A1

Friars Oak Farm Clayton

West Sussex

Proposed Golf Course

Agricultural Land Classification

ALC Map and Report

November 1993

FRIARS OAK FARM, CLAYTON, WEST SUSSEX
PROPOSED GOLF COURSE

AGRICULTURAL LAND CLASSIFICATION REPORT

1 Introduction

1 1 In June 1993 a detailed Agricultural Land Classification (ALC) survey was carried out on 45 6 hectares of land to the north of Hassocks West Sussex ADAS was commissioned by MAFF s Land Use Planning Unit to determine the quality of land affected by proposals for golf course development

1 2 The survey was conducted by members of the Resource Planning Team Guildford Statutory Group at an observation density of approximately one boring per hectare A total of 43 borings and three soil inspection pits 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 use for agriculture

At the time of survey the entire site was under grassland some fields having been cut for hay and some being grazed by cattle

1 3 The distribution of the grades and sub-grades is shown on the attached ALC map and the area and extent are given in the table below The map has been drawn at a scale of 1 5000 It is accurate at this scale but any enlargement may be misleading This map supersedes any previous information for the site

Table 1 Distribution of Grades and Sub-grades

	Area (ha)	% of agricultural use
Grade 3a	14 96	35 8
3b	26 80	64 2
Total agricultural area	41 76	100
Non agricultural	1 45	
Woodland	1 40	
Urban	0 71	
Farm Buildings	0 28	
Total area of site	45 60 ha	

1 4 A general description of the grades and land-use categories identified in this survey is provided as an appendix The grades 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 5 The site has been graded good to moderate Subgrades 3a or 3b on the basis of soil wetness and/or droughtiness limitations Land has been assigned to Subgrade 3b on the basis of soil wetness The occurrence of gleyed and slowly permeable horizons at relatively shallow depth in the profile combined with a moist climatic regime (i e 181-191 field

capacity days) gives rise to a moderate wetness limitation Subgrade 3a has been mapped where slowly permeable clay occurs deeper in the soil profile such that the wetness limitation is less significant Good quality 3a land was also found in association with better drained profiles resting on impenetrable weathered Lower Greensand bedrock These shallower soils are principally limited by soil droughtiness although they may also be affected by a soil wetness problem

2 Climate

2 1 Estimates of climatic variables relevant to the assessment of agricultural land quality were obtained by interpolation from a 5 km grid point dataset (Met Office 1989) for representative locations in the survey area

Climatic Interpolations

Grid Reference	TQ 301174	TQ 300163
Altitude (m AOD)	33	46
Accumulated Temperature (°days Jan-June)	1496	1482
Average Annual Rainfall (mm)	859	920
Field Capacity Days	181	191
Moisture deficit wheat (mm)	106	103
Moisture deficit potatoes (mm)	100	96

2 2 Climatic factors are considered first when classifying land since climate can be overriding in the sense that adverse climatic conditions may restrict land to poor quality irrespective of favourable site and soil conditions The details in the table above show that there is no overall climatic limitation affecting this site In addition no local climatic factors such as exposure or frost risk affect the site

2 3 However climatic factors do interact with soil factors to affect soil wetness and droughtiness limitations At this locality average annual rainfall and field capacity days are relatively high in a regional context whilst crop adjusted moisture deficits are correspondingly low As a consequence the likelihood of a soil droughtiness limitation is reduced whilst the risk of soil wetness and workability problems may be enhanced

3 Relief

3 1 The site ranges in altitude from 33m AOD towards the northern boundary to 46m AOD along the western boundary The highest land occurs immediately east of Clayton Wickham Farm with land falling very gently north east and south

4 Geology and Soils

4 1 British Geological Survey (1984) Sheet 318/333 Brighton and Worthing shows a number of geological deposits on the site the most extensive being Lower Greensand deposits which extend across most of the area south of Friar s Oak Cottages Most of the rest of the site is

underlain by River Terrace Deposits with a small area of Sand outcropping between these and the Lower Greensand

4 2 Soil Survey of England and Wales (1983) Sheet 6 Soils of South-East England shows the entire site to comprise soils of the Wickham 1 association These are described as 'seasonally waterlogged fine silty or loamy over clayey and clayey soils (SSEW 1984)

4 3 Detailed survey of the soils on the site confirmed the presence of loamy over clayey soils consistent with the Wickham 1 association although a number of shallower profiles were found to occur where Lower Greensand deposits outcropped close to the surface

5 Agricultural Land Classification

5 1 The site has been assigned to Subgrade 3a and 3b on the basis of soil wetness and/or droughtiness limitations Across most of the site soil wetness is the overriding limitation to agricultural land quality soil droughtiness generally being less significant

Subgrade 3a

5 2 Approximately 36% of the total agricultural area surveyed has been assigned to this grade good quality agricultural land The overriding limitation to land quality across both mapping units is that of soil wetness although small areas east of Clayton Wickham Farm are also limited by soil droughtiness Profiles typically comprise medium clay loam or medium silty clay loam topsoils which are non-calcareous and free of stones These overlie medium or more usually heavy clay loam or heavy silty clay loam gleyed upper subsoils which pass to slowly permeable clay or occasionally sandy clay in the lower subsoil Although most profiles are deep and relatively stone free a few pass to very stony horizons below about 45-70 cm These subsoils are typically impenetrable (to soil auger) between 62 and 70 cm depth due to 70% medium sandstone fragments by volume Much of the land graded 3a is imperfectly drained due to the presence of slowly permeable clay horizons at 55-65 cm depth Soils with such drainage characteristics equate to Wetness Class III, which in an area which is relatively wet (ie 181-191 field capacity days) give rise to good quality Subgrade 3a land Small parts of the land within the southern most 3a mapping unit are additionally limited by soil droughtiness due to only moderate soil depth over Sandstone deposits Reserves of available water for crop growth are slightly restricted such that land cannot be graded higher than Subgrade 3a

Subgrade 3b

5 3 The majority of the site has been assessed as being of moderate quality Subgrade 3b land It is principally limited by severe soil wetness and workability restrictions
Profiles comprise medium clay loam or silty clay loam topsoils which are non-calcareous and generally free of stones These overlie heavy clay loam or pass directly to clay in the subsoil Gleying is evident below 35 and 50 cm depth Wetness Class IV is thereby appropriate and due to poor drainage status the land cannot be graded higher than Subgrade 3b

A wetness and workability limitation such as this will have adverse effects on crop germination root development and growth and will restrict the opportunity for cultivations and trafficking

Resource Planning Team
Guildford Statutory Group
ADAS Reading

ADAS Ref 4206/072/93
MAFF Ref EL 42/352

SOURCES OF REFERENCE

- British Geological Survey (1984) Sheet 318/333 Brighton and Worthing
- 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 6 Soils of South-East England
- Soil Survey of England and Wales (1984) Bulletin 15 Soils and their use in South-East England

DESCRIPTION OF THE GRADES AND SUB-GRADES

Grade 1 Excellent Quality Agricultural Land

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

Grade 2 Very Good Quality Agricultural Land

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

Grade 3 Good To Moderate Quality Agricultural Land

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

Sub-grade 3A Good Quality Agricultural Land

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

Sub-grade 3B Moderate Quality Agricultural Land

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

Grade 4 Poor Quality Agricultural Land

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

Grade 5 Very Poor Quality Agricultural Land

Land with very severe limitations which restrict use to permanent pasture or rough grazing except for occasional pioneer forage crops

Urban

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

Non-agricultural

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

Woodland

Includes commercial and non-commercial woodland

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (eg polythene tunnels erected for lambing) may be ignored

Open Water

Includes lakes ponds and rivers as map scale permits

Land Not Surveyed

Agricultural land which has not been surveyed

Where the land use includes more than one of the above eg buildings in large grounds and where map scale permits the cover types may be shown separately Otherwise the most extensive cover type will be shown

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 FRIARS OAK FM HASSOCKS Pit Number 1P

Grid Reference TQ29901640

Average Annual Rainfall 905 mm
Accumulated Temperature 1489 degree days
Field Capacity Level 188 days
Land Use
Slope and Aspect 01 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	MOTTLES	STRUCTURE
0- 23	MCL	10YR43 00	0	0		
23- 45	MCL	10YR43 53	0	5	C	MDCSAB
45- 73	HCL	10YR43 53	0	30	C	MDCOPL
73-120	HCL	10YR53 00	0	70	C	

Wetness Grade 2

Wetness Class I
Gleying 073 cm
SPL No SPL

Drought Grade 3A

APW 109mm MBW 5 mm
APP 098mm MBP 1 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name FRIARS OAK FM HASSOCKS Pit Number 2P

Grid Reference TQ30001710 Average Annual Rainfall 905 mm
Accumulated Temperature 1489 degree days
Field Capacity Level 188 days
Land Use
Slope and Aspect degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	MOTTLES	STRUCTURE
0- 23	MZCL	10YR42 00	0	0		
23- 56	HZCL	10YR53 00	0	0	C	STCSAB
56- 83	ZC	10YR61 00	0	0	M	STCOAB

Wetness Grade 3A Wetness Class III
Gleying 023 cm
SPL 056 cm

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

FINAL ALC GRADE 3A
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name FRIARS OAK FM HASSOCKS Pit Number 3P

Grid Reference TQ30101680 Average Annual Rainfall 905 mm
Accumulated Temperature 1489 degree days
Field Capacity Level 188 days
Land Use
Slope and Aspect degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	MOTTLES	STRUCTURE
0- 23	MCL	10YR41 00	0	0		
23- 75	C	10YR52 00	0	0	C	STCOAB

Wetness Grade 3B Wetness Class IV
Gleying 023 cm
SPL 023 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	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	TQ30001720	HAY			028	050	4	3B	126	22	117	20	2				WE	3B	SPL 50
1P	TQ29901640	PAS	SE	01	073		1	2	109	5	098	1	3A				DR	3A	
2	TQ30001710	HAY			055	055	3	3A	119	15	117	20	2				WE	3A	SPL 55
2P	TQ30001710	PAS	SE		023	056	3	3A	000	0	000	0					WE	3A	
3	TQ30101710	HAY			025	025	4	3B	087	-17	098	1	3A				WE	3B	SPL 25
3P	TQ30101680	PAS	SE		023	023	4	3B	000	0	000	0					WE	3B	
4	TQ30201710	HAY			025	058	3	3A	120	16	119	22	2				WE	3A	SPL 58
5	TQ30301710	HAY			028	065	3	3A	135	31	123	26	1				WE	3A	SPL 65
6	TQ29901700	HAY	E		025	025	4	3B	000	0	000	0					WE	3B	
7	TQ30001700	HAY			028	038	4	3B	103	-1	108	11	3A				WE	3B	SPL 38
8	TQ30101700	HAY			029	045	4	3B	098	-6	110	13	3A				WE	3B	SPL 45
9	TQ30201700	HAY			030	060	3	3A	117	13	115	18	2				WE	3A	SPL 60
10	TQ30301700	HAY			030	060	3	3A	140	36	115	18	1				WE	3A	SPL 60
11	TQ29901690	HAY	E	01	029	055	3	3A	000	0	000	0					WE	3A	
12	TQ30001690	HAY	E		028	028	4	3B	000	0	000	0					WE	3B	
13	TQ30101690	HAY			050	065	3	3A	119	15	117	20	2				WE	3A	SPL 65
14	TQ30201690	HAY			028	045	4	3B	111	7	109	12	2				WE	3B	SPL 45
15	TQ29901680	HAY	E	01	032	032	4	3B	000	0	000	0					WE	3B	
16	TQ30001680	HAY			028	028	4	3B	000	0	000	0					WE	3B	
17	TQ30101680	PAS	E		032	032	4	3B	000	0	000	0					WE	3B	
18	TQ30201680	HAY			028	050	4	3B	114	10	112	15	2				WE	3B	SPL 50
19	TQ29901670	PGR			030	045	4	3B	106	2	111	14	3A				WE	3B	SPL 45
20	TQ30001670	PGR			030	045	4	3B	106	2	111	14	3A				WE	3B	SPL 45
21	TQ30101670	PGR			025	045	4	3B	112	8	110	13	2				WE	3B	SPL 45
22	TQ30201669	PGR			0	045	4	3B	098	-6	109	12	3A				WE	3B	SPL 45
23	TQ29801660	PGR			030	048	4	3B	113	9	111	14	2				WE	3B	SPL 48
24	TQ29901660	PGR			028	046	4	3B	112	8	110	13	2				WE	3B	SPL 46
25	TQ30001660	PGR	SE	01	035	055	3	3A	120	16	118	21	2				WE	3A	SPL 55
26	TQ30101660	PGR			028	065	3	3A	120	16	118	21	2				WE	3A	SPL 65
27	TQ30201660	PGR			020	047	4	3B	111	7	109	12	2				WE	3B	
28	TQ29801650	PGR	NE	01	035	035	4	3B	103	-1	108	11	3A				WE	3B	SPL 35
29	TQ29901650	PGR	NE	01			1	2	152	48	118	21	1				WK	2	
30	TQ30001650	PGR	E	01	028	060	3	3A	138	34	115	18	1				WE	3A	SPL 60
31	TQ30101650	PGR	E		026	060	3	3A	123	19	114	17	2				WE	3A	SPL 60
32	TQ29801640	PAS	S	01	045		2	3A	103	-1	115	18	3A				WE	3A	
33	TQ29901640	PAS	SE	01	030		2	3A	103	-1	114	17	3A				WE	3A	IMP 70
34	TQ30001640	PAS	SE	01	029		2	3A	000	0	000	0					WE	3A	IMP 62
35	TQ30101640	PAS	SE	01	025	038	4	3B	000	0	000	0					WE	3B	
36	TQ30201638	PGR			055	055	3	3A	106	2	111	14	3A				WE	3A	SPL 55
37	TQ29801630	PAS	S	01	028	045	4	3B	000	0	000	0					WE	3B	
38	TQ29901630	PAS	S	01	035		2	3A	000	0	000	0					WE	3A	
39	TQ30001630	PAS	SE	01	036	070	3	3A	000	0	000	0					WE	3A	

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
40	TQ30101630	PGR		024	044		4	3B	104	0	109	12	3A				WE	3B	SPL 44
42	TQ29801620	PGR		020	050		4	3B	105	1	110	13	3A				WE	3B	SPL 50
43	TQ29901620	PGR		020	040		4	3B	137	33	107	10	2				WE	3B	Q SPL
44	TQ30001620	PGR		023	034		4	3B	085	-19	090	-7	3A				WE	3B	SPL 34

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	0-28	mzcl	10YR42 00						0	0		0							
	28-50	hzcl	10YR53 52	10YR56 00	C		00MN00 00	Y	0	0		0		M					
	50-100	c	25Y 62 00	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
1P	0-23	mcl	10YR43 00						0	0		0							
	23-45	mcl	10YR43 53	10YR58 68	C				0	0	MSST	5	MDCSAB FM	M					
	45-73	hcl	10YR43 53	10YR58 68	C				0	0	MSST	30	MDCOPL FM	P					
	73-120	hcl	10YR53 00	10YR58 68	C			Y	0	0	MSST	70		P					
2	0-30	mcl	10YR42 00						0	0		0							
	30-55	mcl	10YR64 00	10YR66 00	F				0	0		0		M					
	55-90	c	25Y 53 51	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
2P	0-23	mzcl	10YR42 00						0	0		0							
	23-56	hzcl	10YR53 00	75YR58 00	C		00MN00 00	Y	0	0		0	STCSAB FM	M	Y				
	56-83	zc	10YR61 00	75YR58 00	M			Y	0	0		0	STCOAB FM	P	Y		Y		
3	0-25	mcl	10YR32 42						0	0		0							
	25-70	c	25Y 51 00	75YR56 00	M		00MN00 00	Y	0	0	HR	10		P			Y		
3P	0-23	mcl	10YR41 00						0	0		0							
	23-75	c	10YR52 00	10YR58 00	C			Y	0	0		0	STCOAB FM	P	Y		Y		
4	0-25	mzcl	10YR52 00						0	0		0							
	25-58	hzcl	10YR53 52	10YR66 00	C			Y	0	0		0		M					
	58-90	c	25Y 52 00	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
5	0-28	mzcl	10YR42 00						0	0		0							
	28-65	hzcl	10YR53 52	10YR56 00	C			Y	0	0		0		M					
	65-90	c	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
	90-105	sc	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0	HR	5		P			Y		Imp 105+ flints
6	0-25	mcl	10YR43 00	10YR56 00	F				0	0		0							
	25-80	zc	25 Y63 00	75YR58 00	C		10YR71 00	Y	0	0		0		M			Y		
7	0-28	mcl	10YR42 00						0	0		0							
	28-38	hcl	10YR52 53	10YR56 00	C			Y	0	0		0		M					
	38-75	c	10YR53 52	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y		
	75-80	c	10YR53 52	75YR56 00	M		00MN00 00	Y	0	0	HR	10		P			Y		Imp 80+ flints
8	0-29	mcl	10YR42 00						0	0		0							
	29-45	hcl	25Y 52 00	10YR56 66	C		00MN00 00	Y	0	0		0		M					
	45-65	c	25Y 52 00	10YR56 66	M		00MN00 00	Y	0	0		0		P			Y		
	65-70	sc	25Y 52 00	10YR56 66	M		00MN00 00	Y	0	0	HR	10		P			Y		Imp 70+ stones
9	0-30	mcl	10YR42 00						0	0		0							
	30-60	hcl	25Y 63 62	10YR66 00	M			Y	0	0		0		M					
	60-90	c	25Y 52 51	10YR56 00	M		00MN00 00	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
10	0-30	mcl	10YR42 00						0	0		0						
	30-60	hcl	10YR53 52	10YR66 00	C			Y	0	0		0		M				
	60-90	c	25Y 62 00	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
	90-120	sc	25YZ62 00	10YR56 00	M		00MN00 00	Y	0	0	HR	5		P			Y	
11	0-29	mcl	10YR42 00						0	0		0						
	29-45	mcl	10YR53 00	75YR56 58	C		10YR71 00	Y	0	0		0		M				
	45-55	hzcl	10YR53 00	75YR58 00	C		10YR71 00	Y	0	0		0		M				
	55-85	zc	10YR71 72	75YR58 00	M			Y	0	0		0		M			Y	
12	0-28	mcl	10YR33 00						0	0		0						
	28-75	zc	25 Y53 00	75YR58 00	C		10YR71 00	Y	0	0		0		M			Y	
13	0-30	mcl	10YR42 00						0	0		0						
	30-50	mcl	10YR53 52	10YR66 00	F				0	0		0		M				
	50-65	hcl	10YR53 52	10YR56 66	C			Y	0	0		0		M				
	65-90	c	10YR52 00	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
14	0-28	mcl	10YR42 00						0	0	HR	2						
	28-45	hcl	10YR53 52	10YR56 00	C		00MN00 00	Y	0	0		0		M				
	45-90	c	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
15	0-32	mcl	10YR43 00						0	0		0						
	32-80	c	10YR53 00	10YR58 00	C		10YR71 00	Y	0	0	HR	2		M			Y	Y
16	0-28	mcl	10YR43 00						0	0		0						
	28-70	c	25 Y62 00	75YR68 00	M		10YR71 00	Y	0	0		0		M			Y	
17	0-32	mcl	10YR33 00						0	0		0						
	32-80	c	10YR53 00	75YR56 58	C		10YR71 00	Y	0	0		0		M			Y	
18	0-28	mcl	10YR42 00						0	0		0						
	28-50	hcl	10YR53 52	10YR56 00	C			Y	0	0		0		M				
	50-90	c	25Y 53 52	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
19	0-30	mcl	10YR42 00						0	0		0						
	30-45	mcl	10YR63 00	10YR66 00	C			Y	0	0		0		M				
	45-80	c	25Y 62 00	10YR66 00	M		00MN00 00	Y	0	0		0		P			Y	
20	0-30	mcl	10YR42 00	10YR56 00	F				0	0		0						
	30-45	hcl	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0		0		M				
	45-80	-	10YR53 52	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
21	0-25	mcl	10YR42 00						0	0		0						
	25-45	hcl	10YR53 52	10YR56 00	C			Y	0	0		0		M				
	45-90	c	25Y 62 53	10YR56 00	M		00MN00 00	Y	0	0		0		P			Y	
22	0-30	mcl	10YR42 00	10YR46 56	C			Y	0	0		0						
	30-45	hcl	10YR52 00	10YR56 00	M		00MN00 00	Y	0	0		0		M				
	45-70	c	10YR53 62	10YR56 00	M		00MN00 00	Y	0	0	HR	5		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	
23	0-30	mcl	10YR42 00					0	0		0							
	30-40	hcl	10YR53 62	10YR66 00 M		00MN00 00	Y	0	0		0		M					
	40-48	c	10YR53 62	10YR66 00 M		00MN00 00	Y	0	0		0		M					
	48-90	c	05Y 61 00	10YR56 00 M			Y	0	0		0		P			Y		
24	0-28	mcl	10YR42 00					0	0	HR	1							
	28-46	hcl	10YR62 00	10YR56 00 C			Y	0	0		0		M					
	46-90	c	10YR62 00	10YR56 00 M		00MN00 00	Y	0	0		0		P			Y		
25	0-35	mzcl	10YR42 00					0	0		0							
	35-55	hcl	10YR62 00	10YR58 00 M		00MN00 00	Y	0	0	HR	1		M					
	55-90	c	10YR62 00	10YR58 00 M		00MN00 00	Y	0	0		0		P			Y		
26	0-28	mzcl	10YR42 00					0	0	HR	1							
	28-65	mcl	10YR74 00	75YR56 00 C		00MN00 00	Y	0	0	HR	1		M					
	65-90	c	10YR62 00	10YR58 00 M			Y	0	0		0		P			Y		
27	0-20	mcl	10YR42 00					0	0	HR	1							
	20-47	hcl	10YR53 00	10YR56 00 C			Y	0	0		0		M					
	47-70	c	10YR62 63	10YR56 00 M		00MN00 00	Y	0	0		0		P			Y		
	70-90	c	10YR62 00	10YR56 00 M			Y	0	0		0		P			Y		
28	0-30	mcl	10YR42 00					0	0		0							
	30-35	hcl	10YR53 54					0	0		0		M					
	35-80	c	25Y 71 63	10YR56 66 M			Y	0	0		0		P			Y		
29	0-30	mcl	10YR42 00					0	0		0							
	30-100	hcl	10YR54 56	25Y 72 00 F				0	0		0		M					
	100-120	c	10YR54 56	25Y 72 00 C		00MN00 00		0	0		0		M					
30	0-28	mcl	10YR42 00					0	0		0							
	28-40	mcl	10YR53 00	10YR56 66 C			Y	0	0		0		M					
	40-60	hcl	10YR53 52	10YR56 00 M		00MN00 00	Y	0	0		0		M					
	60-120	c	10YR53 52	10YR56 00 M		00MN00 00	Y	0	0		0		P			Y		
31	0-26	mcl	10YR42 52	10YR56 00 F				0	0		0							
	26-60	mcl	10YR63 62	10YR56 00 C			Y	0	0		0		M					
	60-100	c	10YR52 00	10YR56 00 M		00MN00 00	Y	0	0		0		P			Y		
32	0-30	scl	10YR42 00					0	0		0							
	30-45	mcl	10YR43 00					0	0		0		M					
	45-70	hcl	10YR53 00	75YR58 00 C		10YR51 00	Y	0	0		0		M					Imp 70+ msst
33	0-30	mcl	10YR43 00					0	0		0							
	30-45	mcl	10YR53 00	10YR58 00 C		10YR71 00	Y	0	0		0		M					
	45-70	hcl	10YR53 00	10YR58 00 C		10YR71 00	Y	0	0	HR	10		M					Imp 70+ msst
34	0-29	mcl	10YR43 00					0	0		0							
	29-62	hcl	10YR53 00	10YR58 00 C		10YR51 74	Y	0	0		0		M					Imp 62+ msst

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
35	0-25	mcl	10YR42 00						0	0		0						
	25-38	hcl	10YR52 00	75YR58 00	C		00MN00 00	Y	0	0		0		M				
	38-85	c	25 Y53 00	75YR56 00	M		10YR71 00	Y	0	0		0		M			Y	
36	0-20	mcl	10YR42 00						0	0	HR	1						
	20-55	mcl	10YR54 00						0	0		0		M				
	55-80	c	10YR62 00	10YR56 00	M			Y	0	0		0		P			Y	
37	0-28	scl	10YR43 00		F				0	0		0						
	28-45	hcl	10YR53 00	10YR76 78	C		10YR51 72	Y	0	0		0		M				
	45-70	c	10YR53 00	10YR76 78	C		10YR51 00	Y	0	0	MSST	5		M			Y	
	70-85	scl	10YR53 00	10YR78 00	C		10YR51 00	Y	0	0	MSST	10		M			Y	
38	0-35	mcl	10YR43 00						0	0		0						
	35-55	hcl	10YR53 00	10YR58 76	C		10YR71 51	Y	0	0	MSST	5		M				
	55-85	scl	10YR52 00	10YR58 00	C		10YR51 71	Y	0	0	MSST	5		M				
39	0-36	mcl	10YR43 00						0	0		0						
	36-70	hcl	10YR53 00	10YR58 68	C		10YR71 51	Y	0	0		0		M				
	70-90	c	10YR53 00	10YR58 00	C		10YR71 51	Y	0	0		0		P			Y	
40	0-24	mcl	10YR42 00						0	0	HR	1						
	24-44	hcl	25Y 63 00	10YR56 00	C			Y	0	0		0		M				
	44-80	c	25Y 63 00	10YR56 00	M			Y	0	0		0		P			Y	
42	0-20	mcl	10YR42 00						0	0	HR	1						
	20-50	mcl	10YR62 00	10YR56 00	C			Y	0	0		0		M				
	50-80	c	25Y 72 00	75YR68 00	M			Y	0	0		0		P			Y	
43	0-20	mcl	10YR42 00						0	0	HR	1						
	20-40	mcl	10YR62 00	10YR56 00	C			Y	0	0		0		M				
	40-120	scl	05Y 61 00	75YR56 00	M			Y	0	0		0		P			Y	
44	0-23	mcl	10YR42 43						0	0	HR	1						
	23-34	mcl	10YR63 00	75YR56 00	M			Y	0	0	HR	1		M				
	34-60	hcl	10YR62 00	75YR56 00	M		00MN00 00	Y	0	0		0		P			Y	