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MAFF Ministry of Agriculture Fisheries and Food

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Basingstoke and Deane Borough Local Plan
Plan 1: Land West of Roman Road
Basingstoke
Agricultural Land Classification
ALC Map and Report
September 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

Basingstoke and Deane Borough Local Plan
PLAN 1 : Land West of Roman Road, Basingstoke, Hampshire
Reconnaissance Survey.

1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Basingstoke district of Hampshire. This work was in connection with the preparation of the Basingstoke and Deane Borough Local Plan.

1.2 Approximately 540 hectares of land to the west of Roman Road between Basingstoke to the east and East Oakley and Pardown to the west were surveyed in September 1994. The survey was undertaken at a reconnaissance level of approximately one boring per four hectares. A total of 135 borings and 7 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 agricultural use. Also included in this survey are the findings of a previous survey carried out in 1993 on part of the site in the vicinity of Fuzzy Drove (ADAS Reference 1501/17/93).

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

1.4 At the time of the survey, all of the agricultural land use was in arable use with a mixture of stubble, recently drilled cereals, beans and land being ploughed. The Non-agricultural area includes woodland, scrub and agricultural tracks.

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 1:15,000. It is accurate at this scale, but any enlargement would be misleading. The reconnaissance nature of the survey means that the ALC grade boundaries are shown as dotted, to emphasise the approximate nature of their location. This map supersedes any previous survey information for the site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
2	57.1	10.6	12.2
3a	390.7	72.5	83.8
3b	18.8	3.5	4.0
Non Agricultural	56.7	10.5	**100% (466.6 ha)**
Agricultural buildings	4.5	0.8	
Urban	11.2	2.1	
Total	**539.0 ha**	**100%**	

1.6 A general description of the grades, subgrades and land use categories is provided in Appendix 1. 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 majority of the agricultural land has been classified as Subgrade 3a as a result of a soil droughtiness limitation. The soils are developed over chalk deposits with the chalk occurring at shallow depths and with limited rooting into the chalk. Deeper chalky soils occur in the bottoms of dry valley features; these soils have larger reserves of soil moisture and only experience a slight droughtiness limitation sufficient to allow them to be classified as Grade 2; soil workability is also an active limitation, related to the medium clay loam topsoil textures and the prevailing climate.

1.8 Minor areas of Subgrade 3b land have been identified where heavier clay profiles are developed over Clay-with-Flints geology. The clay subsoils cause significant waterlogging in these profiles throughout the year resulting in a soil wetness and workability limitation.

2. Climate

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

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

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office, 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site with the exception of a minor area in the south which is limited to Grade 2 where the altitude exceeds 160 metres.

2.4 Climatic and soil factors also interact to influence soil wetness and droughtiness limitations. The field capacity days for this site are relatively high in a regional context and, therefore, the likelihood of soil wetness/workability problems will be increased; conversely, drought risk may be reduced. Field capacity days are generally above 175 days except in the north east corner where altitudes fall below 110 metres.

Table 2a :Climatic Interpolations

Grid Reference	SU 590515	SU 590496	SU 588 483
Altitude, (m, AOD)	122	130	165
Accumulated Temperature (°days)	1396	1388	1349
Average Annual Rainfall (mm)	816	828	864
Field Capacity Days	177	180	186
Moisture deficit, wheat (mm)	95	93	88
Moisture deficit, potatoes (mm)	84	82	76
Overall Climatic Grade	1	1	2

Grid Reference	SU 600513	SU 600509	SU 595499
Altitude, (m, AOD)	110	105	120
Accumulated Temperature °days, Jan.-June)	1410	1416	1399
Average Annual Rainfall (mm)	805	803	817
Field Capacity Days	176	176	178
Moisture deficit, wheat (mm)	97	97	95
Moisture deficit, potatoes (mm)	86	86	84
Overall Climatic Grade	1	1	1

Grid Reference	SU 581490	SU 600509	SU 590489
Altitude, (m, AOD)	140	105	150
Accumulated Temperature °days, Jan.-June)	1377	1416	1365
Average Annual Rainfall (mm)	845	803	847
Field Capacity Days	183	176	183
Moisture deficit, wheat (mm)	92	97	90
Moisture deficit, potatoes (mm)	80	86	78
Overall Climatic Grade	1	1	1

3. Relief

3.1 The site lies at an altitude of about 100-165 metres AOD. The lowest point of altitude is to the north east. From here, land rises gently southwards incorporating a small number of dry valley features which merge with the highest land to the extreme south of the site.

4. Geology and Soils

4.1 The published geological information (BGS, 1980), shows the majority of the site to be underlain by Upper Chalk with several deposits of Clay with Flints along the western boundary.

4.2 The published soils information (SSEW 1983), shows the site to comprise three soil types. The majority of the site consists of soils of the Andover 1 association, reflecting the chalk geology. These are described as "Shallow well drained calcareous silty soils over chalk. Deep in valley bottoms". Located in the north are soils of the Coombe 1 association, described as "Fine silty soils over chalk rubble. Shallow to chalk on valley sides". In conjunction with the deposits of clay with flints are soils of the Carstens association, "Well drained fine silty over clayey and fine silty soils, often slightly flinty". The reconnaissance survey found soils similar to those described above.

5. 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, very good quality agricultural land, is mostly found in the bottoms of dry valleys across the site and comprises two soil types both with soil droughtiness and workability as the main limitations. The more extensive of these consists of deep clayey soils which become stonier with depth. The second soil type is similar to the first but passes to chalk in the lower subsoil.

5.4 The deep clayey soils typically comprise topsoils of medium clay loam containing 2-17 % total flints (with 4-7 % greater than 2 cm in diameter). Upper subsoils consist of heavy clay loam or clay, occasionally heavy silty clay loam with similar volumes of flints or weathered chalk. Lower subsoils comprise clay or heavy clay loam with 2-40 % total flints or weathered chalk: Soil Pits 1, 3, 5 and 7 show the range of textures and stone contents encountered. Where stone content allowed description, the clay subsoils were found to be of moderate structural condition.

5.5 The second soil type comprises medium clay loam topsoils with 2-10 % total flints (with 4-7 % greater than 2 cm diameter). Upper subsoils consist of heavy clay loam or clay and occasionally medium silty clay loam containing 2-50 % total weathered chalk or flints. This passes to soft unweathered chalk at a depth of 40-85 cm. Soil Pit 4, although not located in this mapping unit, found the effective rooting depth into the chalk to be approximately 35 cm.

5.6 Both soil types are well drained and placed in Wetness Class I. However, both experience a slight restriction in available water in the soil profile. This is due to the combination of soil textures, structures, stone contents, the depth of soil over chalk and climatic factors. As a result, this will have a slight effect upon the level and consistency of crop yields such that the land can be classified no better than Grade 2.

5.7 Additionally, the medium textured topsoils of both soil types together with climatic factors results in a topsoil workability limitation to Grade 2. At this locality the clay content in the topsoils tends to retain more water compared to sandy soils and are slower to return to a workable condition after wetting.

5.8 Finally, in a few places, topsoil stoniness (in both soil types) also limits land to Grade 2 with sieved topsoil stone volumes of 5-8 % flints greater than 2 cm in diameter. Stone volumes of this nature can have an adverse effect on crop establishment and increase production costs by causing extra wear and tear to implements and tyres.

Subgrade 3a

5.9 The majority of the site is classified as Subgrade 3a, good quality agricultural land, with soil droughtiness and soil workability as the main limitations. Two distinct soil types exist in this mapping unit; one is shallow soils over chalk which predominate across the site and is limited by soil droughtiness, the other soil type consists of heavy clayey soils limited by soil workability.

6.0 The shallow chalky soils typically comprise medium clay loam or silty clay loam topsoils containing 2-15% total flints or weathered chalk. Approximately 1-10% flints were found to be greater than 2 cm in diameter when sieved. In most cases soft chalk with 0-5% flints

underlies the topsoil. Occasionally a thin, variably textured horizon containing 0-50% weathered chalk or flints was encountered which then passed to chalk. Profiles are well drained with a Wetness Class of I. However, they experience a moderate droughtiness limitation due to the shallow depth of soil over the chalk. Soil Pit 4 shows effective rooting into the chalk to be approximately 35 cm. Soil Pit 8 from the previous survey (outside the current survey area but on adjacent land) is typical of a number of borings around Fuzzy Drove, to the east of the site. Here, a rooting depth of approximately 40 cm was recorded although this does not affect the overall grade for the mapping unit. Occasionally, some shallow chalky profiles with heavy clay loam topsoils were encountered. These are also limited to Subgrade 3a due to a topsoil workability limitation. This limitation is more in common with the second soil type described below.

6.1 Deep, very slightly to moderately stony clayey soils typify this second soil type. Topsoils comprise heavy silty clay loam or heavy clay loam with 4-12% total flints. Sieving revealed 1-7% of this total to be over 2 cm in diameter. Upper subsoils consist of moderately structured clay or heavy clay loam containing 2-20% total flints or weathered chalk. This passes to lower subsoils of similar texture and stone content. Soil Pit 6 is located in this map unit. Here, the clay is of moderate structural condition. The soil pit is actually classified as Grade 2 as the workability limitation is reduced because the topsoil texture is slightly lighter than the predominant texture in this unit. As with those described above, soils are well drained, Wetness Class I. However, the heavy nature of the topsoils in combination with climatic factors means that land can be classified no better than Subgrade 3a due to a topsoil workabilty limitation.

6.2 A small number of profiles of better quality were encountered but not mapped separately due to their limited number and distribution.

Subgrade 3b

6.3 Land classified as Subgrade 3b, moderate quality land, is found in a few small areas to the south and west of the site. Here, soils are developed from the underlying Clay with Flints geology. Profiles typically comprise heavy clay loam topsoils with 9-12% total flints (with 4-7% greater than 2 cm in diameter). Subsoils consist of poorly structured slowly permeable clay or, in some cases, a thin horizon of moderately structured clay which lies above this. In places chalk was encountered at depth which can ameliorate the Wetness Class in red subsoils if it occurs within 100 cm. Soil Pit 2, despite a classification of Grade 4 (due to a worse Wetness Class than the surrounding soils), illustrates the main profile characteristics of these soils and shows the structure of the slowly permeable clay to be moderately well developed coarse angular blocky peds of very firm consistence. Subsequently, profiles are poorly drained, leading to a Wetness Class of III and this, combined with climatic factors and topsoil texture, results in a classification of Subgrade 3b.

6.4 A small number of poorer quality profiles were included in this mapping unit, and were not mapped separately due to their limited number and distribution.

SOURCES OF REFERENCE

ADAS (1993), Basingstoke and Deane Local Plan, Site 2: Kempshott Lane (additional area) 1501/017/93

British Geological Survey (1980), Sheet 284, Basingstoke, 1:50,000 scale. Solid and Drift Edition.

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

Meteorological Office (1989), *Climatic datasets for Agricultural Land Classification.*

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and accompanying legend.

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

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 : Excellent Quality Agricultural Land

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

Grade 2 : Very Good Quality Agricultural Land

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

Grade 3 : Good to Moderate Quality Land

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

Subgrade 3a : Good Quality Agricultural Land

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

Subgrade 3b : Moderate Quality Agricultural Land

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

Grade 4 : Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (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 severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

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

Non-agricultural

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

Woodland

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

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (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

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

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.

Definition of Soil Wetness Classes

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.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a 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 sandstone	**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 appropiate 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

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	SU59205100	PLO					1	2	089	-8	093	7	3A				DR	3A	IMP40
1P	SU59505100	ARA					1	2	102	5	104	18	2				WK	2	PIT 80 CM
2	SU59205120	PLO	S	02			1	2	080	-17	083	-3	3A				DR	3A	IMP30
2P	SU58104880	PLO				030	4	4	109	16	100	18	2				WE	4	REDFIG7
3	SU59105130	PLO	S	02			1	2	100	3	099	13	3A				DR	3A	IMP50
3P	SU58964994	ARA					1	2	111	21	103	25	2				DR	2	2WK
4	SU59105140	PLO	S	02			1	2	124	29	116	32	2				DR	2	IMP80
4P	SU59074994	STB	W	02			1	2	075	-18	078	-4	3A				DR	3A	PIT70CM
5	SU59105160	PLO	NE	02			1	2	082	-13	086	2	3A				DR	3A	IMP45
5P	SU58935000	STB					1	2	109	16	115	33	2				WK	2	PIT80
6	SU59105170	PLO	NW	02			1	2	088	-7	094	10	3A				DR	3A	IMP50
6P	SU58584987	ARA					1	2	104	11	113	31	2				WK	2	
7	SU59505170	STB	N	02			1	2	115	18	106	20	2				WK	2	IMP70
7P	SU59054920	BEN	E	02			1	2	104	11	112	30	2				WK	2	PIT80
8	SU59705160	STB	N	01			1	2	083	-14	083	-3	3A				WK	2	IMP50
9	SU59805150	STB	E	01			1	2	091	-6	099	13	3A				DR	2	IMP60
10	SU59505140	STB	SE	01			1	3A	093	-2	095	11	3A				WK	3A	IMP50
11	SU59405120	STB	S	03			1	2	115	18	106	20	2				DR	2	IMP65
12	SU59305090	PLO	N	02			1	2	093	-4	097	11	3A				DR	3A	IMP40
13	SU59505090	PLO	N	02			1	2	086	-11	091	5	3A				DR	3A	IMP45
14	SU59905090	PLO	N	02			1	2	090	-7	095	9	3A				DR	2	IMP60
15	SU60005100	PLO					1	2	066	-31	066	-20	3B				DR	2	IMP40
16	SU59905120	PLO	SW	02			1	2	080	-17	084	-2	3A				DR	3A	IMP40
17	SU59805110	PLO					1	2	067	-30	067	-19	3B				DR	2	IMP40
18	SU60005130	STB	S	02			1	2	122	25	115	29	2				DR	2	IMP90
19	SU59605000	STB	SE	02			1	2	088	-9	094	8	3A				DR	3A	IMP40
20	SU59604984	STB					1	2	064	-33	064	-22	3B				DR	2	IMP40X1P
21	SU59604975	STB	E	02			1	2	076	-21	080	-6	3B				DR	3B	IMP35
22	SU59604950	STB	SE	02			1	2	080	-13	084	2	3A				DR	3A	IMP35
23	SU59404950	STB	SE	02			1	2	082	-11	086	4	3A				DR	3A	IMP35
24	SU59204950	STB	W	02			1	2	078	-15	081	-1	3A				DR	3A	IMP35
25	SU59204960	STB					1	2	100	7	109	27	2				WK	2	IMP65
26	SU59104940	PLO	E	02			1	3A	098	5	112	30	3A				WK	3A	IMP70
27	SU59104990	ARA					1	2	082	-11	086	4	3A				DR	3A	IMP40
28	SU59204990	STB					1	2	083	-10	087	5	3A				DR	3A	IMP40
29	SU59104970	STB					1	2	086	-7	090	8	3A				DR	3A	IMP55Q2
30	SU59104920	PLO	E	02			1	2	062	-31	062	-20	3B				DR	2	IMP40Q2
31	SU59104900	PLO	N	02			1	2	113	23	105	27	2				DR	2	IMP70
32	SU59104880	STB	E	03			1	2	113	23	106	28	2				DR	2	IMP70
33	SU59104860	STB	N	03			1	2	088	-2	094	16	3A				DR	3A	IMP45
34	SU59104840	STB					1	2	095	7	097	21	2				DR	2	IMP45
35	SU58904880	STB					1	2	086	-2	091	15	3A				DR	3A	IMP45

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
36	SU59304880	STB					1	2	083	-7	087	9	3A				DR	3A	IMP40
37	SU59304900	STB	N	02			1	2	104	14	101	23	2				DR	2	IMP55
38	SU59304920	STB	N	02			1	2	088	-5	095	13	3A				DR	2	IMP60
39	SU59404920	STB	N	02			1	2	082	-11	087	5	3A				DR	3A	IMP40
40	SU59304930	STB	NE	02			1	2	087	-6	091	9	3A				DR	3A	IMP45
41	SU59504940	STB	NE	02			1	2	089	-4	095	13	3A				DR	3A	IMP40
42	SU58174865	PLO					1	3A		0		0					WK	3A	SEIVED
43	SU58174870	PLO	S	03			1	2	080	-10	085	7	3A				DR	3A	
44	SU58054880	PLO				028	3	3B	108	18	099	21	2				WE	3B	RED
45	SU58044896	PLO				026	4	4	119	29	097	19	2				WE	4	REDFIG7
46	SU58104910	PLO					1	3A	065	-28	065	-17	3B				WK	3A	IMP40
47	SU58204920	STB					1	3A	097	4	113	31	3A				WK	3A	IMP70
48	SU58404920	STB					1	3A	080	-13	080	-2	3A				WK	3A	IMP50
49	SU58365015	STB					1	2	126	29	115	29	2				WK	2	IMP100
50	SU58905090	PLO					1	3A	073	-24	073	-13	3B				WK	3A	IMPQDR
51	SU58845110	PLO					1	2	084	-13	087	1	3A				DR	2	IMPQDR
52	SU58765125	PLO					1	3A	054	-43	054	-32	3B				WK	3A	IMPQDR
53	SU58665140	PLO					1	3A	071	-24	071	-13	3B				WK	3A	IMPQDR
54	SU58605150	PLO					1	2	081	-14	086	2	3A				DR	3A	
55	SU58305120	PLO					1	2	081	-16	086	0	3A				DR	3A	
56	SU58445095	PLO					1	2	081	-16	085	-1	3A				DR	2	IMPQDR
57	SU58205084	PLO					1	2	078	-19	078	-8	3A				DR	2	IMPQDR
58	SU58465080	PLO					1	3A	087	-10	091	5	3A				WK	3A	IMPQDR
59	SU58635080	CER					1	3A	095	-2	110	24	3A				WK	3A	IMP
60	SU59305080	ARA					1	2	085	-12	089	3	3A				DR	3A	
61	SU59445065	ARA					1	2	081	-16	085	-1	3A				DR	3A	
62	SU59465050	ARA					1	2	082	-15	082	-4	3A				DR	2	IMPQDR
63	SU59455025	ARA					1	2	083	-10	086	4	3A				DR	3A	
64	SU59455010	ARA					1	2	077	-16	080	-2	3A				DR	3A	3A3B
65	SU59755010	ARA					1	2	091	-6	095	9	3A				DR	3A	
66	SU59755020	ARA					1	2	084	-13	088	2	3A				DR	3A	
67	SU59865040	ARA					1	2	078	-19	081	-5	3A				DR	3A	
68	SU59945050	ARA					1	2	085	-12	090	4	3A				DR	3A	
69	SU59755065	ARA					1	2	089	-8	092	6	3A				DR	2	IMPQDR
70	SU59605070	ARA					1	2	093	-4	096	10	3A				DR	3A	
71	SU59005015	ARA					1	2	070	-27	070	-16	3B				DR	2	IMPQDR
72	SU59005036	ARA					1	2	088	-9	093	7	3A				DR	2	IMPQDR
73	SU59005055	ARA					1	2	088	-9	099	13	3A				DR	2	IMPQDR
74	SU59055070	ARA					1	2	114	17	107	21	2				DR	2	
75	SU58805054	ARA					1	3A	118	21	110	24	2				WK	3A	
76	SU58505030	ARA					1	2	083	-14	090	4	3A				DR	2	IMPQDR
77	SU58505010	ARA					1	3A	063	-34	063	-23	3B				WK	3A	IMPQDR

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
78	SU58705005	ARA					1	2	063	-30	063	-19	3B				DR	3A	IMPQDR
79	SU58954990	ARA					1	2	080	-17	080	-6	3A				DR	2	IMPQDR
80	SU58854974	ARA					1	3A	071	-22	071	-11	3B				WK	3A	IMPQDR
81	SU58804960	ARA				028	3	3B	075	-18	076	-6	3A				WE	3B	SPL
82	SU58804930	ARA					1	3A	079	-14	084	2	3A				WK	3A	3ADR
83	SU58604930	ARA					1	3A	100	7	097	15	2				WK	3A	
84	SU58404930	ARA					1	3A	080	-13	080	-2	3A				WK	3A	IMPQDR
85	SU58204930	ARA					1	3A	064	-29	064	-18	3B				WK	3A	IMPX2QDR
86	SU58454957	ARA					1	3A	089	-4	091	9	3A				WK	3A	ALSO3ADR
87	SU58204978	ARA				062	3	3B	115	22	108	26	2				WE	3B	WC3-2
88	SU58404980	ARA				040	3	3B	091	-2	103	21	3A				WE	3B	IMPQWC
89	SU58604980	ARA					1	3A	086	-7	093	11	3A				WK	3A	IMPQDR
90	SU58204850	ARA					1	3A	080	-10	086	8	3A				WK	3A	IMPQDR
91	SU58354840	ARA					1	2	084	-6	091	13	3A				DR	2	IMPQDR
92	SU58504830	ARA					1	2	077	-13	081	3	3A				DR	3A	STONYTOP
93	SU58604815	ARA					1	3A	081	-7	086	10	3A				WK	3A	
94	SU58724802	ARA					1	2	088	0	094	18	3A				DR	3A	
95	SU58714833	ARA					1	3A	086	-2	092	16	3A				WK	3A	3ADR
96	SU58674843	ARA					1	2	093	3	096	18	3A				DR	3A	
97	SU58524856	ARA					1	2	083	-7	090	12	3A				DR	2	IMPQDR
98	SU58354862	ARA					1	2	054	-36	054	-24	3B				DR	3A	IMPX2QDR
99	SU58304870	ARA			038	038	4	4	079	-11	080	2	3A				WE	4	SPL
100	SU58164880	ARA				040	3	3B	077	-13	077	-1	3A				WE	3B	IMPX2QWE
101	SU58604870	ARA					2	3A	101	11	094	16	2				WK	3A	NOGLEY
102	SU58804865	ARA					1	3A	090	0	093	15	3A				DR	3A	3AWK
103	SU58924873	ARA				025	3	4	106	16	095	17	2				WE	4	REDFIG8
104	SU58854898	ARA					1	3A	087	-3	095	17	3A				WK	3A	IMPQDR
105	SU58904910	ARA					1	3A	091	1	102	24	3A				WK	3A	IMP
106	SU59005020	ARA					1	2		0		0					WK	2	TS SIEVED
107	SU59005030	ARA					1	2		0		0					WK	2	TS SIEVED
108	SU58255005	ARA					1	3A	083	-7	087	9	3A				WK	3A	IMPQDRX2
109	SU58764884	ARA					1	3B	092	2	089	11	3A				WK	3B	CLAYTOP
110	SU59054890	STB	E	02			1	2	090	-3	098	16	3A				WK	2	I60XX110
111	SU58304845	ARA					1	2	000	0	000	0					WK	2	TS SEIVED
112	SU58404842	ARA					1	2	000	0	000	0					WK	2	TS SEIVED
113	SU58494832	ARA					1	2	000	0	000	0					WK	2	TS SEIVED
114	SU58664810	ARA					1	3A	000	0	000	0					WK	3A	TS SEIVED
115	SU58474838	ARA					1	2	000	0	000	0					WK	2	TS SEIVED
116	SU58224852	ARA					1	3A	000	0	000	0					WK	3A	TS SEIVED
117	SU59404910	PLO	E	03			1	2	078	-13	083	5	3A				DR	3A	CH25
118	SU59304910	PLO	E	01			1	2	077	-14	081	3	3A				DR	3A	CH25
119	SU59204910	PLO	W	02			1	2	076	-15	080	2	3A				DR	3A	CH25

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
120	SU59504920	PLO	N	01			1	2	097	6	096	18	2				WK	2	IMP40
121	SU59204920	PLO	N	01			1	2	081	-10	086	8	3A				DR	3A	IMP35
122	SU59204930	PLO					1	2	078	-13	082	4	3A				DR	3A	
123	SU59404930	PLO	N	01			1	2	134	43	108	30	1				WK	2	
124	SU59504930	PLO	NE	02			1	2	085	-6	088	10	3A				DR	3A	
125	SU59404900	CER	E	03			1	2	089	-2	094	16	3A				DR	2	IMP60
126	S058304890	CER	N	01			1	2	083	-8	088	10	3A				DR	3A	IMP35
127	SU58404890	CER	NE	03			1	2	080	-11	083	5	3A				DR	2	IMP60
128	SU59104870	CER	E	04			1	3A	085	-6	090	12	3A				WK	3A	IMP60
129	SU59204870	CER	N	02			1	2	082	-9	087	9	3A				DR	3A	IMP35
130	SU59304870	CER	N	02			1	2	072	-19	075	-3	3A				DR	3A	
131	SU59204860	CER	N	02			1	2	079	-12	083	5	3A				DR	3A	IMP40
132	SU59004850	CER					1	2	092	1	092	14	3A				DR	3A	
133	SU59104850	CER	N	02			1	2	105	14	097	19	2				WK	2	
134	SU59204850	CER	N	02			1	2	094	3	094	16	3A				DR	3A	IMP45
135	SU59204840	CER	N	01			1	3A	079	-12	084	6	3A				WK	3A	IMP35

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-29	mcl	10YR42 00						4	0	HR	8						
	29-38	hcl	10YR44 00						0	0	HR	10		M				
	38-73	ch	00CH00 00						0	0		0		P				Y
1P	0-25	mcl	10YR43 00						2	0	HR	5						
	25-55	mcl	75YR44 00						0	0	HR	15		M				
	55-80	hcl	75YR44 00						0	0	HR	20		M				
2	0-26	mzcl	10YR53 00						0	0	HR	2						Y
	26-61	ch	00CH00 00						0	0		0		P				Y
2P	0-25	hcl	10YR43 00						4	0	HR	9						
	25-30	c	05YR46 00				00MN00 00		0	0	HR	2		M				
	30-100	c	05YR46 00	00MN00 00	M		05YR54 00		0	0	HR	2	MCAB VM	P	Y		Y	
3	0-28	mcl	10YR43 00						0	0	HR	5						
	28-45	mcl	10YR46 00						0	0	CH	10		M				Y
	45-80	ch	00CH00 00						0	0		0		P				Y
3P	0-25	mcl	10YR42 00						2	0	HR	7						
	25-65	hcl	75YR43 00						0	0	HR	17		M				
	65-90	hcl	75YR44 00						0	0	CH	30		M				
4	0-29	mcl	10YR42 00						0	0	HR	2						
	29-45	c	10YR43 00	10YR56 00	F				0	0		0		M				
	45-68	c	10YR43 00	10YR56 00	C		00MN00 00	S	0	0		0		M				
	68-103	ch	00CH00 00						0	0		0		P				Y
4P	0-25	mcl	10YR53 00						2	0	HR	5						Y
	25-60	ch	00ZZ00 00						0	0		0		P				
5	0-29	mcl	10YR42 00						0	0	HR	2						
	29-64	ch	00CH00 00						0	0		0		P				Y
5P	0-28	mcl	10YR42 00						0	0	HR	2						
	28-60	hcl	10YR44 00						0	0	HR	2	MDCSAB FR	M	Y			
	60-80	c	05YR44 00				00MN00 00		0	0	HR	2	MDCSAB FM	M	Y			
6	0-29	mcl	10YR42 00						0	0	HR	5						
	29-35	mcl	10YR46 00						0	0	HR	5		M				Y
	35-70	ch	00CH00 00						0	0		0		P				Y
6P	0-26	mcl	10YR43 00						2	0	HR	5						
	26-58	c	75YR46 00	00MN00 00	F				0	0	HR	2	MCSAB FR	M	Y			
	58-68	c	75YR44 54	00MN00 00	F				0	0	HR	2	MCSAB FM	M	Y			
	68-80	c	25YR46 00	00MN00 00	M				0	0	HR	25		M				
7	0-29	mcl	10YR42 00						0	0	HR	2						
	29-52	hcl	10YR44 00						0	0	HR	2		M				
	52-58	mzcl	10YR64 00						0	0	CH	50		P				Y
	58-93	ch	00CH00 00						0	0		0		P				Y

				----MOTTLES-----			PED		----STONES----				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
7P	0-25	mcl	10YR43 00						3	0	HR	8						
	25-45	hcl	10YR44 00						0	0	HR	2	MDCSAB FR	M		Y		
	45-80	c	75YR56 54				00MN00	00	0	0	HR	2	MDCSAB FM	M		Y		
8	0-29	mcl	10YR42 00						0	0	HR	3						
	29-45	hcl	10YR44 00						0	0	CH	10		M				Y
	45-50	mzcl	10YR74 00						0	0	CH	20		M				Y
9	0-28	mcl	10YR43 00						0	0	HR	2						
	28-60	c	75YR46 00						0	0	HR	3		M				
10	0-28	hcl	10YR42 00						0	0	HR	2						
	28-40	c	75YR44 00	75YR56 00	M		00MN00	00 S	0	0		0		P				
	40-75	ch	00CH00 00						0	0		0		P				Y
11	0-29	mcl	10YR42 00						0	0	HR	5						
	29-60	mcl	10YR64 00						0	0	CH	20		M				
	60-95	ch	00CH00 00						0	0		0		P				Y
12	0-25	mzcl	10YR64 00						0	0	CH	5						Y
	25-37	mzcl	10YR74 00						0	0	CH	30		M				Y
	37-72	ch	00CH00 00						0	0		0		P				Y
13	0-32	mcl	10YR64 00						0	0	CH	5						Y
	32-67	ch	00CH00 00						0	0		0		P				Y
14	0-29	mcl	10YR43 00						0	0	HR	2						
	29-38	mcl	10YR44 00						0	0	HR	5		M				Y
	38-60	mcl	10YR74 00						0	0	CH	40		M				Y
15	0-28	mcl	10YR43 00						0	0	HR	3						
	28-40	hcl	10YR44 00						0	0	HR	10		M				
16	0-28	mcl	10YR43 00						0	0	HR	3						
	28-63	ch	00CH00 00						0	0		0		P				Y
17	0-29	mcl	10YR43 00						0	0	HR	2						
	29-40	hcl	10YR44 00						0	0	HR	10		M				
18	0-34	mcl	10YR43 00						0	0	HR	2						
	34-65	hcl	10YR44 00						0	0	HR	5		M				
	65-85	hcl	10YR43 00						0	0	CH	15		M				Y
	85-90	mzcl	10YR74 00						0	0	CH	30		M				Y
19	0-32	mzcl	10YR43 00						0	0	HR	4						Y
	32-67	ch	00CH00 00						0	0		0		P				
20	0-29	mzcl	10YR43 00						5	0	HR	10						
	29-40	mcl	10YR44 00						0	0	HR	20		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
21	0-26	mzcl	10YR43 00						0	0	HR	10						Y
	26-61	ch	00CH00 00						0	0		0		P				Y
22	0-27	mzcl	10YR43 00						0	0	HR	5						Y
	27-62	ch	00CH00 00						0	0		0		P				Y
23	0-28	mzcl	10YR43 00						0	0	HR	5						
	28-63	ch	00CH00 00						0	0		0		P				Y
24	0-25	mzcl	10YR42 00						0	0	HR	3						Y
	25-60	ch	00CH00 00						0	0		0		P				Y
25	0-35	mzcl	10YR42 00						0	0	HR	5						
	35-45	mcl	10YR44 00						0	0	HR	5		M				
	45-60	mcl	75YR44 00						0	0	HR	5		M				
	60-65	hcl	75YR44 00						0	0	HR	10		M				
26	0-28	hcl	10YR42 00						0	0	HR	5						
	28-65	c	75YR46 00	10YR56 00	F		00MN00 00		0	0	HR	5		M				
	65-70	hcl	10YR74 00						0	0	CH	20		M				Y
27	0-28	mzcl	10YR42 00						0	0	HR	4						
	28-63	ch	00CH00 00						0	0		0		P				Y
28	0-28	mzcl	10YR43 00						0	0	HR	3						
	28-63	ch	00CH00 00						0	0		0		P				Y
29	0-28	mzcl	10YR43 00						0	0	HR	5						
	28-45	hcl	75YR46 00						0	0	HR	5		M				
	45-55	c	75YR46 00						0	0	HR	20		M				
30	0-28	mcl	10YR43 00						5	0	HR	10						
	28-40	hcl	75YR46 00						0	0	HR	15		M				
31	0-26	mcl	10YR43 00						0	0	HR	5						
	26-35	hcl	75YR46 00						0	0	HR	5		M				
	35-62	c	75YR46 00	75YR56 00	F		00MN00 00		0	0	HR	10		M				
	62-97	ch	00CH00 00						0	0		0		P				
32	0-29	mcl	10YR43 00						0	0	HR	5						
	29-40	hcl	75YR44 00						0	0	HR	5		M				
	40-60	c	75YR46 00						0	0	HR	10		M				
	60-95	ch	00CH00 00						0	0		0		P				
33	0-28	mcl	10YR43 00						0	0	HR	3						
	28-35	mcl	10YR44 00						0	0	CH	30		M				Y
	35-70	ch	00CH00 00						0	0		0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
34	0-28	mcl	10YR43 00						0	0	HR	3							
	28-40	mcl	10YR64 00						0	0	CH	10		M				Y	
	40-75	ch	00CH00 00						0	0		0		P				Y	
35	0-32	mcl	10YR43 00						0	0	HR	3						Y	
	32-67	ch	00CH00 00						0	0		0		P				Y	
36	0-28	mzcl	10YR43 00						0	0	HR	3							
	28-63	ch	00CH00 00						0	0		0		P				Y	
37	0-27	mcl	10YR43 00						0	0	HR	3							
	27-40	hcl	75YR44 00						0	0	HR	5		M					
	40-48	c	75YR46 00						0	0	HR	5		M					
	48-83	ch	00CH00 00						0	0		0		P				Y	
38	0-27	mcl	10YR43 00						0	0	HR	5							
	27-40	hcl	75YR44 00						0	0	HR	5		M					
	40-60	c	75YR46 00						0	0	HR	10		M					
39	0-32	mcl	10YR43 00						4	0	HR	10							
	32-67	ch	00CH00 00						0	0		0		P				Y	
40	0-28	mcl	10YR43 00						4	0	HR	10							
	28-38	hcl	10YR64 00						0	0	CH	40		M				Y	
	38-73	ch	00CH00 00						0	0		0		P				Y	
41	0-26	mzcl	10YR43 00						0	0	HR	5							
	26-35	mzcl	10YR74 00						0	0	CH	40		M				Y	
	35-70	ch	00CH00 00						0	0		0		P				Y	
42	0-35	hcl	10YR43 00						5	0	HR	10							SEIVED TOPSOIL
43	0-30	mcl	10YR43 00						0	0	HR	8							
	30-65	ch	00CH00 00						0	0		0		P				Y	
44	0-28	hcl	10YR43 00						4	0	HR	10							
	28-90	c	05YR46 00				00MN00 00		0	0	HR	2		P	Y		Y		
	90-100	ch	00CH00 00						0	0		0		P			Y	Y	
45	0-26	hcl	10YR43 00						4	0	HR	10							
	26-120	c	05Y 46 00				00MN00 00		0	0	HR	5		P			Y		
46	0-28	hcl	10YR42 00						0	0	HR	5							
	28-40	hcl	10YR43 00						0	0	HR	10		M					
47	0-28	hcl	10YR43 00						0	0	HR	5							
	28-45	hcl	10YR44 00						0	0	HR	3		M					
	45-70	c	10YR44 00	10YR56 00	F		00MN00 00		0	0	HR	5		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
48	0-28	hcl	10YR43 00						0	0	HR	4						
	28-45	c	75YR56 00				00MN00	00	0	0	HR	5		M				
	45-50	c	05YR56 00				00MN00	00	0	0	HR	10		P				
49	0-28	mcl	10YR42 00						0	0	HR	3						
	28-56	hcl	10YR44 00						0	0	HR	2		M				
	56-66	hcl	10YR46 00						0	0	HR	3		M				
	66-100	c	75YR46 00				00MN00	00	0	0	HR	3		M				
50	0-28	hcl	10YR43 00						2	0	HR	7						
	28-35	c	75YR44 00						0	0	CH	5		M				
	35-45	c	75YR44 00						0	0	CH	20		M				
51	0-20	mzcl	10YR43 00						2	0	HR	7						
	20-55	hzcl	10YR54 00						0	0	HR	15		M				
52	0-20	hzcl	10YR43 00						5	0	HR	10						
	20-35	c	75YR44 00						0	0	HR	20		M				
53	0-25	hcl	10YR43 00						2	0	HR	7						
	25-45	c	75YR44 00						0	0	HR	10		M				
54	0-28	mzcl	10YR43 00						5	0	HR	15						
	28-32	mzcl	10YR54 00						0	0	CH	50		M				
	32-67	ch	00CH00 00						0	0		0		P				
55	0-20	mzcl	10YR43 00						5	0	CH	15						
	20-30	hzcl	10YR54 00						0	0	CH	20		M				
	30-65	ch	00CH00 00						0	0		0		P				
56	0-20	mcl	10YR43 00						2	0	HR	5						
	20-55	c	75YR44 00						0	0	HR	10		M				
57	0-25	mzcl	10YR43 00						1	0	HR	4						
	25-45	hzcl	75YR44 00						0	0	HR	5		M				
58	0-28	hcl	10YR43 00						1	0	HR	4						
	28-55	c	75YR44 00	00MN00	00	C			0	0	HR	2		M				
59	0-30	hcl	10YR43 00						4	0	HR	10						
	30-70	c	75YR54 00						0	0	HR	5		M				
60	0-30	mzcl	10YR43 00						2	0	CH	10						
	30-65	ch	00CH00 00						0	0		0		P				
61	0-28	mzcl	10YR42 00						2	0	HR	7						
	28-63	ch	00CH00 00						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
62	0-28	mzcl	10YR43 00						2	0	HR	7						
	28-50	hcl	10YR54 00						0	0	HR	10		M				
63	0-28	mzcl	10YR43 00						2	0	CH	7						
	28-63	ch	00CH00 00						0	0		0		P				
64	0-25	mzcl	10YR43 00						1	0	HR	6						
	25-60	ch	00CH00 00						0	0		0		P				
65	0-25	mzcl	75YR33 00						4	0	HR	10						
	25-38	hzcl	10YR54 00						0	0	HR	10		M				
	38-73	ch	00CH00 00						0	0		0		P				
66	0-30	mzcl	10YR43 00						2	0	HR	7						
	30-65	ch	00CH00 00						0	0		0		P				
67	0-25	mzcl	10YR43 00						0	0	CH	5						
	25-60	ch	00CH00 00						0	0		0		P				
68	0-32	mzcl	10YR43 00						4	0	HR	10						
	32-67	ch	00CH00 00						0	0		0		P				
69	0-25	mzcl	75YR33 00						2	0	HR	5						
	25-55	hzcl	10YR64 00						0	0	CH	20		M				
70	0-20	mzcl	75YR33 00						2	0	HR	7						
	20-40	c	75YR54 00						0	0	HR	5		M				
	40-75	ch	00CH00 00						0	0		0		P				
71	0-25	mcl	75YR33 00						5	0	HR	10						
	25-45	hcl	75YR44 00						0	0	HR	10		M				
72	0-28	mcl	75YR33 00						7	0	HR	12						
	28-60	hcl	75YR54 00						0	0	HR	5		M				
73	0-25	mcl	10YR43 00						5	0	HR	10						
	25-65	c	75YR54 00						0	0	HR	10		M				
74	0-28	mcl	75YR33 00						7	0	HR	12						
	28-55	c	75YR54 00						0	0	HR	5		M				
	55-65	c	75YR44 00	000C00 00	C			S	0	0	HR	2		M				
	65-100	ch	00CH00 00					S	0	0		0		P				
75	0-28	hcl	10YR43 00						5	0	HR	10						
	28-60	c	75YR54 00	00MN00 00	C				0	0	HR	5		M				
	60-100	c	75YR54 00	000C00 00	C			S	0	0	HR	2		M				
76	0-28	mcl	10YR43 00						5	0	HR	10						
	28-60	c	75YR54 00						0	0	HR	15		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	>2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
77	0-28	hcl	10YR43 00						2	0	HR	7						
	28-40	c	75YR54 00						0	0	HR	20		M				
78	0-28	mcl	10YR43 00						5	0	HR	10						
	28-40	hcl	75YR54 00						0	0	HR	10		M				
79	0-28	mzcl	75YR33 00						4	0	HR	10						
	28-50	hcl	75YR54 00						0	0	HR	10		M				
80	0-28	hcl	10YR42 00						4	0	HR	9						
	28-45	c	10YR44 00						0	0	HR	10		M				
81	0-28	hcl	10YR42 00						4	0	HR	9						
	28-52	c	75YR54 00	000C00 00	C		00MN00 00	S	0	0	HR	5		P	Y		Y	
82	0-30	hcl	10YR53 00						4	0	HR	10						
	30-65	ch	00CH00 00						0	0		0		P				
83	0-28	hcl	10YR43 00						7	0	HR	12						
	28-38	c	75YR54 00						0	0	HR	5		M				
	38-48	c	10YR64 00						0	0	CH	15		M				
	48-83	ch	00CH00 00						0	0		0		P				
84	0-32	hcl	10YR43 00						4	0	HR	9						
	32-50	c	10YR64 00						0	0	HR	5		M				
85	0-28	hcl	10YR43 00						4	0	HR	9						
	28-40	hcl	10YR54 00						0	0	HR	5		M				
86	0-28	hcl	10YR43 00						4	0	HR	9						
	28-40	c	75YR44 00	000C00 00	C			S	0	0	HR	5		P	Y			
	40-75	ch	00CH00 00						0	0		0		P				
87	0-30	hcl	10YR43 00						4	0	HR	9						
	30-62	c	25YR46 00	000C00 00	C		00MN00 00	Y	0	0	HR	5		M				
	62-100	c	25YR36 00	000C00 00	C		00MN00 00	Y	0	0	HR	2		P	Y		Y	
88	0-25	hcl	10YR43 00						4	0	HR	9						
	25-40	c	25YR46 00						0	0	HR	2		M				
	40-70	c	25YR46 00	000C00 00	C		00MN00 00		0	0	HR	2		P	Y		Y	
89	0-30	hcl	10YR42 00						4	0	HR	9						
	30-60	c	10YR54 00						0	0	HR	10		M				
90	0-28	hcl	10YR53 00						7	0	HR	12						
	28-60	c	75YR54 00						0	0	HR	20		M				
91	0-30	mcl	10YR43 00						7	0	HR	12						
	30-60	c	75YR54 00						0	0	HR	10		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
92	0-28	mzcl	10YR43 00						10	0	HR	15						
	28-63	ch	00CH00 00						0	0		0		P				
93	0-32	hcl	10YR42 00						7	0	HR	12						
	32-67	ch	00CH00 00						0	0		0		P				
94	0-28	mcl	10YR43 00						7	0	HR	12						
	28-45	c	10YR54 00						0	0	HR	10		M				
	45-70	ch	00CH00 00						0	0		0		P				
95	0-25	hcl	10YR43 00						4	0	HR	9						
	25-35	c	75YR44 00						0	0	HR	2		M				
	35-70	ch	00CH00 00						0	0		0		P				
96	0-25	mzcl	10YR43 00						4	0	HR	9						
	25-40	c	75YR44 00						0	0	HR	7		M				
	40-75	ch	00CH00 00						0	0		0		P				
97	0-25	mcl	10YR43 00						7	0	HR	12						
	25-60	c	10YR54 00						0	0	CH	30		M				
98	0-25	mcl	10YR43 00						7	0	HR	12						
	25-35	hcl	10YR54 00						0	0	HR	10		M				
99	0-25	hcl	10YR43 00						4	0	HR	9						
	25-38	c	10YR54 00	000C00 00 C			00MN00 00	S	0	0	HR	2		M				
	38-52	c	10YR53 00	000C00 00 M			00MN00 00	Y	0	0		0		P	Y		Y	
100	0-28	hcl	10YR43 00						4	0	HR	9						
	28-40	c	10YR54 00						0	0	HR	5		M				
	40-50	c	05YR54 00	000C00 00 F			00MN00 00		0	0	HR	5		P	Y			
101	0-28	hcl	10YR43 00						7	0	HR	12						
	28-55	c	75YR54 00						0	0	HR	2		P				
	55-90	ch	00CH00 00						0	0		0		P				
102	0-25	hcl	10YR43 00						7	0	HR	12						
	25-40	c	75YR54 00						0	0	HR	5		M				
	40-75	ch	00CH00 00						0	0		0		P				
103	0-25	c	10YR43 00						5	0	HR	9						
	25-65	c	05YR46 00	00MN00 00 C					0	0	HR	2		P	Y		Y	
	65-100	ch	00CH00 00						0	0		0		P			Y	
104	0-25	hcl	10YR43 00						5	0	HR	9						
	25-60	c	10YR54 00						0	0	HR	5		M				
105	0-25	hcl	10YR43 00						5	0	HR	9						
	25-65	c	10YR54 00						0	0	HR	5		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
106	0-25	mcl	10YR42 00						8	0	HR	13							
107	0-25	mcl	10YR43 00						7	0	HR	17							
108	0-28	hcl	10YR42 00						4	0	HR	9							
	28-55	c	75YR54 00	00MN00	00	C			0	0	HR	5		M					
109	0-25	c	10YR43 00						7	0	HR	12							
	25-48	c	25YR46 00	00MN00	00	C			0	0	HR	2		P	Y				
	48-83	ch	00CH00 00						0	0		0		P					
110	0-28	mcl	10YR43 00						0	0	HR	2							
	28-45	hcl	10YR44 00						0	0	HR	3		M					
	45-60	c	75YR56 00				00MN00	00	0	0	HR	10		M					
111	0-30	mcl	10YR43 00						2	0	HR	7							SEIVED TOPSOIL
112	0-30	mcl	10YR43 00						7	0	HR	15							SEIVED TOPSOIL
113	0-28	mzcl	10YR43 00						9	0	HR	17							SEIVED TOPSOIL
114	0-32	hcl	10YR42 00						7	0	HR	15							SEIVED TOPSOIL
115	0-30	mcl	10YR43 00						6	0	HR	15							SEIVED TOPSOIL
116	0-28	hcl	10YR53 00						4	0	HR	10							SEIVED TOPSOIL
117	0-25	mzcl	10YR53 00						3	0	HR	7					Y		
	25-65	ch	00CH00 00						0	0	HR	5		P			Y		
118	0-25	mzcl	10YR43 00						5	0	HR	10					Y		
	25-65	ch	00CH00 00						0	0	HR	5		P			Y		
119	0-25	mzcl	10YR43 00						8	0	HR	12					Y		
	25-65	ch	00CH00 00						0	0	HR	5		P			Y		
120	0-28	mzcl	10YR43 00						0	0	HR	8					Y		
	28-40	hzcl	10YR43 81						0	0	HR	10		M			Y		
	40-80	ch	00CH00 00						0	0	HR	5		P			Y		
121	0-27	mzcl	10YR43 00						0	0	HR	10					Y		
	27-67	ch	00CH00 00						0	0		0		P			Y		
122	0-25	mzcl	10YR43 00						5	0	HR	8					Y		
	25-65	ch	00CH00 00						0	0	HR	5		P			Y		
123	0-25	mcl	10YR43 00						5	0	HR	10							
	25-85	mzcl	10YR64 81						0	0	CH	30		M			Y		
	85-120	ch	00CH00 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
124	0-25	mcl	10YR43 00						0	0	HR	8						Y
	25-35	c	75YR46 00				00MN00	00	0	0	HR	3		P				
	35-75	ch	00CH00 00						0	0	HR	5		P				Y
125	0-25	mcl	10YR42 32						0	0	HR	3						Y
	25-60	mcl	10YR43 00						0	0	HR	10		M				Y
126	0-28	mzcl	10YR43 00						5	0	HR	10						Y
	28-68	ch	00CH00 00						0	0		0		P				Y
127	0-25	mcl	10YR42 32						4	0	HR	7						Y
	25-40	mcl	10YR43 00						0	0	HR	15		M				Y
	40-48	mzcl	10YR43 81						0	0	CH	50		P				Y
	48-60	ch	00CH00 00						0	0		0		P				Y
128	0-30	hcl	10YR42 32						0	0	HR	10						
	30-50	c	75YR43 44						0	0	HR	12		M				
	50-60	hcl	75YR43 00				00MN00	00	0	0	HR	20		M				
129	0-29	mzcl	10YR43 00						5	0	HR	15						Y
	29-69	ch	00CH00 00						0	0		0		P				Y
130	0-22	mzcl	10YR53 00						5	0	HR	12						Y
	22-62	ch	00CH00 00						0	0	HR	5		P				Y
131	0-26	mzcl	10YR43 00						3	0	HR	13						Y
	26-66	ch	00CH00 00						0	0		0		P				Y
132	0-27	mcl	10YR43 00						5	0	HR	10						Y
	27-40	c	75YR46 00						0	0	HR	10		M				Y
	40-80	ch	00CH00 00						0	0	HR	5		P				Y
133	0-25	mcl	10YR43 32						0	0	HR	10						Y
	25-40	hcl	10YR44 00						0	0	HR	10		M				Y
	40-50	hzcl	10YR43 00						0	0	CH	20		M				Y
	50-90	ch	00CH00 00						0	0	HR	5		P				Y
134	0-22	mcl	10YR42 00						2	0	HR	7						Y
	22-39	mcl	40YR44 46						0	0	HR	5		M				Y
	39-79	ch	00CH00 00						0	0		0		P				Y
135	0-26	hcl	10YR43 00						7	3	HR	15						Y
	26-29	c	75YR46 00						0	0	HR	15		M				
	29-69	ch	00CH00 00						0	0		0		P				Y

SOIL PIT DESCRIPTION

Site Name : BEGGARWOOD LANE BASINGLP Pit Number : 8P

Grid Reference: SU59404850 Average Annual Rainfall : 851 mm
Accumulated Temperature : 1360 degree days
Field Capacity Level : 184 days
Land Use : Cereals
Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 22	MZCL	10YR43 00	6	11		
22- 37	HZCL	10YR44 00	0	11		MDCSAB
37- 75	CH	10YR81 00	0	50		

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

Drought Grade : 3A APW : 091mm MBW : 2 mm
APP : 093mm MBP : 18 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness