

A1  
WEST SUSSEX MINERALS PLAN  
SITE 12: FUNTINGTON WEST  
AGRICULTURAL LAND CLASSIFICATION  
ALC MAP & REPORT  
OCTOBER 1993

**WEST SUSSEX MINERALS PLAN  
SITE 12: FUNTINGTON WEST  
AGRICULTURAL LAND CLASSIFICATION REPORT**

**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 45 hectares of land relating to Site 12 to the north of Common Road, Funtington near Chichester was surveyed in October 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 44 soil auger borings and 3 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 long-term 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 land use on the site was grass ley.

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 1:5,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous survey information.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>%of Site</u>	<u>% of Agricultural Area</u>
3a	19.9	44.0	46.7
3b	22.7	50.2	53.3
Woodland	2.6	5.8	100% (42.6 ha)
Total	45.2	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 Subgrades 3a and 3b with soil droughtiness as the key limitation. Soils are typically medium clay and silty clay loams which become heavier with depth. The area shown as Subgrade 3a experiences a moderate droughtiness limitation: there is insufficient available water in the profile to qualify for a higher grade given the presence of moderately stony subsoils. The area shown as Subgrade 3b is more severely limited due to the presence of very stony topsoils and subsoils. The high stone volumes significantly restrict profile available water for plant growth and restrict the range of crops that can tolerate such conditions. Certain areas of the site also show evidence of a topsoil stone content limitation.

## 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 the overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (degree days Jan-June), 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.

### Table 2 : Climatic Interpolations

Grid Reference :	SU 793 085
Altitude (m) :	40
Accumulated Temperature (days) :	15041
Average Annual Rainfall (mm) :	847
Field Capacity (days) :	179
Moisture Deficit, Wheat (mm) :	109
Moisture Deficit, Potatoes (mm) :	104
Overall Climatic Grade :	1

## 3.0 Relief

3.1 The site is slightly undulating lying at an altitude in a range between 35 and 40 metres. On no part of the site does relief or gradient pose any limitation to agricultural use.

## 4.0 Geology and Soil

4.1 The relevant geological sheet for the site (BGS Sheet 317: Chichester 1957) shows the underlying geology to be River and Valley Gravels with Coombe Deposits.

4.2 The published soils information for the area (SSEW Sheet 6: Soils of South East England 1983) shows the soils on the site to be of the Charity 1 association. These are described as well drained fine silty and fine silty over clayey soils, locally very flinty, some shallow over flint gravel. Detailed field examination confirms this, particularly the locally shallow and flinty nature of the soils on some parts of the site.

## 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.

5.3 Subgrade 3a: Approximately 20 hectares of land on the site has been classified as Subgrade 3a, good quality agricultural land, with soil droughtiness as the main limitation. Profiles typically comprise medium clay loam or medium silty clay loam topsoils. Profiles become heavier and more stony with depth. Two soil inspection pits (Pits 2 and 3) were dug in this mapping unit, as a number of the soil augerings proved to be impenetrable in the upper and lower subsoils. Pit 2 was dug to investigate an area of deep and moderately stony soils in the north west of the site. The pit showed the existence of a medium clay loam topsoil containing 20% flints, and upper subsoil containing 10 % total flints by volume down to 52cm. This overlies a heavy clay loam subsoil containing 25% total flints by volume which extends to 78 cm. Below this there is a clay lower subsoil containing 30% total flints by volume which proved impenetrable to digging at 110 cm. Throughout the profile there is no evidence of impeded drainage, (Wetness Class I is thereby assigned), or any restrictions on rooting depth. Technically Pit 2 has a resultant classification of Grade 2, although variations in stone contents and subsoil textures means that Subgrade 3a is more appropriate for these soils. Pit 3 in this mapping unit illustrates the more stony Subgrade 3a land on the site. The profile consists of a medium clay loam topsoil with 25% total flints by volume overlying a heavy clay loam upper subsoil with 33% flints continuing into a clay subsoil containing 40 % total flints by volume which became impenetrable to digging at 80 cm, although rooting was evident at this depth. The impenetrable nature of this horizon meant that it was necessary to assume that roots could penetrate a further 20 cm into the profile to a depth of 100cm. However, the combination of soil textures, profile stone contents, substructural conditions and the local climatic regime means that these soils can be classified as no better than Subgrade 3a. There is a moderate restriction on the profile available water in these soils and the range of crops that can tolerate such conditions.

5.4 Subgrade 3b: The remainder of agricultural land on the site has been classified as Subgrade 3b, moderate quality land. The soils in this mapping unit show a significant droughtiness limitation. The majority of soil auger inspections in these soils proved to be impenetrable below the topsoil. Pit 1 was dug to investigate the soil conditions below this level, and showed the presence of a very stony subsoil. A medium silty clay loam topsoil extends to 30cm and contains 42% flints (20% > 2cm). A similar texture prevails in the subsoil, the upper subsoil containing 56% total flints by volume and extends to 45cm, the lower subsoil contains 59 % total flints by volume and proved impenetrable to digging at 65cm. The impenetrable nature of these soils means that assumptions were made regarding stoniness below this level and rooting depths. The nature of the underlying geology has made it possible to assume that profiles will not become any less stony below this level. It has been assumed that roots can penetrate at least a further 20cm into the stony subsoil meaning that there is sufficient available water in the profile to qualify for Subgrade 3b. Furthermore, the topsoil contained 20% flints which are over 2cm in size which leads to a topsoil stoniness limitation to Subgrade 3b only. This results from the fact that these can increase production costs by causing extra wear and tear to implements and tyres. Also crop quality and establishment in stony soils may be decreased as a result of, for example, the distortion of root crops or reduced plant populations in precision-drilled crops.

5.6 The areas marked as Non-agricultural include woodland on the site.

ADAS REFERENCE : 4203/202/93  
MAFF REFERENCE : EL42/00228

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 (1957), Sheet No.317, Chichester, 1:50,000
- \* 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 (1982), Sheet No.6, Soils of South East England, 1:250,000, 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 pedes 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 12                      Pit Number : 2P

Grid Reference: SU78890878    Average Annual Rainfall : 847 mm  
 Accumulated Temperature : 1504 degree days  
 Field Capacity Level : 179 days  
 Land Use : Ley  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR43 00	3	20		WCSAB
30- 52	MCL	10YR46 00	0	10		MCSAB
52- 78	HCL	75YR46 00	0	25		MCSAB
78-110	C	10YR58 00	0	30		WCSAB
110-120	C	10YR58 00	0	45		

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

Drought Grade : 2                      APW : 115mm    MBW : 6 mm  
 APP : 98 mm    MBP : -6 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : WSUSSEX MINS SITE 12      Pit Number : 3P

Grid Reference: SU79550853    Average Annual Rainfall : 847 mm  
Accumulated Temperature : 1504 degree days  
Field Capacity Level : 179 days  
Land Use : Ley  
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR42 00	14	25		WKCSAB
30- 60	HCL	10YR44 54	0	33		
60-100	C	75YR58 00	0	40		

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

Drought Grade : 3A      APW : 90 mm    MBW : -19 mm  
APP : 84 mm    MBP : -20 mm

FINAL ALC GRADE : 3A  
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRONT	GLEY	SPL	CLASS	GRADE	AP	MB	AP					
1	SU78900880	LEY	1	2	117	8	115	11	2				DR	2	
1P	SU79110848	LEY	1	2	66	-43	65	-39	3B				ST	3B	PIT TO 65 DR
2	SU79000880	LEY	1	2	94	-15	103	-1	3A				DR	3A	
2P	SU78890878	LEY	1	2	115	6	98	-6	2				DR	2	PIT DUG TO 110
3	SU79200880	LEY	1	2	96	-13	105	1	3A				DR	3A	SEE 2P
3P	SU79550853	LEY	1	2	90	-19	84	-20	3A				DR	3A	PIT DUG TO 80
4	SU78900880	LEY	1	2	55	-54	55	-49	4				DR	4	IMPEN 50 SEE3P
5	SU79000870	LEY	1	2	76	-33	76	-28	3B				DR	3B	IMPEN 50 SEE3P
6	SU79000870	LEY	1	2	88	-21	92	-12	3B				DR	3B	IMPEN 60 SEE3P
7	SU79100870	LEY	1	2	63	-46	63	-41	3B				DR	3B	IMPEN 40 SEE3P
9	SU79600870	LEY	1	2	78	-31	79	-25	3B				DR	3B	IMPEN 50 SEE3P
10	SU79700870	LEY	1	2	88	-21	93	-11	3B				DR	3B	IMPEN 60 SEE3P
11	SU78800860	LEY	1	2	53	-56	53	-51	4				DR	4	IMPEN 35 SEE3P
12	SU78900860	LEY	1	2	72	-37	72	-32	3B				DR	3B	IMPEN 50 SEE3P
13	SU79000860	LEY	1	2	103	-6	98	-6	3A				DR	3A	IMPEN 90 SEE2P
14	SU79100860	LEY	1	2	72	-37	72	-32	3B				DR	3A	IMPEN 45 SEE3P
15	SU79200860	LEY	1	2	72	-37	72	-32	3B				DR	3B	IMPEN 45 SEE3P
16	SU79400860	LEY	1	2	104	-5	110	6	3A				DR	3A	IMPEN 70 SEE3P
18	SU79600860	LEY	1	2	75	-34	75	-29	3B				DR	3B	IMPEN 45 SEE3P
19	SU79700860	LEY	1	2	76	-33	76	-28	3B				DR	3B	IMPEN 46 SEE3P
20	SU78800850	LEY	1	2	59	-50	59	-45	3B				DR	4	IMPEN 35 SEE1P
21	SU78900850	LEY	1	2	52	-57	52	-52	4				DR	4	IMPEN 30 SEE1P
22	SU79000850	LEY	1	2	74	-35	74	-30	3B				DR	3B	IMPEN 45 SEE1P
23	SU79100850	LEY	1	2	41	-68	41	-63	4				DR	4	IMPEN 25 SEE1P
24	SU79200850	LEY	1	2	51	-58	51	-53	4				DR	4	IMPEN 30 SEE1P
25	SU79300850	LEY	1	2	35	-74	35	-69	4				DR	4	IMPEN 20 SEE1P
26	SU79400850	LEY	1	2	61	-48	61	-43	3B				DR	3B	IMPEN 40 SEE3P
27	SU79500850	LEY	1	2	88	-21	91	-13	3B				DR	3B	IMPEN 55 SEE3P
28	SU79600850	LEY	1	2	78	-31	83	-21	3B				DR	3B	IMPEN 60 SEE3P
29	SU79700850	LEY	1	2	76	-33	76	-28	3B				DR	3B	IMPEN 48 SEE3P
30	SU79000840	LEY	1	2	59	-50	59	-45	3B				DR	3B	IMPEN 35 SEE1P
31	SU79100840	LEY	1	2	50	-59	50	-54	4				DR	4	IMPEN 30 SEE1P
32	SU79200840	LEY	1	2	68	-41	68	-36	3B				DR	4	IMPEN 40 SEE1P
33	SU79300840	LEY	1	2	43	-66	43	-61	4				DR	4	IMPEN 25 SEE1P
34	SU79400840	LEY	1	2	58	-51	58	-46	4				DR	4	IMPEN 35 SEE1P
35	SU79500840	LEY	1	2	53	-56	53	-51	4				DR	4	IMPEN 30 SEE1P
36	SU79600840	LEY	1	2	50	-59	50	-54	4				DR	4	IMPEN 30 SEE1P
37	SU79300830	LEY	1	2	52	-57	52	-52	4				DR	4	IMPEN 30 SEE1P
38	SU79400830	LEY	1	2	88	-21	91	-13	3B				DR	3B	IMPEN 55 SEE1P
39	SU79500836	LEY	1	2	68	-41	68	-36	3B				DR	3B	IMPEN 35 SEE1P
40	SU79600830	LEY	1	2	69	-40	69	-35	3B				DR	3B	IMPEN 35 SEE1P
41	SU79700830	LEY	1	2	125	16	119	15	2				DR	2	IMPEN 95 SEE2P

-----

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS	
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP						MB
42	SU79300820	LEY			1	2	67	-42	67	-37	3B			DR	3B	IMPEN 35 SEE1P
43	SU79400820	LEY			1	2	53	-56	53	-51	4			DR	4	IMPEN 30 SEE1P
44	SU79500820	LEY			1	2	45	-64	45	-59	4			DR	4	IMPEN 25 SEE1P
45	SU79600820	LEY			1	2	53	-56	53	-51	4			DR	4	IMPEN 30 SEE1P
46	SU79700820	LEY			1	2	82	-27	82	-22	3B			DR	3B	IMPEN 50 SEE1P

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----				STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH	TOT		STR	POR	IMP	SPL	CALC
1	0-35	mc1	10YR43 00						2	0	HR	5						
	35-60	mc1	10YR44 00						0	0	HR	2			M			
	60-80	hc1	75YR46 00						0	0	HR	2			M			
	80-85	hc1	75YR46 00						0	0	HR	15			M			
1P	0-30	mzc1	10YR42 00						20	0	HR	42			FR			
	30-45	mzc1	10YR64 00						0	0	HR	56			FR M			
	45-85	mzc1	10YR66 00						0	0	HR	59			FR M			
2	0-35	mc1	10YR43 00						2	0	HR	5						
	35-60	hc1	10YR44 00						0	0	HR	10			M			
	60-65	c	75YR46 00						0	0	HR	15			M			
2P	0-30	mc1	10YR43 00						3	0	HR	20	WCSAB		FR			
	30-52	mc1	10YR46 00						0	0	HR	10	MCSAB		FR M			
	52-78	hc1	75YR46 00						0	0	HR	25	MCSAB		FR M	Y		
	78-110	c	10YR58 00						0	0	HR	30	WCSAB		FR P	Y		
	110-120	c	10YR58 00						0	0	HR	45			FM M	Y		
3	0-35	mc1	10YR43 00						2	0	HR	5						
	35-60	hc1	10YR44 00						0	0	HR	5			M			
	60-65	c	75YR46 00						0	0	HR	15			M			
3P	0-30	mc1	10YR42 00						14	0	HR	25	WKCSAB		FR		Y	
	30-60	hc1	10YR44 54						0	0	HR	33			FM M		Y	
	60-100	c	75YR58 00						0	0	HR	40			FM M			
4	0-27	mzc1	10YR43 00						4	0	HR	13						
	27-35	mc1	10YR44 43						0	0	HR	25			M			
5	0-27	mc1	10YR43 00						4	0	HR	9						
	27-50	mc1	10YR54 00						0	0	HR	15			M			
6	0-28	mzc1	10YR42 00						3	0	HR	8						
	28-50	mc1	10YR44 00						0	0	HR	12			M			
	50-60	hc1	10YR56 00						0	0	HR	30			M			
7	0-30	mzc1	10YR43 00						4	0	HR	12						
	30-40	mc1	10YR43 44						0	0	HR	25			M			
9	0-29	mc1	10YR43 00						3	0	HR	10						
	29-52	mc1	10YR54 00						0	0	HR	15			M			
10	0-30	mc1	10YR43 00						2	0	HR	6						
	30-40	mc1	10YR43 44						0	0	HR	10			M			
	40-60	mc1	10YR44 00						0	0	HR	15			M			
11	0-29	mc1	10YR43 00						4	0	HR	12						
	29-35	mc1	10YR44 43						0	0	HR	35			M			

-----

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
12	0-28	mc1	10YR43 00					4	0	HR	13						
	28-40	mc1	10YR44 00					0	0	HR	15						M
	40-50	c	10YR56 00					0	0	HR	30						M
13	0-28	mzc1	10YR43 00					5	0	HR	15						
	28-50	mc1	10YR54 00					0	0	HR	25						M
	50-55	mc1	10YR54 00	10YR58 00	F			0	0	HR	25						M
	55-78	hc1	75YR56 00	00MN00 00	F			0	0	HR	20						M
	78-90	c	75YR56 00					0	0	HR	20						M
14	0-38	mc1	10YR42 00					5	0	HR	10						
	38-45	mc1	10YR44 00					0	0	HR	15						M
15	0-35	mc1	10YR42 00					7	0	HR	10						
	35-45	mzc1	10YR44 00					0	0	HR	15						M
16	0-35	mc1	10YR43 00					2	0	HR	5						
	35-60	mc1	10YR44 00					0	0	HR	10						M
	60-75	hc1	75YR46 00					0	0	HR	15						M
18	0-38	mc1	10YR43 00					2	0	HR	5						
	38-45	mc1	10YR44 00					0	0	HR	10						M
19	0-35	mc1	10YR43 00					2	0	HR	5						
	35-45	mc1	10YR44 00					0	0	HR	10						M
	45-46	mc1	10YR44 00					0	0	HR	10						M
20	0-25	mzc1	10YR43 00					3	0	HR	8						
	25-35	mzc1	10YR54 00					0	0	HR	12						M
21	0-30	mzc1	10YR43 00					5	0	HR	10						
22	0-35	mzc1	10YR43 00					6	0	HR	11						
	35-45	mzc1	10YR54 00					0	0	HR	18						M
23	0-25	mzc1	10YR43 00					8	0	HR	15						
24	0-30	mzc1	10YR43 00					8	0	HR	12						
25	0-20	mzc1	10YR44 00					4	0	HR	8						
26	0-30	mc1	10YR42 00					3	0	HR	10						
	30-40	mc1	10YR43 44					0	0	HR	25						M
27	0-35	mc1	10YR43 00					2	0	HR	5						
	35-55	mzc1	10YR44 00					0	0	HR	10						M
28	0-30	mc1	10YR42 00					5	0	HR	15						
	30-60	mc1	10YR44 00					0	0	HR	25						M

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- PED			----STONES-----			STRUCT/ CONSIST	SUBS							
				COL	ABUN	CONT	COL.	GLE	>2		>6	LITH	TOT	STR	POR	IMP	SPL	CALC
29	0-29	mc1	10YR42 00						2	0	HR	6						
	29-48	mc1	10YR44 00						0	0	HR	12						M
30	0-30	mzc1	10YR43 00						4	0	HR	9						
	30-35	hzc1	10YR56 00						0	0	HR	15						M
31	0-25	mzc1	10YR43 00						5	0	HR	10						
	25-30	mzc1	10YR54 00						0	0	HR	15						M
32	0-35	mzc1	10YR43 00						6	0	HR	10						
	35-40	mzc1	10YR54 00						0	0	HR	15						M
33	0-25	mzc1	10YR44 00						3	0	HR	10						
34	0-25	mzc1	10YR43 00						4	0	HR	10						
	25-35	mzc1	10YR54 00						0	0	HR	12						M
35	0-30	mzc1	10YR43 00						2	0	HR	8						
36	0-30	mc1	10YR43 00						2	0	HR	7						
37	0-30	mzc1	10YR43 00	10YR58 00	F				4	0	HR	10						
38	0-30	mzc1	10YR44 00						2	0	HR	8						
	30-55	mzc1	10YR54 00						0	0	HR	11						M
39	0-35	mzc1	10YR43 00						4	0	HR	10						
	35-40	mzc1	10YR56 00						0	0	HR	12						M
40	0-35	mzc1	10YR43 00						4	0	HR	7						
	35-40	mzc1	10YR56 00						0	0	HR	15						M
41	0-30	mzc1	10YR43 00						2	0	HR	7						
	30-45	mzc1	10YR54 00						0	0	HR	8						M
	45-70	hzc1	10YR56 00						0	0		0						M
	70-95	c	75YR56 00						0	0	HR	2						M
42	0-25	mzc1	10YR44 00						3	0	HR	7						
	25-40	mzc1	10YR54 00						0	0	HR	12						M
43	0-30	mzc1	10YR43 00						2	0	HR	7						
44	0-25	mzc1	10YR43 00						4	0	HR	6						
45	0-30	mzc1	10YR44 00						4	0	HR	7						
46	0-30	mzc1	10YR43 00						4	0	HR	10						
	30-50	mzc1	10YR54 00						0	0	HR	10						M