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WEST SUSSEX MINERALS PLAN
SITE 19 : PULBOROUGH
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
NOVEMBER 1993

**WEST SUSSEX MINERALS PLAN
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1.0 Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on a number of sites in West Sussex. The work forms part of MAFF's statutory input to the preparation of the West Sussex Minerals Plan.

1.2 Approximately 87 hectares of land relating to site 19, Pulborough was surveyed in November 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 88 soil auger borings and 4 soil inspection pits were assessed in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose longterm limitations on its use for agriculture.

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

1.4 At the time of the survey the landuse on the site was permanent grassland, cereals, cereal stubble and land that had been recently ploughed.

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 survey information for this site.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Site</u>	<u>% of Agricultural Area</u>
2	25.7	29.5	31.1
3a	39.9	45.9	48.3
4	17.0	19.5	20.6
			100% (82.6 ha)
Non agricultural	3.9	4.5	
Woodland	0.5	0.6	
Total	87.0	100%	

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

1.7 The site has been classified as Grades 2, 3a and 4 with soil workability, droughtiness and wetness being the key limitations. The majority of land is classified as Subgrade 3a, comprising topsoils of heavy clay loam over sandy textured subsoils. Profiles suffer from a moderate workability limitation due to the interaction of a heavy topsoil texture with climatic factors. The same limitation applies to land classified as Grade 2. However, lighter, medium clay loam topsoils over similar sandy textured subsoils subsequently experience only a slight workability limitation. Similar profiles but with medium sandy loam topsoils, on land within this grade, experience a slight droughtiness limitation. The higher sand content reduces available water for plant growth resulting in a classification of Grade 2.

Land adjacent to the River Arun comprises heavy clay loam and clay topsoils over poorly

structured clay subsoils. Drainage is severely impaired and this together with heavy topsoils means land can be classified no higher than Grade 4 on the basis of soil wetness and workability limitations.

2.0 Climate

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

2.2 The main parameters used in the assessment of an overall climatic limitation are annual average rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

2.4 No local climatic factors such as exposure or frost risk affect the site. It should be noted that the local climate is quite wet in a regional context with high rainfall and field capacity days. These climatic factors can interact with soil properties to increase the risk of soil wetness and workability problems.

Table 2 : Climatic Interpolation

Grid Reference :	TQ 047 177
Altitude (m) :	5
Accumulated Temperature (days) :	1534
Average Annual Rainfall (mm) :	863
Field Capacity (days) :	183
Moisture Deficit, Wheat (mm) :	108
Moisture Deficit, Potatoes (mm) :	103
Overall Climatic Grade :	1

3.0 Relief

3.1 The site is flat and lies at an altitude of approximately 5 metres. Relief or gradient do not affect agricultural land quality.

4.0 Geology and Soil

4.1 The relevant geological sheet for the site, Sheet 317 (BGS, 1972) shows the underlying geology to be Alluvium next to the River Arun giving way to Valley Gravel and Cretaceous Folkestone Beds to the west, away from the river. To the south of the site is mapped Cretaceous Gault (clay).

4.2 The published soils information for the area, Sheet 6 (SSEW, 1983) shows the soils on the majority of the site to comprise the Efford 1 association - "Well drained fine loamy soils often over gravel, associated with similar permeable soils variably affected by groundwater". (SSEW, 1983). Around the banks of the River Arun is mapped the Fladbury 3 association - "Stoneless clayey, fine silty and fine loamy soils affected by groundwater. Flat land". (SSEW, 1983). A detailed inspection of soils on the site revealed the presence of soils similar to those described above.

5.0 Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

Grade 2

5.3 Land classified as grade 2 is mapped in two units to the south and west of the site area. Profiles typically comprise topsoils of medium sandy loam, occasionally medium clay loam containing 0-5% total flints, of which 0-2% were > 2 cm diameter. Upper subsoils consist of medium sandy loam, occasionally sandy clay loam containing 0-10% total flints. Lower subsoils consist of loamy medium sand or medium sandy loam with 0-28% total flints. Two soil pits were dug in this map unit. Soil pit 3 revealed subsoils of loamy medium sand and medium sandy loam to have good structural conditions. Pit 1 found similar textures but was not felt to be representative of the mapping unit in terms of the high stone content in the subsoil. Profiles are well drained and show only slight signs of wetness in the form of gleying in the lower subsoil and are assigned to a wetness class of I. However they do suffer from a slight droughtiness limitation. The combination of free draining sandy soil textures, structures, stone content and climatic factors reduces profile available water for crop growth such that a classification of grade 2 is appropriate. In places some profiles are also limited to the same grade by a slight workability limitation. Topsoils of medium clay loam retain more water than sandy topsoils due to the clay content and take longer to return to a workable condition after wetting. Within this map unit are some less droughty profiles of better quality and some of poorer quality, affected by wetness. These were not mapped separately due to their limited number and distribution.

Subgrade 3a

5.4 Land classified as subgrade 3a covers the majority of the site. Soil profiles generally comprise topsoils of medium or heavy clay loam containing 0-2% total flints over upper subsoils of a thin horizon of clay passing to medium sandy loam or sandy clay loam with 0-5% total flints. Underlying this, lower subsoils consist of loamy medium sand or medium sandy loam sometimes passing to medium sand at depth. Stone volumes are variable and range between 0-28% total flints. Soil pit 2 is typical of these soils and revealed a good subsoil structural condition for loamy medium sand soil textures. Soil pit 1 (classified 3a on droughtiness) was dug in the immediate vicinity and found similar soil textures to those described above. This showed a moderate subsoil structural condition for the medium sandy loams to the north as opposed to good structural conditions for the same texture in the south (see Pit 3). Also significant stone volumes were observed in the subsoil of Pit 1 which corresponds to some borings being impenetrable to the auger in the lower subsoil.

5.5 Soils are generally well drained but do exhibit some signs of soil wetness problems in the form of gleying, frequently above 40 cm depth in the profile which places them into a wetness class of II. This is probably due to the low lying position of the site in relation to the river and associated high groundwater levels. Conversely some profiles showed no signs of wetness problems and were placed in a wetness class of I. Soils with a wetness class of I experience a moderate workability limitation due to a heavy clay loam topsoil texture for the same reasons described for soils of grade 2. Soils assigned to wetness class II and with a medium clay loam topsoil texture combine with climatic factors to result in a classification of subgrade 3a, soils being limited by a moderate wetness and workability limitation. Finally, some profiles are limited by moderate soil droughtiness. The combination of sandy free draining textures throughout much of the profile, the stone volumes exhibited in Pit 1 and climatic factors results in a reduction of available water in the profile for crop growth.

Grade 4

5.6 Poor quality agricultural land is mapped next to the course of the River Arun. Soil profiles are stoneless and comprise topsoils of heavy clay loam overlying subsoils of poorly structured slowly permeable clay at a depth of 20-40 cm. Soils are poorly drained due to the proximity of slowly permeable clay to the surface and are placed in a wetness class of IV. This combined with a heavy topsoil texture and climatic factors results in a classification of grade 4. The periods during which the land is in a suitable state for cultivation, trafficking by machinery or grazing by livestock are very limited. Between the river and the bund, this land may also be prone to flooding.

5.7 Land classified as non agricultural includes the bund next to the River Arun and a farm track.

ADAS REFERENCE : 4205/245/93
MAFF REFERENCE : EL 42/00228

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 reclaimed using derelict land grants.

Non-agricultural

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

Woodland

Includes commercial and non-commercial woodland.

Agricultural Buildings

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

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

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

APPENDIX II

REFERENCES

* BRITISH GEOLOGICAL SURVEY (1972), Sheet No.317, Chichester, 1:63,360 scale.

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

* METEOROLOGICAL OFFICE (1989), Climatological Data for Agricultural Land Classification.

* SOIL SURVEY OF ENGLAND AND WALES (1983), Sheet No.6, "Soils of South 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 Abbreviations : Explanatory Note
 - * Soil Pit Descriptions
 - * Database Printout : Boring Level Information
 - * Database Printout : Horizon Level Information

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 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 : WSUSSEX MINS SITE 19 Pit Number : 1P

Grid Reference: TQ04301780 Average Annual Rainfall : 863 mm
 Accumulated Temperature : 1534 degree days
 Field Capacity Level : 183 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR43 00	2	3		WKCSAB
30- 53	MSL	10YR44 00	0	5		MDCSAB
53- 80	LMS	10YR63 00	0	17	C	
80-120	LMS	10YR63 00	0	28	C	

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

Drought Grade : 3A APW : 109mm MBW : 1 mm
 APP : 96 mm MBP : -7 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : WSUSSEX MINS SITE 19 Pit Number : 2P

Grid Reference: TQ05061796 Average Annual Rainfall : 863 mm
 Accumulated Temperature : 1534 degree days
 Field Capacity Level : 183 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	HCL	10YR42 62	0	1	F	WKCSAB
30- 48	C	10YR52 00	0	0	M	MDCSAB
48- 82	LMS	25Y 63 00	0	0	M	WKCSAB
82-120	MS	25Y 73 00	0	0	C	WKCSAB

Wetness Grade : 3A Wetness Class : II
 Gleying : 030 cm
 SPL : No SPL

Drought Grade : 2 APW : 122mm MBW : 14 mm
 APP : 103mm MBP : 0 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : WSUSSEX MINS SITE 19 Pit Number : 3P

Grid Reference: TQ04901740 Average Annual Rainfall : 863 mm
 Accumulated Temperature : 1534 degree days
 Field Capacity Level : 183 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR43 00	0	1		WKCSAB
30- 37	MCL	10YR43 00	0	1	C	MDCSAB
37- 70	MSL	25Y 64 00	0	1	C	WKCSAB
70-120	LMS	25Y 73 00	0	1	C	WKCSAB

Wetness Grade : 2 Wetness Class : I
 Gleying : 037 cm
 SPL : cm

Drought Grade : 1 APW : 148mm MBW : 40 mm
 APP : 120mm MBP : 17 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Workability

SOIL PIT DESCRIPTION

Site Name : WSUSSEX MINS SITE 19 Pit Number : 4P

Grid Reference: TQ05111730 Average Annual Rainfall : 863 mm
Accumulated Temperature : 1534 degree days
Field Capacity Level : 183 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 23	HCL	10YR42 00	0	0	C	MDCSAB
23- 55	C	10YR71 00	0	0	M	MDCAB

Wetness Grade : 4 Wetness Class : IV
Gleying : 0 cm
SPL : 023 cm

Drought Grade : 3B APW : mm MBW : 0 mm
APP : mm MBP : 0 mm

FINAL ALC GRADE : 4
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS	
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB					DRT
1	TQ04501820	CER	020	035	4	4		0	0				WE	4	
1P	TQ04301780	CER			1	2	109	1	96	-7	3A		DR	3A	
2	TQ04601820	CER	020	020	4	4		0	0				WE	4	
2P	TQ05061796	CER	030		2	3A	122	14	103	0	2		WE	3A	
3	TQ04701818	CER	020	020	4	3B		0	0				WE	3B	IMP80
3P	TQ04901740	CER	037		1	2	148	40	120	17	1		WK	2	
4	TQ04801818	CER	025	025	4	4		0	0				WE	4	
4P	TQ05111730	PGR	0	023	4	4		0	0				WE	4	
5	TQ04901818	CER	025	050	4	4		0	0				WE	4	
6	TQ05001818	CER	025	040	4	4		0	0				WE	4	
8	TQ04401810	CER	0	068	3	3B		0	0				WE	3B	
9	TQ04501810	PLO	0	040	4	4		0	0				WE	4	
10	TQ04601810	PLO	030		1	3A	131	23	111	8	2		WK	3A	
11	TQ04701810	PLO	038		1	3A	123	15	105	2	2		WK	3A	
12	TQ04801810	PLO	030		1	3A	115	7	100	-3	2		WK	3A	
13	TQ04901810	CER			1	2	92	-16	86	-17	3A		DR	3A	IMP85
14	TQ05001810	CER			1	2	113	5	82	-21	3A		DR	3A	Q DIST
15	TQ05101810	CER			1	2	70	-38	54	-49	3B		DR	3B	Q DIST
16	TQ05201810	CER	025	025	4	4		0	0				WE	4	
17	TQ04301800	CER			1	1	145	37	109	6	2		DR	2	
18	TQ04401800	CER	030		2	3A	60	-48	60	-43	3B		DR	3B	IMP35Q3A
19	TQ04501800	CER			1	1	135	27	107	4	2		DR	2	
20	TQ04601800	CER	030		1	3A	93	-15	97	-6	3A		WK	3A	IMP60
21	TQ04701800	CER	035		1	3A	91	-17	93	-10	3A		WK	3A	IMP60
22	TQ04801800	CER	030		1	3A	128	20	97	-6	2		WK	3A	
23	TQ04901800	CER	030		1	3A	132	24	101	-2	2		WK	3A	
24	TQ05001800	CER	030		1	3A	92	-16	90	-13	3A		WK	3A	IMP80
25	TQ05101800	CER	030		1	3A	92	-16	96	-7	3A		WK	3A	IMP65
26	TQ05201800	CER	030		2	3A	131	23	118	15	2		WE	3A	
27	TQ05301800	CER	030	030	4	4		0	0				WE	4	
28	TQ04301790	CER			1	2	94	-14	96	-7	3A		DR	3A	IMP 75
29	TQ04401790	CER			1	2	126	18	111	8	2		DR	2	
30	TQ04501790	CER			1	1	127	19	111	8	2		DR	2	
31	TQ04601790	CER	025		1	2	116	8	99	-4	2		DR	2	
32	TQ04701890	CER			1	2	126	18	111	8	2		DR	2	
33	TQ04801790	CER			1	3A	96	-12	100	-3	3A		DR	3A	IMP 65
34	TQ04901790	CER			1	2	86	-22	88	-15	3B		DR	3B	IMP 60Q3A
35	TQ05001790	CER	025		1	3A	115	7	98	-5	2		WK	3A	
36	TQ05101790	CER	020		1	3A	117	9	100	-3	2		WK	3A	
37	TQ05201790	CER	030	030	4	4		0	0				WE	4	
38	TQ04201780	CER			1	2	107	-1	109	6	3A		DR	3A	IMP 75Q2
39	TQ04301780	CER			1	1	110	2	108	5	3A		DR	3A	IMP 80Q2

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS		
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP						MB	DRT
40	TQ04401780	CER				1	1	78	-30	78	-25	3B		DR	3B	IMP 50Q3A	
41	TQ04501780	PLO		028		1	2	85	-23	86	-17	3B		DR	3B	IMP 55Q3A	
42	TQ04601780	PLO				1	2	73	-35	73	-30	3B		DR	3B	IMP 52Q3A	
43	TQ04701780	PGR		025		1	2	106	-2	104	1	3A		DR	3A	IMP 78Q2	
44	TQ04801780	CER		Q27		1	1	89	-19	92	-11	2		DR	3A	IMP 60	
45	TQ04901780	CER	N	02		1	1	129	21	98	-5	2		DR	2		
46	TQ05001780	CER			038	1	2	160	52	114	11	1		WK	2		
47	TQ05101780	CER			0	2	3A	111	3	113	10	3A		WE	3A	IMP 80	
48	TQ05201780	PLO		020	060	3	3B		0		0			WE	3B		
49	TQ04401770	CER				1	2	90	-18	92	-11	3A		DR	3A	IMP 60	
50	TQ04501770	CER				1	2	88	-20	90	-13	3A		DR	3A	IMP 55	
51	TQ04601770	CER				1	2	116	8	99	-4	2		WK	2	IMP 100	
52	TQ04701770	CER				1	2	98	-10	103	0	3A		DR	3A	IMP 75	
53	TQ04801770	CER		01		1	1	83	-25	87	-16	3B		DR	3B	IMP 70	
54	TQ04901770	CER		01		1	1	100	-8	89	-14	3A		DR	3A	IMP 100	
55	TQ05001770	CER	N	02		1	3A	133	25	106	3	2		WK	3A		
56	TQ05101770	CER	N	01	070	1	1	171	63	117	14	1			1		
57	TQ05201770	PLO			020	020	4	4		0	0			WE	4		
58	TQ04301760	CER				1	2	87	-21	89	-14	3B		DR	3B	IMP 60Q3A	
59	TQ04401760	CER				1	2	131	23	102	-1	2		WK	2	IMP 110	
60	TQ04501760	CER				1	2	103	-5	103	0	3A		DR	3A	IMP 80	
61	TQ04801760	CER				1	1	115	7	99	-4	2		DR	2	IMP 100	
62	TQ04901760	CER		01		1	1	137	29	107	4	2		DR	2		
63	TQ05001760	CER				1	1	146	38	111	8	2		DR	2		
64	TQ05101760	CER	N	01		1	1	165	57	109	6	2		DR	2		
65	TQ05201760	CER			030	030	4	4		0	0			WE	4		
66	TQ04801750	CER		01	045	055	3	3A	132	24	108	5	2		WE	3A	
67	TQ04901750	CER		02		1	1	109	1	108	6	3A		DR	3A	IMP 80Q2	
68	TQ05001760	CER				1	1	174	66	117	14	1			1		
69	TQ05101750	CER	S	01		1	1	98	-10	103	0	3A		DR	3A	IMP 55 Q2	
70	TQ05221747	CER			030	030	4	4		0	0			WE	4		
71	TQ04801740	CER		01	090		1	1	157	49	112	9	1		1		
72	TQ04901740	CER		01		1	1	161	53	119	16	1			1		
73	TQ05001740	CER	S	01	077	077	2	2	150	42	119	16	1		WE	2	
74	TQ05101740	CER	S	01		1	1	71	-37	74	-29	3B		DR	3B	IMP 68Q2	
75	TQ05201740	PLO			035	035	4	4		0	0			WE	4		
76	TQ04801730	CER			035		2	3A	161	53	120	17	1		WE	3A	
77	TQ04901730	CER			050		1	2	157	49	114	11	1		WK	2	
78	TQ05001730	PGR			030		2	3A	137	29	119	16	2		WE	3A	IMP90
79	TQ05101730	PGR			0	025	4	4		0	0			WE	4		
80	TQ05201730	PLO			020	035	4	4		0	0			WE	4		
81	TQ04701720	PLO			053		1	2	155	47	109	6	2		WK	2	

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRONT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
82	TQ04801720	PLO	043		1	2	166	58	119	16	1				WK	2	
83	TQ04901720	PGR	0	030	4	4		0		0					WE	4	
84	TQ05001720	PLO	0	035	4	4		0		0					WE	4	
85	TQ05101720	PLO	0	037	4	4		0		0					WE	4	
86	TQ04701710	CER	025		2	3A	101	-7	107	4	3A				WE	3A	IMP 65Q2
87	TQ04801710	PGR	0	045	3	3A	107	-1	112	9	3A				WE	3A	
88	TQ04901710	PLO	0	036	4	4		0		0					WE	4	
89	TQ05001710	PLO	0	036	4	4		0		0					WE	4	FLOOD RISK

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED	-----STONES-----			STRUCT/	SUBS	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		
1	0-20	hc1	10YR56 00					0	0	0				
	20-35	hc1	10YR51 00 75YR58 00 C					Y	0	0			M	
	35-120	zc	10YR51 00 75YR58 00 C					Y	0	0			P	Y
1P	0-30	mc1	10YR43 00					2	0	HR	3	WKCSAB	FR	
	30-53	ms1	10YR44 00					0	0	HR	5	MDCSAB	FR M	
	53-80	1ms	10YR63 00 75YR44 00 C				00MN00 00	0	0	HR	17		M	
	80-120	1ms	10YR63 00 75YR44 00 C				00MN00 00	0	0	HR	28		M	
2	0-20	hc1	10YR44 00					0	0					
	20-120	zc	10YR61 00 75YR56 00 C					Y	0	0			P	Y
2P	0-30	hc1	10YR42 62 10YR56 00 F					0	0	HR	1	WKCSAB	FM	
	30-48	c	10YR52 00 75YR56 00 M					Y	0	0			MDCSAB	FM M Y
	48-82	1ms	25Y 63 00 75YR56 00 M					Y	0	0			WKCSAB	FR G
	82-120	ms	25Y 73 00 75YR56 00 C					Y	0	0			WKCSAB	VF M
3	0-20	mc1	10YR44 00					0	0	HR	2			
	20-55	zc	10YR51 00 75YR56 00 C					Y	0	0	HR	1		P Y
	55-80	1ms	10YR51 00 10YR58 00 C					Y	0	0	HR	2		M
3P	0-30	mc1	10YR43 00					0	0	HR	1	WKCSAB	FR	
	30-37	mc1	10YR43 00 10YR58 00 C				00MN00 00 Y	0	0	HR	1	MDCSAB	FR M	
	37-70	ms1	25Y 64 00 75YR58 00 C				00MN00 00 Y	0	0	HR	1	WKCSAB	FR G	
	70-120	1ms	25Y 73 00 75YR58 00 C				00MN00 00 Y	0	0	HR	1	WKCSAB	FR G	
4	0-25	hc1	10YR44 00					0	0					
	25-120	zc	10YR62 00 05YR56 00 C					Y	0	0			P	Y
4P	0-23	hc1	10YR42 00 75YR58 00 C				00MN00 00 Y	0	0				MDCSAB	FM
	23-55	c	10YR71 00 75YR58 00 M				00MN00 00 Y	0	0				MDCAB	FM P Y Y
5	0-25	hc1	10YR44 00					0	0					
	25-50	zc	10YR51 00 05YR56 00 C					Y	0	0			M	
	50-120	c	10YR61 00 05YR56 00 C					Y	0	0			P	Y
6	0-25	hc1	10YR44 00					0	0					
	25-40	hzc1	10YR51 00 10YR58 00 C					Y	0	0			M	
	40-120	c	10YR62 00 75YR58 00 C					Y	0	0			P	Y
8	0-38	hc1	10YR52 00 10YR56 00 C					Y	0	0	HR	1		
	38-68	c	10YR71 00 75YR56 00 M					Y	0	0			M	
	68-120	c	10YR71 00 75YR56 00 M				00MN00 00 Y	0	0				P	Y Y
9	0-40	hc1	10YR52 00 75YR58 51 C					Y	0	0				
	40-60	c	10YR71 00 75YR58 51 M					Y	0	0			P	Y
	60-120	c	10YR71 00 75YR58 51 M					Y	0	0			P	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP
10	0-30	hc1	10YR43 00 10YR58 00 C					0	0	0						
	30-50	hc1	10YR71 00 10YR58 00 C					Y	0	0	0			M		
	50-60	ms1	10YR71 00 10YR58 00 M					Y	0	0	0			M		
	60-68	1ms	75YR58 00					0	0	0				G		
	68-90	1ms	25Y 72 00					0	0	0				G		
	90-120	ms	25Y 72 00					0	0	0				M		
11	0-38	hc1	10YR43 00 10YR58 00 F					0	0	HR	1					
	38-50	ms1	10YR63 00 10YR58 00 C					Y	0	0	0			M		
	50-80	1ms	75YR58 00					0	0	0				G		
	80-120	ms	25Y 62 00					0	0	0				M		
12	0-30	hc1	10YR43 00 10YR58 00 F					0	0	HR	1					
	30-45	sc1	10YR63 00 10YR58 00 C					Y	0	0	0			M		
	45-70	1ms	25Y 62 00 10YR58 00 M					Y	0	0	0			G		
	70-120	ms	25Y 62 00 10YR58 00 M					Y	0	0	0			M		
13	0-25	sc1	10YR44 00					0	0	0						
	25-55	1ms	10YR44 00					0	0	0				G		
	55-85	1ms	10YR56 00					0	0	0				G		
14	0-20	sc1	10YR44 00					0	0	0						
	20-120	1ms	10YR56 00					0	0	0				G		
15	0-30	1ms	10YR34 00					0	0	0						
	30-120	ms	10YR73 00					0	0	0				M		
16	0-25	hc1	10YR44 00					0	0	0						
	25-120	c	10YR51 00 75YR56 00 C					Y	0	0	0			P		Y
17	0-30	ms1	10YR43 00					0	0	HR	2					
	30-90	ms1	10YR44 00					0	0	HR	1			M		
	90-120	1ms	10YR64 56					0	0	HR	2			G		
18	0-30	mc1	10YR44 00					0	0	HR	3					
	30-35	hc1	10YR52 00 10YR56 00 C					Y	0	0	0			M		
19	0-35	ms1	10YR44 00					0	0	HR	3					
	35-65	ms1	75YR44 00					0	0	0				M		
	65-120	1ms	10YR56 00					0	0	HR	5			G		
20	0-30	hc1	10YR44 00					0	0	HR	2					
	30-40	sc1	10YR52 00 75YR56 00 C				00MN00 00	Y	0	0	HR	2		M		
	40-60	ms1	10YR52 44 75YR56 00 C					Y	0	0	HR	2		M		
21	0-35	hc1	10YR43 00					0	0	HR	2					
	35-50	ms1	10YR62 00 75YR56 00 C					Y	0	0	HR	1		M		
	50-60	1ms	75YR44 00					0	0	HR	10			G		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
22	0-30	hc1	10YR44 00						0	0	HR	1						
	30-40	sc1	10YR62 00	75YR56	00	C		Y	0	0	HR	1		M				
	40-120	lms	10YR64 00	75YR56	00	M		Y	0	0		0		G				
23	0-30	hc1	10YR44 00	75YR56	00	C			0	0	HR	1						
	30-38	c	10YR52 00	75YR56	00	C		Y	0	0		0		M				
	38-45	ms1	10YR52 00	10YR56	00	C			0	0		0		M				
	45-120	lms	10YR64 00	75YR56	00	M		Y	0	0		0		G				
24	0-30	hc1	10YR44 00	75YR56	00	C			0	0	HR	1						
	30-80	lms	10YR63 64	75YR56	00	C		Y	0	0	HR	5		G				
25	0-30	hc1	10YR44 00	75YR56	00	C			0	0	HR	1						
	30-45	c	10YR62 00	75YR56	00	M		Y	0	0		0		M				
	45-65	lms	10YR62 00	75YR56	00	M		Y	0	0	HR	5		G				
26	0-30	hc1	10YR53 00						0	0		0						
	30-75	c	10YR52 00	10YR58	61	M		Y	0	0		0		M				
	75-100	sc1	10YR51 56	10YR56	00	C		Y	0	0		0		M				
27	0-30	hc1	10YR53 00						0	0		0						
	30-60	c	10YR52 00	10YR58	61	M		Y	0	0		0		P			Y	
	60-100	c	10YR71 00	10YR58	00	M		Y	0	0		0		P	Y		Y	
28	0-30	sc1	10YR43 00						0	0	HR	2						
	30-55	ms1	10YR44 00						0	0	HR	2		M				
	55-75	lcs	10YR56 00						0	0	HR	2		M				
29	0-30	mc1	10YR43 00						0	0		0						
	30-65	ms1	10YR44 00						0	0		0		M				
	65-100	lms	10YR76 00						0	0		0		G				
30	0-30	ms1	10YR44 00						0	0		0						
	30-75	ms1	10YR54 00						0	0		0		M				
	75-100	lms	10YR56 00						0	0		0		G				
31	0-25	mc1	10YR53 00						0	0		0						
	25-45	sc1	10YR52 00	10YR58	00	C		Y	0	0		0		M				
	45-100	lms	10YR62 00						0	0		0		G				
32	0-30	mc1	10YR44 00						0	0		0						
	30-65	ms1	10YR56 72						0	0		0		M				
	65-100	lms	10YR64 00						0	0		0		G				
33	0-35	hc1	10YR44 00						0	0		0						
	35-50	ms1	10YR72 00						0	0		0		M				
	50-65	lms	10YR56 00						0	0		0		G				

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
34	0-30	mc1	10YR44 00					0	0	0							
	30-40	ms1	10YR72 00					0	0	0							M
	40-60	lms	10YR76 00					0	0	0							G
35	0-25	hc1	10YR53 00					0	0	0							
	25-40	c	10YR51 00 10YR58 00 C					Y	0	0							M
	40-65	lms	10YR72 56 10YR56 00 C					Y	0	0							G
	65-100	lms	10YR71 00					0	0	0							G
36	0-20	hc1	10YR53 00					0	0	0							
	20-45	c	10YR52 00 10YR58 61 C					Y	0	0							M
	45-65	lms	10YR52 00					0	0	0							G
	65-100	lms	10YR72 00					0	0	0							G
37	0-30	hc1	10YR53 00					0	0	0							
	30-75	c	10YR52 00 10YR58 61 C					Y	0	0							P Y Y
	75-100	sc1	10YR51 00					0	0	0							M
38	0-28	mc1	75YR43 00					0	0	0							
	28-50	ms1	75YR44 00					0	0	HR							M
	50-75	ms1	10YR56 46					0	0	HR							M
39	0-28	ms1	75YR43 00					0	0	0							
	28-55	ms1	75YR44 00 75YR46 00 F					0	0	HR							M
	55-80	ms1	10YR64 44 75YR46 58 M					0	0	HR							M
40	0-28	ms1	75YR42 00					0	0	HR							2
	28-50	ms1	75YR44 00 75YR56 00 F					0	0	HR							M
41	0-28	mc1	10YR43 00					0	0	HR							2
	28-40	ms1	10YR63 62 10YR58 00 M					Y	0	0							M
	40-50	ms1	10YR62 00 10YR58 00 M					Y	0	0							M
	50-55	lms	10YR62 00 10YR58 00 M					Y	0	0							G
42	0-30	mc1	10YR43 00					0	0	HR							2
	30-52	lms	10YR63 62					0	0	HR							G
43	0-25	mc1	10YR43 00 10YR56 00 F					0	0	0							
	25-55	ms1	10YR63 62 10YR56 00 M					Y	0	0							M
	55-65	lms	10YR62 00					0	0	HR							G
	65-78	ms1	10YR62 00 10YR56 00 M					Y	0	0							M
44	0-27	mc1	10YR43 00					0	0	HR							2
	27-40	ms1	10YR63 44 10YR56 00 C					Y	0	0							M
	40-60	ms1	10YR44 62 10YR56 00 C					Y	0	0							M
45	0-28	ms1	10YR44 00					0	0	HR							2
	28-50	ms1	75YR44 00					0	0	HR							M
	50-90	lms	75YR44 00					0	0	0							G
	90-120	lms	10YR56 00					0	0	0							G

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
46	0-30	mc1	10YR42 00						0	0	0							
	30-38	mc1	10YR43 42						0	0	0					M		
	38-120	ms1	10YR63 62	10YR56	44	M		Y	0	0	HR	2				M		
47	0-29	hc1	10YR42 51	75YR46	56	C		Y	0	0	0							
	29-45	c	75YR51 00	75YR46	00	M		Y	0	0	0					P	Y	
	45-58	hc1	75YR32 00						0	0	0					M		
	58-78	hc1	75YR52 00	10YR66	00	C		Y	0	0	0					M		
	78-80	ms1	10YR63 62	10YR56	00	C		Y	0	0	0					M		
48	0-20	hc1	10YR31 00						0	0	0							
	20-60	c	10YR51 00	75YR56	00	C		Y	0	0	0					M		
	60-120	zc	10YR62 00	05YR56	00	C		Y	0	0	0					P		Y
49	0-25	mc1	10YR44 00						0	0	0							
	25-50	ms1	10YR54 56						0	0	0					M		
	50-60	lms	10YR72 00						0	0	0					G		
50	0-25	mc1	10YR44 00						0	0	0							
	25-55	ms1	10YR72 56						0	0	0					M		
51	0-25	mc1	10YR44 00						0	0	0							
	25-45	ms1	10YR51 56						0	0	0					M		
	45-100	lms	10YR72 00						0	0	0					G		
52	0-30	mc1	10YR43 00						0	0	0							
	30-50	ms1	10YR56 00						0	0	0					M		
	50-70	lms	10YR72 56						0	0	0					G		
53	0-30	ms1	10YR44 00						0	0	HR	3						
	30-70	lms	75YR44 00						0	0	HR	2				G		
54	0-30	ms1	10YR44 00						0	0	0							
	30-80	lms	10YR46 00						0	0	0					G		
	80-100	ms	10YR58 00						0	0	0					M		
55	0-25	hc1	10YR42 00						0	0	HR	2						
	25-55	ms1	10YR44 00						0	0	HR	2				M		
	55-60	c	10YR42 00	10YR56	00	F			0	0	0					M		
	60-120	lms	10YR58 00						0	0	HR	2				G		
56	0-29	ms1	75YR43 00						0	0	HR	1						
	29-70	ms1	75YR46 00						0	0	HR	3				G		
	70-120	ms1	75YR46 63	75YR58	00	C		Y	0	0	HR	5				G		
57	0-20	hc1	10YR33 00						0	0	0							
	20-120	zc	10YR51 00	05YR58	00	C		Y	0	0	0					P		Y

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
58	0-25	mc1	10YR44 00					0	0	0							
	25-45	ms1	10YR44 72					0	0	0				M			
	45-60	lms	10YR72 00					0	0	0				G			
59	0-25	mc1	10YR44 00					0	0	0							
	25-50	ms1	10YR61 00					0	0	0				M			
	50-90	lms	10YR54 51					0	0	0				G			
	90-110	sc1	10YR56 00					0	0	0				M			
60	0-3	mc1	10YR43 00					0	0	0							
	3-65	ms1	10YR52 58					0	0	0				M			
	65-80	lms	10YR72 00					0	0	0				G			
61	0-30	ms1	10YR44 00					0	0	HR	2						
	30-50	ms1	75YR44 00					0	0	HR	1			M			
	50-100	lms	10YR56 00					0	0	HR	2			G			
62	0-30	ms1	10YR44 00					0	0	HR	2						
	30-55	ms1	75YR44 00					0	0		0			G			
	55-120	lms	10YR56 00					0	0		0			G			
63	0-30	ms1	10YR43 00					0	0	HR	2						
	30-40	ms1	75YR43 00					0	0	HR	2			G			
	40-60	ms1	75YR43 00					0	0	HR	10			M			
	60-80	ms1	75YR43 00					0	0	HR	2			G			
	80-88	ms1	75YR43 00					0	0	HR	10			M			
	88-120	lms	10YR56 00					0	0	HR	5			G			
64	0-30	ms1	10YR43 00					0	0	HR	2						
	30-60	ms1	75YR43 00					0	0	HR	8			M			
	60-120	ms1	75YR43 00					0	0	HR	1			G			
65	0-30	hc1	10YR53 00					0	0		0						
	30-80	c	10YR52 00	10YR58	61	M	Y	0	0		0			P	Y		Y
	80-100	c	10YR61 00	10YR58	00	M	Y	0	0		0			P	Y		Y
66	0-30	ms1	10YR44 00					0	0		0						
	30-45	ms1	10YR46 00					0	0		0			M			
	45-55	sc1	10YR51 00	10YR58	00	C	Y	0	0		0			M			
	55-120	c	10YR51 00	05YR58	00	C	Y	0	0		0			P			Y
67	0-30	ms1	10YR44 00					0	0	HR	5						
	30-60	ms1	75YR44 00					0	0	HR	1			G			
	60-80	lms	75YR44 00					0	0	HR	5			G			
68	0-29	ms1	10YR43 00					0	0	HR	2						
	29-65	ms1	75YR43 00					0	0	HR	2			G			
	65-120	ms1	75YR44 00					0	0		0			G			

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED	---STONES---			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL	CALC
69	0-30	msl	75YR43 00						0	0	HR	1						
	30-60	msl	75YR44 00						0	0	HR	3		G				
	60-65	lms	75YR44 00						0	0	HR	20		M				
70	0-30	hc1	10YR43 00						0	0		0						
	30-45	c	10YR52 00	10YR58	61	M			Y	0	0	0		P	Y		Y	
	45-100	c	10YR72 00	10YR58	00	M			Y	0	0	0		P	Y		Y	
71	0-30	msl	10YR44 00						0	0		0						
	30-60	msl	10YR56 00						0	0	HR	0		G				
	60-90	lms	10YR56 00						0	0		0		G				
	90-120	msl	10YR61 00	10YR58	00	C			Y	0	0	HR	3		G			
72	0-30	msl	10YR44 00						0	0		0						
	30-70	msl	10YR56 00	10YR58	00	C			0	0		0		G				
	70-120	sc1	10YR56 00	10YR58	00	C			0	0		0		M				
73	0-28	msl	10YR43 00						0	0		0						
	28-50	msl	75YR43 00						0	0		0		G				
	50-77	msl	10YR56 00						0	0		0		G				
	77-120	c	25Y 51 00	10YR66	00	M			Y	0	0	0		P	Y		Y	
74	0-30	msl	75YR43 00						0	0		0						
	30-50	lcs	75YR44 00						0	0	HR	10		M				
	50-68	lcs	75YR44 00						0	0	HR	2		M				
75	0-35	hc1	10YR42 00	10YR56	00	F			0	0		0						
	35-65	c	25Y 51 00	25YR56	00	M			Y	0	0	0		P	Y		Y	
	65-120	c	25Y 51 00	25YR58	00	M			Y	0	0	0		P	Y		Y	
76	0-35	mc1	10YR43 00						0	0	HR	1						
	35-45	mc1	25Y 53 63	75YR58	00	C			Y	0	0	HR	1		M			
	45-55	hc1	10YR53 52	75YR68	00	C			Y	0	0	HR	1		M			
	55-85	msl	25Y 63 00	75YR68	00	C			Y	0	0		0		G			
	85-105	sc1	25 Y63 00	75YR68	00	C			Y	0	0		0		M			
	105-120	lms	25Y 63 00	75YR68	00	C			Y	0	0		0		G			
77	0-30	mc1	10YR43 00						0	0	HR	1						
	30-50	hc1	25Y 53 00	10YR56	00	F			0	0	HR	1		M				
	50-70	sc1	25Y 64 00	75YR46	00	C			Y	0	0	HR	5		M			
	70-120	msl	25Y 64 00	75YR46	00	C			Y	0	0	HR	5		G			
78	0-30	mc1	10YR43 00	10YR56	00	C			0	0	HR	1						
	30-45	msl	10YR64 00	10YR56	00	C			Y	0	0		0		G			
	45-55	sc1	10YR64 00	10YR56	00	C			Y	0	0		0		M			
	55-90	msl	10YR64 00	75YR56	00	C			Y	0	0		0		G			
79	0-25	c	10YR42 00	10YR56	00	C			Y	0	0		0					
	25-120	c	25Y 63 00	75YR56	00	M			Y	0	0		0		P			Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
80	0-20	hc1	10YR42 00						0	0	0						
	20-35	hc1	25Y 51 00	10YR56 00	M			Y	0	0	0		M				
	35-70	c	25Y 51 00	75YR58 00	M			Y	0	0	0		P	Y		Y	
	70-120	c	25Y 61 00	75YR58 00	M			Y	0	0	0		P	Y		Y	
81	0-28	mc1	10YR43 00						0	0	HR	1					
	28-53	hc1	10YR44 00	10YR58 00	F		00MNO0 00		0	0	HR	1		M			
	53-65	lms	10YR54 00	10YR58 00	C		00MNO0 00	Y	0	0	HR	1		G			
	65-85	ms1	10YR53 00	75YR46 00	C		00MNO0 00	Y	0	0	HR	1		G			
	85-110	mc1	25Y 63 00	75YR46 00	M		00MNO0 00	Y	0	0	HR	1		M			
	110-120	c	25Y 46 00	75YR46 00	C		00MNO0 00	Y	0	0	HR	1		M			
82	0-32	mc1	10YR43 00						0	0	HR	1					
	32-43	hc1	10YR53 00	10YR58 00	F		00MNO0 00		0	0	HR	1		M			
	43-55	hc1	10YR53 63	75YR58 00	C		00MNO0 00	Y	0	0	HR	1		M			
	55-70	ms1	25Y 63 00	75YR58 00	C		00MNO0 00	Y	0	0	HR	1		G			
	70-85	lms	25Y 63 00	75YR58 00	C			Y	0	0	HR	1		G			
	85-120	ms1	25Y 63 00	75YR58 00	C		00MNO0 00	Y	0	0	HR	1		G			
83	0-30	hc1	25Y 53 00	75YR56 00	C			Y	0	0	0						
	30-120	c	25Y 62 00	75YR56 00	M			Y	0	0	0		P			Y	
84	0-35	c	10YR42 53	10YR56 00	C			Y	0	0	0						
	35-120	c	25Y 72 62	75YR56 00	M			Y	0	0	0		P			Y	
85	0-37	c	10YR42 53	10YR56 00	C			Y	0	0	0						
	37-120	c	25Y 62 63	75YR56 00	M			Y	0	0	0		P			Y	
86	0-25	mc1	10YR43 00						0	0	HR	1					
	25-48	mc1	10YR53 63	75YR58 00	C		10YR72 00	Y	0	0	HR	5		M			
	48-65	ms1	10YR63 00	75YR46 00	C		10YR71 00	Y	0	0	HR	5		G			
87	0-25	mzc1	10YR41 00	10YR58 00	C			Y	0	0	0						
	25-30	hc1	10YR41 00	10YR58 00	C		00MNO0 00	Y	0	0	0		M				
	30-45	hc1	25Y 60 00	75YR58 00	C		00MNO0 00	Y	0	0	0		M				
	45-80	c	25Y 60 00	75YR58 00	M		00MNO0 00	Y	0	0	0		P	Y		Y	
88	0-36	hc1	10YR42 53	10YR56 00	C			Y	0	0	0						
	36-120	c	25Y 72 62	75YR56 00	M			Y	0	0	0		P			Y	
89	0-36	hc1	10YR42 53	10YR56 00	C			Y	0	0	0						
	36-120	c	25Y 72 62	75YR56 00	M			Y	0	0	0		P			Y	