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LAND AT SITES 10, 11 and 12 MAPLEDURWELL, BASINGSTOKE, HAMPSHIRE

Agricultural Land Classification
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Resource Planning Team
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AGRICULTURAL LAND CLASSIFICATION REPORT

LAND AT SITES 10, 11 AND 12 - MAPLEDURWELL, BASINGSTOKE, HAMPSHIRE

INTRODUCTION

1. This summary report presents the findings of a reconnaissance Agricultural Land Classification (ALC) survey of 421.6 ha of land on the southern side of the M3 motorway at Mapledurwell to the east of Basingstoke. The survey was carried out in August 1996.

2. The survey was commissioned by Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit (Reading) in connection with the Basingstoke and Deane Borough Local Plan Review. This survey supersedes any previous ALC surveys on this land.

3. The work was conducted under sub-contracting arrangements by NA Duncan & Associates, and was supervised by members of the Resource Planning Team in the Guildford Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the majority of the land was in arable cropping, with the principle crops being cereals, both wheat and barley, the majority of which had been harvested. Small areas of oilseed rape, linseed and peas also occurred toward the central and eastern part of the area. Grass leys used mainly for sheep grazing were extensive in the north western part of the site and also toward the southern end. A number of areas of Other Land have been mapped which comprise areas of woodland, farm buildings and residential land

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10, 000 it is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

7. The fieldwork was conducted at an average density of approximately 1 boring per 4 hectares. A total of 103 borings and five soil pits were described

8. The majority of the site comprises shallow soils over chalk, with deeper soils overlying clay-with-flints occurring widely over the northern area and also at the southern end of the site. The dry valley features on the site also comprise deeper fine loamy soils. The deeper soils developed on the clay-with-flints and also the deeper soils infilling the dry valleys have been mapped as Grade 2, very good quality agricultural land, with the main limitation being due to a slight droughtiness restriction. The chalk land has been mapped as Subgrades 3a and 3b due to a droughtiness limitation, with the majority of the area comprising Subgrade 3a, good quality agricultural land. Moderate quality agricultural land (Subgrade 3b) is confined to

the eastern edge of the site where the chalk was found to be harder and the rooting depth more restricted, resulting in a more severe droughtiness limitation. Over the remainder of the area the underlying chalk was found to be relatively soft and, despite shallow soil depths, plant roots were found to extend approximately 0.5 m into the chalk. This provides larger amounts of available water and reduces the effect of the droughtiness limitation, thereby restricting the land to Subgrade 3a. A small area of Subgrade 3b has also been mapped in the north west corner of the site where poorly drained alluvial soils were mapped in the valley bottom..

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
2	166.8	39.6	42.9
3a	200.0	47.4	51.5
3b	21.6	5.1	5.6
Other Land	33.2	7.9	-
Total surveyed area	388.4	-	100.0
Total site area	421.6	100.0	-

FACTORS INFLUENCING ALC GRADE

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. Due to the size of the site (420 ha) and the altitudinal variation (83-123 m), the site was divided into four climatic zones, based on altitude, to take account of variations across the site and to help determine whether climate had any significant effect on the overall grading.

11. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Zone A	Zone B	Zone C	Zone D
Grid reference	N/A	SU 680 518	SU 672 510	SU 692 506	SU 674 503
Altitude	m, AOD	85	95	105	115
Accumulated Temperature	day°C (Jan-June)	1436	1425	1414	1403
Average Annual Rainfall	mm	758	773	776	786
Field Capacity Days	days	164	167	167	169
Moisture Deficit, Wheat	mm	103	101	101	98
Moisture Deficit, Potatoes	mm	95	92	91	88

12 The four climatic interpolations show that there is relatively little difference in values despite the range of altitude and geographical spread. It was therefore decided to use the values for dataset B (which were the average figures for the site), when working out available water values for the individual observations.

13. 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.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

15. The combination of rainfall and temperature at this site mean that under this warm and relatively moist climate, wetness and workability limitations may be enhanced on the heavier textured soils. In addition soils will need a moderately high available water capacity to avoid droughtiness limitations. There is however no overall climatic limitation in this area.

Site

16. The altitude of the site ranges from approximately 80 m AOD at the northern end, adjacent to the M3 motorway, rising to 123 m AOD at the southern end. The site is dissected by a number of dry valley features. Gradients on the site are generally relatively gentle in the range of 0-6°, with the majority of the land being less than 4°. There are therefore no site factors which are limiting to the ALC grading of the site.

Geology and soils

17. The published geological information for the area (BGS, 1981) shows the majority of the site to be underlain by Upper Chalk. Two small areas of Clay-with-flints have been mapped, one at the northern end adjacent to Mapledurwell, with the other smaller area at the south, near Tunworth Down House. The valley which crosses the north western corner of the site has been mapped as Low Level Terrace Deposits (Valley Gravels) with alluvium in the bottom.

18. There is no detailed soil survey map for the area, but the reconnaissance soil map (SSEW, 1983) shows the area principally to comprise soils of the Carstens association with soils of the Andover 1 association around the northern, eastern and western edges of the site. The soils of the Carstens association are described as well drained fine silty over clayey, clayey and fine silty soils which are developed on Plateau drift and Clay-with-flints. These soils are often very flinty. The soils of the Andover 1 association are described as shallow well drained calcareous silty soils over chalk on the slopes and crests, with deep calcareous and non calcareous fine silty soils in the valley bottoms.

AGRICULTURAL LAND CLASSIFICATION

19 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix III.

Grade 2

21. The land at the northern end of the site, together with land in the dry valleys and the higher land at the south of the site, has been mapped as Grade 2, very good quality agricultural land. The soils in these areas typically comprise a dark brown, medium silty clay loam or medium clay loam topsoil overlying a brown, heavy clay loam or heavy silty clay loam upper subsoil. Below 50-70 cm depth, the lower subsoil is typically a strong brown clay, becoming a sandy clay or clay loam at depth. Stone contents in these soils are variable, but topsoils are typically in the range of 4-7% flints, by volume, whilst the upper subsoils range from 5-30% flints and hence are often impenetrable to the auger. Soil pits 3 and 4 show that the stone content of the lower subsoil clay is typically 25% flints. In many profiles the lower subsoil clay shows evidence of minor waterlogging with the presence of few manganiferrous concretions or staining on ped faces. The two soil pits (pits 3 and 4) show the lower subsoil clay horizon to be moderately well structured, but the material beneath the clay to be poorly structured and slowly permeable. These soils therefore are typically assessed as Wetness Class I or II (see Appendix II). The moderately well drained profiles (Wetness Class II) therefore have a minor wetness and workability limitation restricting the land to Grade 2.

22. Moisture balance calculations indicate that in most of the profiles, and especially the more stony variants, there is a minor droughtiness limitation restricting the land to Grade 2. There are, however, some profiles where the stone content is relatively low and there is no evidence of waterlogging and, thus, there are no limitations to the agricultural use of the land, resulting in a Grade 1 classification. These profiles however tend to be scattered and do not comprise an area large enough to be mapped at this scale and as such all this land has been mapped as Grade 2.

Subgrade 3a

23. Much of the land on the higher ground has been classified as Subgrade 3a, good quality agricultural land, with soil droughtiness being the main limitation. Soils within this mapping unit tend to be relatively shallow overlying soft chalk.

24. A typical soil profile has a strongly calcareous medium silty clay loam, medium clay loam or occasionally a heavy silty clay loam topsoil overlying a thin medium or heavy silty clay loam subsoil, which in turn overlies soft fragmented chalk at 35-50 cm depth. In some areas especially around Blackdown Farm, there is no subsoil horizon with the topsoil directly overlying the fragmented chalk at 25-35 cm depth. Stone contents vary across the site and are dependent on the depth to the underlying chalk. Where the soil profile has a subsoil horizon, then the topsoil typically is slightly stony with 4-5% flints, but where the topsoil directly overlies the chalk then the topsoil may contain approximately 10% chalk fragments in addition to the flints. The subsoil horizon where present is generally very chalky (20-50% chalk). The soils are typically free draining Wetness Class I.

25. The principle limitation associated with these soils is droughtiness, the severity of the limitation being governed by the depth to which roots can penetrate the chalk strata to extract moisture. Two soil pits (pits 1 and 2) were dug to investigate the depth to which the roots

exploited the chalk; these pits representing profiles with and without a subsoil horizon. In both soil pits the underlying chalk was found to be relatively soft, comprising hard fragments surrounded by very soft material and as such roots were found to extend to 80-85 cm depth. Moisture balance calculations therefore indicated that both soil pits were moderately droughty for the deeper rooting crops. This droughtiness limitation may affect the level and consistency of crop yields and as such a classification of Subgrade 3a is appropriate.

26. In addition to the soils described above, a few isolated profiles with heavy textures overlying chalk at depth were identified. These soils have a heavy clay loam or clay topsoil overlying a reddish brown clay upper subsoil which in turn overlies chalk below 50 cm depth. In some profiles the clay subsoil showed evidence of minor waterlogging with the presence of manganese staining. These soils are assessed as Wetness Class I or II and as such will have a minor wetness and workability restriction limiting the land quality to Subgrade 3a or 3b depending on the topsoil texture. However due to the isolated nature of these soil profiles within the main area of chalk soils, and the scale of mapping employed, they have all been included within the Subgrade 3a mapping unit.

27. Also included within the Subgrade 3a mapping unit are some soils similar to those described above in the Grade 2 description, but which have moderately stony topsoil horizons (10-15% flints). These soils are found in the dry valley which forms the western boundary of the site. This area has been restricted to Subgrade 3a due to the amount of hard stone larger than 2 cm in the topsoil. The presence of this amount of hard stone not only limits the amount of available water in the soil profile, but will also cause excessive wear and tear to equipment and affect the ability to grow root crops satisfactorily, thereby restricting the land to Subgrade 3a.

Subgrade 3b

28. Two areas of Subgrade 3b, moderate quality agricultural land, have been identified. The larger area on the eastern side of the site comprises very shallow soils overlying chalk, whilst the smaller area to the north west of the site in the valley bottom comprises poorly drained alluvial soils.

29. A soil pit (pit 5) was dug in the shallow chalky soils on the eastern side of the site to check the extent of rooting into the chalk strata. Although the soils were similar to the very shallow chalk soils described in paragraph 24 above, the underlying chalk was much harder and less fragmented. Rooting in this chalk therefore was only found to extend to approximately 50-55 cm depth and as such the severity of the droughtiness limitation is greater. This difference is reflected in the cropping, with this area restricted to growing winter barley and grass leys, whilst the land to the west was capable of satisfactory crops of both wheat and barley. This increased droughtiness limitation therefore restricts the land quality to Subgrade 3b.

30. The small area on the north western side of the site in the valley bottom comprises poorly drained (Wetness Class IV/V) alluvial soils overlying waterlogged gravels. The soils are variable but generally have a medium sandy silt loam or medium silty clay loam topsoil overlying a strongly mottled heavy silty clay loam subsoil over gravel. The soils tend to be waterlogged for much of the year restricting the land to permanent grass and as such a classification of Subgrade 3b is appropriate.

SOURCES OF REFERENCE

British Geological Survey (1981) *Sheet No.* 284, *Basingstoke (Solid & Drift).* BGS: London.

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

Met. Office (1989) *Climatological Data for Agricultural Land Classification.* Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet* 6, *South East England* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England* SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

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

Grade 4: Poor Quality Agricultural Land

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

Grade 5: Very Poor Quality Agricultural Land

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

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years.[2]
II	The soil profile is wet within 70 cm depth for 31-90 days in most years **or**, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

[1] The number of days is not necessarily a continuous period.
[2] 'In most years' is defined as more than 10 out of 20 years.

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used.

ARA:	Arable	**WHT:**	Wheat	**BAR**:	Barley
CER:	Cereals	**OAT**:	Oats	**MZE**:	Maize
OSR:	Oilseed rape	**BEN**:	Field Beans	**BRA**:	Brassicae
POT:	Potatoes	**SBT**:	Sugar Beet	**FCD**:	Fodder Crops
LIN:	Linseed	**FRT**:	Soft and Top Fruit	**FLW**:	Fallow
PGR:	Permanent Pasture	**LEY**:	Ley Grass	**RGR**:	Rough Grazing
SCR:		Scrub	**CFW**:		Coniferous Woodland
DCW: Deciduous Wood					
HTH:	Heathland	**BOG**:	Bog or Marsh	**FLW**:	Fallow
PLO:	Ploughed	**SAS**:	Set aside	**OTH**:	Other
HRT:	Horticultural Crops				

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)**: Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT**: Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN**:	Soil erosion risk
EXP:	Exposure limitation	**FROST**:	Frost prone	**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**:	Erosion Risk	**WD**:	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
ZL:	Silt 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 the following 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 using Munsell notation.

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 using Munsell notation.

6. **GLEY:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - One of the following is used.

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

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

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

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

9. **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

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

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. 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

APPENDIX III

SOIL DATA

Contents:

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU679 520	WHT	N	01	000		1	1	000	0	000	0					DR	2	IMP 60
1P	SU677 502	WHT	E	02	000		1	1	105	4	101	9	3A				DR	3A	
2P	SU673 502	WHT	W	02	000		1	1	92	-9	91	-1	3A				DR	3A	
3	SU681 520	WHT	N	01	000		1	1	000	0	000	0					DR	2	IMP 60
3P	SU681 516	WHT	N	02	000	085	1	1	122	21	104	12	2				DR	2	
4P	SU679 520	WHT	N	01	070	070	2	2	126	25	104	12	2				DR	2	WETNESS2
5	SU683 520	PGR	N	02	000		1	1	000	0	000	0					DR	2	IMP 80
5P	SU693 506	BAR	W	02	000		1	2	78	-23	80	-12	3B				DR	3B	
16	SU671 518	PGR	E	02	000		1	1	000	0	000	0					DR	3A	
18	SU673 518	PGR			000		1	1	114	13	107	15	2				DR	2	CHALKY85
20	SU675 518	PGR			000		1	1	116	15	120	28	2				DR	2	IMP 80
22	SU677 518	WHT	NW	03	000		1	1	000	0	000	0					DR	2	IMP 50
24	SU679 518	WHT	N	03	000		1	1	000	0	000	0					DR	2	IMP 55
26	SU681 518	WHT	NW	02	000		1	1	116	15	112	20	2				DR	2	
42	SU671 516	PGR	E	01	000		1	1	129	28	121	29	2				DR	2	
44	SU673 516	PGR	N	03	000		1	1	99	-2	104	12	3A				DR	2	IMP 80
46	SU675 516	PGR	NE	02	000		1	1	120	19	121	29	2				DR	2	IMP 90
48	SU677 516	WHT	NW	03	000		1	1	000	0	000	0					DR	2	IMP 70
50	SU679 516	WHT	N	02	045		2	2	000	0	000	0					DR	2	IMP 65
52	SU681 516	WHT	N	02	000		1	1	000	0	000	0	2				DR	2	IMP 50
54	SU683 516	WHT	NE	01	000		1	1	000	0	000	0					DR	2	IMP 50
71	SU670 514	RGR			000		5	3B	000	0	000	0		Y			WE	3B	IMP 80
72	SU671 514	RGR			000		4	3B	65	-36	65	-27	3B	Y			WE	3B	GVL AT35
74	SU673 514	PGR	NW	01	000		1	1	000	0	000	0					DR	2	IMP 60
76	SU675 514	PGR	E	02	000		1	1	000	0	000	0					DR	2	IMP 70
78	SU677 514	WHT	W	02	040		2	2	000	0	000	0					DR	2	IMP 60
80	SU679 514	WHT	N	02	055		2	2	105	4	112	20	3A				DR	2	IMP 80
82	SU681 514	WHT	N	02	000		1	1	000	0	000	0					DR	2	IMP 70
84	SU683 514	WHT	E	01	000		1	1	000	0	000	0					DR	2	IMP 50
95	SU677 513	WHT	W	05	000		1	1	71	-30	72	-20	3B				DR	3B	
102	SU684 513	WHT	E	03	040		2	2	97	-4	113	21	3A				DR	2	IMP 70
107	SU671 512	PGR	W	03	000		1	1	90	-11	97	5	3A				DR	3A	
109	SU673 512	PGR	NW	01	000		1	1	000	0	000	0					DR	2	IMP 50
111	SU675 512	CER	N	03	020		2	3A	92	-9	99	7	3A				WE	3A	Q RED
113	SU677 512	WHT	N	02	000		1	1	000	0	000	0					DR	2	IMP 50
115	SU679 512	WHT	W	03	000		1	2	104	3	103	11	3A				DR	3A	
117	SU681 512	WHT	E	01	000		1		93	-8	98	6	3A				DR	3A	
119	SU683 512	WHT	E	02	000		1	1	127	26	117	25	2				DR	2	IMP 95
140	SU669 510	SAS	W		022		1	1	79	-22	79	-13	3B				DR	3A	IMPQDRWE
142	SU671 510	WHT	NW	03	000		1	2	75	-26	76	-16	3B				DR	3B	
144	SU673 510	MZE	W	03	000		1	2	101	0	104	12	3A				DR	3A	
146	SU675 510	CER	NW		000		1	2	71	-30	71	-21	3B				DR	3A	IMPX2QDR

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
150	SU679 510	WHT	NW	01	000		1	1	84	-17	87	-5	3A				DR 3A	
151	SU680 510	HRT	NW		000		1	2	90	-11	96	4	3A				DR 3A	
154	SU683 510	WHT	SE	02	030		2	3A	98	-3	104	12	3A				DW 3A	
155	SU684 510	WHT	SE	04	000		1	2	92	-9	98	6	3A				DR 3A	
157	SU689 510	LEY	W	04	000		1	1	111	10	105	13	2				DR 2	
166A	SU676 509	CER	N		000		1	3A	96	-5	111	19	3A				WK 3A	
181	SU669 508	SAS	W	03	000		1	1	99	-2	110	18	3A				DR 2	IMP QDR
183	SU671 508	CER	W	02	000		1	1	90	-11	95	3	3A				DR 3A	QROOTING
185	SU673 508	LEY	NW	02	000		1	1	111	10	116	24	2				DR 2	IMP80CM
187	SU675 508	LEY	NW		020		2	3B	78	-23	82	-10	3B				WE 3B	CLAY TOP
189	SU677 508	CER	N	02	000		1	2	77	-24	77	-15	3B				DR 3A	IMPX2QDR
191	SU679 508	HRT	SE		000		1	1	77	-24	80	-12	3B				DR 3B	
193	SU681 508	HRT	SE	03	000		1	1	81	-20	83	-9	3A				DR 3B	
195	SU683 508	WHT	SE	03	000		1	1	115	14	118	26	2				DR 2	IMP 80
199	SU687 508	PGR	NE	03	000		1	1	116	15	118	26	2				DR 2	
201	SU689 508	LEY	W	05	000		1	1	82	-19	85	-7	3A				DR 3B	HARD CHALK
203	SU691 508	BAR	SW	04	000		1	2	83	-18	86	-6	3A				DR 3B	HARD CHALK
229	SU671 506	SAS	W	03	000		1	1	91	-10	96	4	3A				DR 3A	QROOTING
232	SU674 506	WHE	W		000		1	1	79	-22	81	-11	3B				DR 3B	QROOTING
233	SU675 506	LEY	E		000		1	1	79	-22	81	-11	3B				DR 3B	QROOTING
235	SU677 506	CER	N		000		1	2	85	-16	85	-7	3A				WD 3A	IMP QDR
237	SU679 506	CER	SE	04	000		1	1	87	-14	92	0	3A				DR 3A	QROOTING
239	SU681 506	FDR	S	03	000		1	1	93	-8	99	7	3A				DR 3A	
241	SU683 506	WHT	NW	03	000		2	2	104	3	112	20	3A				DR 3A	IMP
242	SU684 506	LEY	N	01	050		2	2	108	7	108	16	2				DR 2	IMP 80
247	SU689 506	BAR	W	05	000		1	1	91	-10	97	5	3A				DR 3A	
249	SU691 506	BAR	W	03	000		1	2	83	-18	86	-6	3A				DR 3B	PIT 5
251	SU693 506	BAR	W	02	000		1	2	81	-20	84	-8	3B				DR 3B	PIT 5
270	SU687 505	WHT	E	06	000		1	2	84	-17	87	-5	3A				DR 3A	IMP-55
278	SU669 504	SAS	W		000		1	1	69	-32	69	-23	3B				DR 3A	IMP QDR
280	SU671 504	SAS	W	04	000		1	1	87	-14	91	-1	3A				DR 3A	QROOTING
283	SU674 504	WHE			000		1	1	74	-27	76	-16	3B				DR 3B	QROOTING
286	SU677 504	CER	E	03	000		1	1	87	-14	92	0	3A				DR 3A	QROOTING
288	SU679 504	CER	SE	03	000		1	1	84	-17	89	-3	3A				DR 3A	QROOTING
290	SU681 504	WHT	NW	03	000		1	1	90	-11	93	1	3A				DR 2	IMP 55
292	SU683 504	LEY	NW		000		1	1	103	2	106	14	3A				DR 3A	
294	SU685 504	WHT	E	03	000		1	1	95	-6	101	9	3A				DR 3A	IMP
296	SU687 504	WHT	E	05	000		1	1	98	-3	108	16	3A				DR 2	IMP65
298	SU689 504	BAR	N	04	000		1	1	112	11	107	15	2				DR 2	
300	SU691 504	BAR	W	05	000		1	1	91	-10	97	5	3A				DR 3A	
302	SU693 504	BAR	W	03	000		1	1	81	-20	84	-8	3A				DR 3B	
310	SU676 503	CER	SW	02	030	070	2	3A	110	9	116	24	2				WE 3A	DEEP SPL

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
323	SU671 502	SAS	W	04	000		1	1	81	-20	85	-7	3A				DR	3B	QROOTING
331	SU679 502	WHT	NW	03	000		1	1	98	-3	113	21	3A				DR	2	IMP 70
333	SU681 502	LEY	NW		000		1	1	84	-16	89	-2	3A				DR	3A	CH 37CM
335	SU683 502	LEY	E	03	000		1	1	85	-16	89	-3	3A				DR	3A	IMP 50
337	SU685 502	LEY	E	05	000		1	1	79	-22	82	-10	3B				DR	3B	IMP 50
351	SU673 500	WHT	W	02	000		1	1	84	-17	90	-2	3A				DR	3A	
353	SU675 500	WHT	E	03	000		1	1	85	-16	87	-5	3A				DR	3A	
355	SU677 500	PGR	N	04	000		2	2	139	38	115	23	1				WE	2	
357	SU679 500	WHT	W	01	030		2	3A	121	20	114	22	2				WE	3A	
359	SU681 500	WHT	SE	03	000		1	1	86	-15	89	-3	3A				DR	3A	
372	SU673 498	WHT	W	02	000		1	1	100	-1	106	14	3A				DR	3A	
374	SU675 498	WHT	N	02	000		1	1	146	45	115	23	1					1	
378	SU679 498	WHT	E	02	000		1	1	97	-4	103	11	3A				DR	3A	
380	SU681 498	WHT	SE	03	000		1	1	93	-8	99	7	3A				DR	3A	
392	SU673 496	WHT	N	01	000		1	1	112	11	119	27	2				DR	2	IMP 80
394	SU675 496	LEY	N	02	000		1	1	142	41	119	27	1					1	
396	SU677 496	PGR	E	03	000		1	1	85	-16	90	-2	3A				DR	3A	
409	SU675 494	PGR	N	02	000		2	2	108	7	114	22	2				DR	2	
411	SU677 494	PGR	E	03	000		1	1	129	28	117	25	2				DR	2	
413	SU679 494	PGR	E	03	000		1	1	112	11	117	25	2				DR	2	
419	SU677 492	PGR	SE	03	000		1	1	99	-2	101	9	3A				DR	3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-27	mzcl	10YR44 00						2	0	HR	4						
	27-50	hcl	10YR46 00						0	0	HR	10						
	50-60	c	75YR56 00						0	0	HR	10						
1P	0-30	mzcl	75YR44 00						3	0	HR	5						Y
	30-45	hzcl	75YR46 00						0	0	CH	60	MDMSB	FR G				Y
	45-85	ch	10YR81 00						0	0		0		P				
2P	0-25	mzcl	75YR44 00						3	0	HR	5						Y
	25-35	mzcl	75YR46 00						0	0	CH	95		M				Y
	35-80	ch	10YR81 00						0	0		0		P				
3	0-30	mcl	10YR43 00						5	0	HR	7						
	30-60	hcl	10YR44 46						0	0	HR	10						
3P	0-30	mcl	10YR44 00						5	0	HR	7						
	30-45	hcl	10YR45 00						0	0	HR	30	MDMSB	FR G				
	45-85	c	75YR55 56						0	0	HR	25	MDVCSB	VM M				
	85-120	hcl	10YR68 56						0	0	HR	15	M	VM P	Y		Y	
4P	0-27	mzcl	10YR44 00						4	0	HR	6						
	27-40	hcl	10YR46 00						0	0	HR	9	MDCSB	FM M				
	40-70	c	75YR55 00						0	0	HR	25	MDVCSB	VM M				
	70-120	sc	75YR68 00	00MN00	00	C		Y	0	0	HR	15	WKVCSB	VM P	Y		Y	
5	0-28	mcl	10YR43 00						2	0	HR	5						Y
	28-55	mcl	10YR45 46						0	0	HR	5						Y
	55-80	hcl	10YR56 45						0	0	HR	8						
5P	0-30	hzcl	75YR44 00						3	0	HR	4						Y
	30-55	ch	10YR82 00						0	0		0		P				
16	0-22	mzcl	10YR44 00						2	0	HR	3						Y
	22-30	mzcl	10YR54 00						0	0	HR	3						Y
	30-45	hcl	10YR64 00						0	0	CH	50						Y
	45-55	ch	10YR81 00						0	0		0						
18	0-22	mcl	10YR33 00						4	0	HR	6						Y
	22-85	hcl	10YR46 00						0	0	HR	10		M				Y
	85-90	hcl	10YR54 00						0	0	HR	10		M				Y
20	0-20	fszl	10YR44 00						2	0	HR	5						
	20-40	mcl	10YR46 00						0	0	HR	10		M				
	40-80	hzcl	10YR46 00						0	0	HR	5		M				
22	0-30	mcl	10YR44 00						5	0	HR	7						
	30-40	hcl	10YR45 00						0	0	HR	10						
	40-50	c	75YR56 00						0	0	HR	15						

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
24	0-30	mcl	10YR44 00						4	0	HR	5						
	30-55	c	75YR56 00						0	0	HR	12						
26	0-30	mcl	10YR44 00						3	0	HR	5						
	30-75	hcl	75YR55 00						0	0	HR	5		M				
	75-90	c	75YR46 00						0	0	HR	12		M				
42	0-22	fszl	10YR43 00						0	0	HR	2						
	22-45	mzcl	10YR46 00						0	0	HR	5		M				
	45-90	hcl	10YR46 00						0	0	HR	9		M				
44	0-23	mcl	10YR44 00						2	0	HR	4						
	23-45	hcl	10YR46 00						0	0	HR	4		M				
	45-80	c	10YR46 00	00MN00	00	F			0	0	HR	7		P				
46	0-23	mzcl	75YR44 00						2	0	HR	3						
	23-45	mzcl	10YR45 00						0	0	HR	2		M				
	45-70	hzcl	10YR46 00						0	0	HR	2		M				
	70-90	c	75YR46 00	00MN00	00	F			0	0	HR	5		P				
48	0-30	mcl	10YR43 00						4	0	HR	5						
	30-45	hcl	10YR45 00						0	0	HR	10						
	45-70	c	75YR56 00	00MN00	00	F			0	0	HR	8						
50	0-30	mcl	10YR43 00						5	0	HR	6						
	30-45	hcl	10YR46 00						0	0	HR	8						
	45-65	c	10YR46 00	00MN00	00	F		S	0	0	HR	11						
52	0-30	mcl	10YR43 00						5	0	HR	8						
	30-50	hcl	10YR45 00						0	0	HR	18						
54	0-30	mcl	10YR43 00						4	0	HR	5						
	30-50	hcl	10YR45 00						0	0	HR	13						
71	0-26	mszl	10YR33 00	05YR46 00	C			Y	0	0	HR	2						
	26-65	hzcl	05Y 72 00	10YR66 00	C			Y	0	0	HR	2						
	65-80	hzcl	05Y 72 00	10YR66 00	C			Y	0	0	CH	5						Y
72	0-35	mzcl	10YR23 00						0	0	HR	3						
74	0-25	mzcl	10YR44 00						2	0	HR	4						
	25-60	hcl	10YR46 00						0	0	HR	9						
76	0-23	mcl	10YR44 00						5	0	HR	7						
	23-70	c	75YR56 00						0	0	HR	7						
78	0-30	mcl	10YR43 00						5	0	HR	6						
	30-40	hcl	10YR46 00						0	0	HR	5						
	40-60	c	75YR56 00	00MN00	00	C		S	0	0	HR	8						

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
80	0-30	mcl	10YR44 00						3	0	HR	5						
	30-55	hcl	75YR55 00						0	0	HR	5		M				
	55-80	c	75YR46 00	00MN00	00	C		S	0	0	HR	8		M				
82	0-30	mcl	10YR44 00						2	0	HR	4						
	30-70	hcl	75YR55 00	00MN00	00	F			0	0	HR	5						
84	0-30	mcl	10YR43 00						2	0	HR	4						
	30-50	hcl	10YR46 00						0	0	HR	15						
95	0-25	hcl	10YR44 00						0	0	CH	10						Y
	25-55	ch	10YR81 00						0	0	HR	3		P				
102	0-30	mcl	10YR44 00						3	0	HR	4						
	30-40	hcl	10YR46 00						0	0	HR	5		M				
	40-60	c	75YR56 00	00MN00	00	C		S	0	0	HR	5		M				
	60-70	c	75YR46 00	00MN00	00	C		S	0	0	HR	8		M				
107	0-25	mcl	10YR44 00						2	0	HR	4						Y
	25-55	hcl	10YR56 00						0	0	CH	50		M				Y
	55-70	ch	10YR81 00						0	0	HR	3		P				
109	0-26	mcl	10YR44 00						1	0	HR	3						
	26-50	hzcl	10YR46 00						0	0	HR	8						
111	0-20	hzcl	10YR43 00						2	0	HR	4						
	20-60	c	05YR44 00	00MN00	00	C		Y	0	0	HR	2		M				
113	0-28	mzcl	10YR44 00						3	0	HR	5						Y
	28-50	hcl	75YR46 00						0	0	HR	11						Y
115	0-30	hzcl	75YR44 00						3	0	HR	4						Y
	30-50	hcl	10YR74 00						0	0	CH	30		M				Y
	50-80	ch	10YR81 00						0	0	HR	3		P				
117	0-27	mzcl	75YR44 00						2	0	HR	4						Y
	27-45	zc	75YR55 00						0	0	CH	25		M				Y
	45-70	ch	10YR81 00						0	0	HR	3		P				
119	0-30	mzcl	10YR43 00						2	0	HR	4						
	30-80	hcl	10YR44 00						0	0	HR	3		M				
	80-95	c	10YR46 00	00MN00	00	F			0	0	HR	5		M				
140	0-22	mcl	10YR42 00						2	0	HR	4						
	22-50	hcl	10YR54 00	000C00	00	C		S	0	0	HR	10		M				
142	0-26	hzcl	10YR54 00						2	0	HR	3						Y
	26-55	ch	10YR81 00						0	0	HR	3		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
144	0-26	hzcl	75YR44 00						5	0	HR	6						
	26-50	c	75YR46 00						0	0	HR	2		M				
	50-75	ch	10YR81 00						0	0	HR	3		P				
146	0-30	hzcl	10YR43 00						2	0	HR	4						
	30-40	hzcl	10YR54 00						0	0	HR	4		M				
150	0-30	mzcl	75YR44 00						2	0	HR	5						Y
	30-35	hzcl	10YR45 00						0	0	HR	5		M				Y
	35-60	ch	10YR81 00						0	0	HR	3		P				
151	0-28	hzcl	75YR44 00						3	0	HR	5						Y
	28-40	hzcl	10YR55 00						0	0	CH	50		M				Y
	40-70	ch	10YR81 00						0	0	HR	3		P				
154	0-30	hcl	75YR44 00						0	0	HR	2						Y
	30-50	c	75YR56 00	00MN00	00	C		S	0	0	HR	1		M				Y
	50-70	ch	10YR81 00					S	0	0	HR	3		P				
155	0-28	hzcl	75YR44 00						3	0	HR	4						Y
	28-40	c	10YR46 00						0	0	CH	20		M				Y
	40-70	ch	10YR81 00						0	0	HR	3		P				
157	0-30	mzcl	10YR44 00						2	0	HR	4						Y
	30-60	hzcl	10YR64 00						0	0	CH	50		M				
	60-90	ch	10YR81 00						0	0	HR	3		P				
166A	0-25	c	10YR43 00						2	0	HR	4						
	25-40	c	75YR43 00	00MN00	00	C			0	0	HR	2		M				
	40-55	c	75YR44 00	00MN00	00	C			0	0	HR	1		M				
	55-70	c	75YR44 00						0	0	CH	10		M				
181	0-30	mzcl	10YR43 00						2	0	HR	4						
	30-70	hcl	10YR54 00						0	0	HR	15		M				
183	0-28	mzcl	10YR43 00						2	0	HR	4						
	28-38	hcl	10YR64 00						0	0	CH	30		M				
	38-68	ch	00ZZ00 00						0	0		0		M				
185	0-20	mzcl	10YR43 00						0	0	HR	2						
	20-30	hcl	10YR54 00						0	0	HR	2		M				
	30-65	c	10YR54 00						0	0	HR	2		M				
	65-80	hcl	10YR64 00						0	0	CH	10		M				
187	0-20	c	10YR43 00						2	0	HR	4						
	20-35	c	05Y 44 00	00MN00	00	C		Y	0	0	HR	1		P				
	35-65	ch	00ZZ00 00					Y	0	0		0		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
189	0-25	hzcl	10YR43 00						2	0	HR	4						
	25-45	c	10YR54 00						0	0	HR	2		M				
191	0-26	mzcl	75YR44 00						4	0	HR	5						Y
	26-60	ch	10YR81 00						0	0	HR	3		P				
193	0-32	mzcl	75YR43 00						3	0	HR	8						Y
	32-60	ch	10YR81 00						0	0	HR	3		P				
195	0-30	mzcl	75YR44 00						2	0	HR	4						Y
	30-45	hzcl	75YR45 00						0	0	HR	5		M				Y
	45-80	hzcl	75YR55 00						0	0	CH	20		M				Y
199	0-30	mzcl	75YR43 00						2	0	HR	4						Y
	30-65	hzcl	75YR56 00						0	0	HR	3		M				Y
	65-85	ch	10YR81 00						0	0	HR	3		P				
201	0-30	mzcl	10YR44 00						2	0	HR	3						Y
	30-60	ch	10YR81 00						0	0	HR	3		P				
203	0-30	hzcl	10YR44 00						2	0	HR	4						Y
	30-35	hzcl	10YR64 00						0	0	CH	60		M				Y
	35-60	ch	10YR81 00						0	0	HR	3		P				
229	0-28	mzcl	10YR43 00						2	0	HR	4						
	28-38	hzcl	10YR64 00						0	0	CH	30		M				
	38-68	ch	00ZZ00 00						0	0		0		M				
232	0-28	mzcl	10YR43 00						2	0	HR	4						
	28-58	ch	00ZZ00 00						0	0		0		M				
233	0-28	mzcl	10YR43 00						2	0	HR	4						
	28-58	ch	00ZZ00 00						0	0		0		M				
235	0-30	hzcl	10YR43 00						2	0	HR	4						
	30-50	c	75YR44 00						0	0	HR	5		M				
237	0-28	mzcl	10YR43 00						2	0	HR	4						
	28-35	hzcl	10YR54 00						0	0	CH	30		M				
	35-65	ch	00ZZ00 00						0	0		0		M				
239	0-28	mzcl	75YR43 00						4	0	HR	5						Y
	28-40	hzcl	75YR46 00						0	0	HR	5		M				Y
	40-70	ch	10YR81 00						0	0	HR	3		P				
241	0-30	mzcl	10YR44 00						5	0	HR	7						
	30-45	hcl	75YR55 00						0	0	HR	8		M				
	45-80	c	75YR46 00	00MN00 00	F				0	0	HR	10		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
242	0-28	mcl	10YR44 00						5	0	HR	7						
	28-50	hcl	75YR56 00						0	0	HR	9		M				
	50-90	c	75YR46 00	00MN00	00	C		S	0	0	HR	10		M				
247	0-30	mzcl	10YR44 00						3	0	HR	4						Y
	30-40	hzcl	10YR64 00						0	0	CH	55		M				Y
	40-70	ch	10YR81 00						0	0	HR	3		P				
249	0-32	hzcl	10YR54 00						3	0	CH	8						Y
	32-60	ch	10YR81 00						0	0	HR	3		P				
251	0-30	hzcl	75YR44 00						2	0	HR	4						Y
	30-60	ch	10YR81 00						0	0	HR	3		P				
270	0-27	hcl	75YR44 00						3	0	HR	5						Y
	27-40	c	05YR56 00						0	0	HR	5		M				Y
	40-55	c	05YR56 00						0	0	CH	40		M				Y
278	0-28	mzcl	10YR43 00						4	0	HR	6						
	28-40	hzcl	10YR64 00						0	0	CH	20		M				
280	0-28	mzcl	10YR43 00						2	0	HR	5						
	28-35	mzcl	10YR54 00						0	0	CH	30		M				
	35-65	ch	00ZZ00 00						0	0		0		M				
283	0-25	mzcl	10YR43 00						2	0	HR	4						
	25-55	ch	00ZZ00 00						0	0		0		M				
286	0-28	hzcl	10YR43 00						2	0	HR	4						
	28-35	hzcl	10YR54 00						0	0	CH	30		M				
	35-65	ch	00ZZ00 00						0	0		0		M				
288	0-22	mzcl	10YR43 00						2	0	HR	6						
	22-35	hzcl	10YR64 00						0	0	CH	30		M				
	35-65	ch	00ZZ00 00						0	0		0		M				
290	0-30	mzcl	75YR44 00						3	0	HR	4						
	30-55	hzcl	75YR55 00						0	0	HR	10		M				
292	0-27	mzcl	75YR44 00						3	0	HR	4						
	27-60	zc	75YR56 00	00MN00	00	F			0	0	HR	5		M				
	60-80	ch	10YR81 00						0	0	HR	3		P				
294	0-30	mzcl	75YR44 00						2	0	HR	4						Y
	30-50	hzcl	75YR74 00						0	0	CH	50		M				Y
	50-70	ch	10YR81 00						0	0	HR	3		P				
296	0-28	mzcl	75YR43 00						3	0	HR	4						
	28-65	hzcl	75YR55 00						0	0	HR	11		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
298	0-30	mzcl	75YR43 00						3	0	HR	5						Y
	30-40	zc	75YR56 00						0	0	CH	10		M				Y
	40-70	hzcl	75YR56 00						0	0	CH	60		M				Y
	70-90	ch	10YR81 00						0	0	HR	3		P				
300	0-32	mzcl	10YR44 00						3	0	HR	6						Y
	32-40	hzcl	75YR54 00						0	0	CH	60		M				Y
	40-70	ch	10YR81 00						0	0	HR	3		P				
302	0-30	mzcl	75YR44 00						3	0	HR	5						Y
	30-60	ch	10YR81 00						0	0	HR	3		P				
310	0-30	hcl	10YR43 00						2	0	HR	4						
	30-38	c	10YR54 00	000C00	00	C		S	0	0		0		M				
	38-70	c	10YR53 00	000C00	00	C		Y	0	0		0		M				
	70-85	c	25Y 62 00	000C00	00	C		Y	0	0		0		P	Y		Y	
323	0-28	mzcl	10YR43 00						6	0	HR	15						
	28-35	mzcl	10YR54 00						0	0	CH	50		M				
	35-65	ch	00ZZ00 00						0	0		0		M				
331	0-28	mzcl	75YR44 00						3	0	HR	5						
	28-50	hcl	75YR55 00						0	0	HR	6		M				
	50-70	c	75YR46 00						0	0	HR	10		M				
333	0-27	mcl	75YR44 00						5	0	HR	7						Y
	27-37	c	05YR46 00						0	0	CH	15		M				Y
	37-67	ch	10YR81 00						0	0	HR	4		P				
335	0-28	mzcl	75YR43 00						4	0	HR	7						Y
	28-35	hzcl	75YR46 00						0	0	CH	30		M				Y
	35-65	ch	10YR81 00						0	0	HR	3		P				
337	0-28	mzcl	10YR54 00						2	2	HR	5						Y
	28-60	ch	10YR81 00						0	0	HR	3		P				
351	0-28	mzcl	75YR44 00						8	0	HR	10						Y
	28-70	ch	10YR81 00						0	0		0		P				
353	0-30	mzcl	75YR43 00						2	0	HR	4						Y
	30-40	hzcl	75YR63 00						0	0	CH	50		M				Y
	40-60	ch	10YR81 00						0	0	HR	5		P				
355	0-30	mzcl	75YR43 00						2	0	HR	4						
	30-55	hcl	75YR46 00						0	0	HR	5		M				
	55-120	c	75YR46 00	00MN00	00	F			0	0	HR	7		M				
357	0-30	hcl	75YR44 00						2	0	HR	4						
	30-90	c	05YR48 00	00MN00	00	C		Y	0	0	HR	3		M				
	90-100	ch	10YR81 00					Y	0	0		0		P				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
359	0-28	mzcl	75YR44 00						2	0	HR	5						Y
	28-38	mzcl	10YR54 00						0	0	CH	10		M				Y
	38-60	ch	10YR81 00						0	0		0		P				
372	0-28	zl	75YR44 00						5	0	HR	7						Y
	28-35	mzcl	10YR45 00						0	0	HR	5		M				Y
	35-70	ch	10YR81 00						0	0		0		P				
374	0-32	mzcl	75YR43 00						3	0	HR	5						
	32-60	hcl	75YR45 00						0	0	HR	5		M				
	60-90	c	75YR55 00	00MN00	00	F			0	0	HR	8		M				
	90-120	hzcl	75YR56 00						0	0	HR	3		M				
378	0-28	mzcl	75YR44 00						1	0	HR	3						Y
	28-42	mzcl	10YR74 00						0	0	CH	5		M				Y
	42-70	ch	10YR81 00						0	0		0		P				
380	0-30	mzcl	75YR44 00						5	0	HR	7						Y
	30-40	hzcl	10YR74 00						0	0	CH	20		M				Y
	40-70	ch	10YR81 00						0	0		0		P				
392	0-30	mzcl	10YR44 00						2	0	HR	4						
	30-55	hzcl	10YR55 00						0	0	HR	3		M				
	55-80	c	75YR66 00						0	0	HR	3		M				
394	0-30	mzcl	75YR43 00						2	0	HR	3						
	30-50	hzcl	10YR46 00						0	0	HR	3		M				
	50-120	c	75YR46 00	00MN00	00	F			0	0	HR	5		M				
396	0-23	hcl	75YR43 00						5	0	HR	7						
	23-37	c	05YR46 00						0	0	HR	3		M				
	37-67	ch	10YR81 00						0	0	HR	3		P				
409	0-28	mzcl	75YR43 00						3	0	HR	5						
	28-55	hcl	75YR46 00						0	0	HR	5		M				
	55-80	c	05YR46 00	00MN00	00	F			0	0	HR	7		M				
411	0-30	mzcl	75YR43 00						4	0	HR	6						
	30-52	mzcl	75YR45 00						0	0	HR	3		M				
	52-85	mzcl	75YR63 00						0	0	CH	30		M				Y
	85-100	ch	10YR81 00						0	0	HR	5		P				
413	0-22	zl	75YR43 00						2	0	HR	4						
	22-32	mzcl	75YR44 00						0	0	HR	4		M				Y
	32-60	mzcl	75YR54 64						0	0	CH	25		M				Y
	60-75	ch	10YR81 00						0	0	HR	5		P				
419	0-27	zl	75YR43 00						3	0	HR	5						
	27-32	mzcl	75YR46 00						0	0	HR	4		M				Y
	32-45	mzcl	75YR63 00						0	0	CH	25		M				Y
	45-60	ch	10YR81 00						0	0	HR	5		P				

SOIL PIT DESCRIPTION

Site Name : MAPLEDURWELL,BASINGSTOKE Pit Number : 1P

Grid Reference: SU677 502
Average Annual Rainfall : 773 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 167 days
Land Use : Wheat
Slope and Aspect : 02 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	75YR44 00	3	5	HR					Y
30- 45	HZCL	75YR46 00	0	60	CH		MDMSB	FR	G	Y
45- 85	CH	10YR81 00	0	0					P	

Wetness Grade : 1
Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3A
APW : 105mm MBW : 4 mm
APP : 101mm MBP : 9 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : MAPLEDURWELL,BASINGSTOKE Pit Number : 2P

Grid Reference: SU673 502 Average Annual Rainfall : 773 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 167 days
Land Use : Wheat
Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MZCL	75YR44 00	3	5	HR					Y
25- 35	MZCL	75YR46 00	0	95	CH				M	Y
35- 80	CH	10YR81 00	0	0					P	

Wetness Grade : 1 Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3A APW : 92 mm MBW : -9 mm
APP : 91 mm MBP : -1 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : MAPLEDURWELL,BASINGSTOKE Pit Number : 3P

Grid Reference: SU681 516 Average Annual Rainfall : 773 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 167 days
Land Use : Wheat
Slope and Aspect : 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MCL	10YR44 00	5	7	HR					
30- 45	HCL	10YR45 00	0	30	HR		MDMSB	FR	G	
45- 85	C	75YR55 56	0	25	HR		MDVCSB	VM	M	
85-120	HCL	10YR68 56	0	15	HR		M	VM	P	

Wetness Grade : 1 Wetness Class : I
Gleying :000 cm
SPL :085 cm

Drought Grade : 2 APW : 122mm MBW : 21 mm
APP : 104mm MBP : 12 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : MAPLEDURWELL,BASINGSTOKE Pit Number : 4P

Grid Reference: SU679 520 Average Annual Rainfall : 773 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 167 days
Land Use : Wheat
Slope and Aspect : 01 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MZCL	10YR44 00	4	6	HR					
27- 40	HCL	10YR46 00	0	9	HR		MDCSB	FM	M	
40- 70	C	75YR55 00	0	25	HR		MDVCSB	VM	M	
70-120	SC	75YR68 00	0	15	HR	C	WKVCSB	VM	P	

Wetness Grade : 2 Wetness Class : II
Gleying :070 cm
SPL :070 cm

Drought Grade : 2 APW : 126mm MBW : 25 mm
APP : 104mm MBP : 12 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : MAPLEDURWELL,BASINGSTOKE Pit Number : 5P

Grid Reference: SU693 506
Average Annual Rainfall : 773 mm
Accumulated Temperature : 1436 degree days
Field Capacity Level : 167 days
Land Use : Barley
Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	HZCL	75YR44 00	3	4	HR					Y
30- 55	CH	10YR82 00	0	0					P	

Wetness Grade : 2
Wetness Class : I
Gleying :000 cm
SPL : No SPL

Drought Grade : 3B
APW : 78 mm MBW : -23 mm
APP : 80 mm MBP : -12 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness