62	0 35	hcl	10YR42 00						0	0		0						
	35-50	c	10YR63 62 10YR58 00 M					Y	0	0		0		M		Y		
	50-70	c	25Y 61 62 10YR68 00 M					Y	0	0		0		P		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
63	0-30	hcl	10YR42 43						0	0		0						
	30-50	hcl	10YR53 52	10YR58	00	M	00MN00	00 Y	0	0		0		M				
	50-80	c	25Y 62 00	10YR58	00	M	00MN00	00 Y	0	0		0		P			Y	
	80-120	c	05GY61 00	75YR58	00	M	00MN00	00 Y	0	0		0		P			Y	
64	0-30	hcl	10YR42 00						0	0		0						
	30-40	c	10YR53 00	10YR56	00	C		Y	0	0		0		M			Y	
	40-70	c	25Y 53 00	10YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
65	0-33	hcl	10YR42 43						0	0		0						
	33-45	c	25Y 53 63	10YR66	00	M	00MN00	00 Y	0	0		0		M			Y	
	45 80	c	05GY61 00	10YR68	00	M	00MN00	00 Y	0	0		0		P			Y	
66	0-33	hcl	10YR43 42						0	0		0						
	33-45	c	10YR53 00	10YR56	00	C	00MN00	00 Y	0	0		0		M			Y	
	45-80	c	25Y 53 52	10YR58	00	M	00MN00	00 Y	0	0		0		M			Y	
	80-100	c	25Y 63 62	75YR58	00	M		Y	0	0		0		P			Y	