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PROPOSED GOLF COURSE
ADBURY PARK
BURGHCLERE, HAMPSHIRE
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT

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1.0 Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for land at Adbury Park near Burghclere in Hampshire. The work forms part of MAFF's statutory input to the planning application for a golf course.

1.2 Approximately 123 hectares of land relating to the aforementioned site was surveyed in April 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 98 soil auger borings and five soil inspection pits were assessed in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose longterm limitations on its use for agriculture.

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

1.4 At the time of the survey the majority of agricultural land on the site was under cereals and permanent grassland with smaller areas of maize stubble and land that had been recently ploughed. Areas of woodland have been mapped on the site, as have urban land such as tarmac roads and private dwellings and non-agricultural land including a farm track.

1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous survey information for the site.

Table 1 : Distribution of Grades and Subgrades

<u>Grade</u>	<u>Area (ha)</u>	<u>% of Site</u>	<u>% of Agricultural Area</u>
1	2.4	1.9	2.5
2	22.8	18.5	23.3
3a	25.4	20.6	25.9
3b	38.4	31.1	39.2
4	8.9	7.2	<u>9.1</u>
Non Agricultural Land	1.4	1.1	100% (97.9 ha)
Woodland	21.6	17.5	
Urban	1.7	1.5	
Open Water	<u>0.8</u>	<u>0.6</u>	
Total Area of Site	123.4	100%	

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

1.7 The agricultural land on the site is classified as grades 1, 2, 3a, 3b and 4. Land classified as grade 1 comprises deep fine and coarse loamy textured soils with no limitations to its agricultural use while grade 2 land experiences either slight wetness or droughtiness limitations due to sandy or clayey subsoils. Subgrade 3a land suffers wetness and droughtiness limitations to a greater degree due to the presence of slowly permeable clay or very stony

sandy or fine loamy horizons in the upper and lower subsoil. There is often a topsoil stoniness limitation affecting this land as well. Land classified as subgrade 3b experiences a significant wetness limitation. The presence of slowly permeable clay below the topsoil severely impedes drainage through the profile. Also some land within this grade is limited by slope gradients of 7.5-8 degrees. Grade 4 land coincides with lower lying land on the site associated with high groundwater levels. Land is waterlogged with much hydrophilic vegetation and would not respond to artificial drainage. It is therefore severely restricted in its use for agriculture.

2.0 Climate

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

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

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

2.4 No local climatic factors such as exposure or frost risk affect the site. However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. At this locality the relatively high field capacity days and correspondingly low moisture deficits increase the likelihood of soil wetness and reduce that of soil droughtiness.

Table 2 : Climatic Interpolations

Grid Reference :	SU 486 623	SU 486 609	SU 478 615
Altitude (m) :	90	100	125
Accumulated Temperature (days):	1431	1420	1391
Average Annual Rainfall (mm) :	767	790	800
Field Capacity (days) :	168	173	174
Moisture Deficit, Wheat (mm) :	102	99	96
Moisture Deficit, Potatoes (mm) :	92	89	85

3.0 Relief

3.1 The site lies at an altitude ranging between 90-125 metres (A.O.D.) rising from east to west. In the north-west of the site, gradients measured with an optical reading clinometer were found to range between 7.5-8 degrees. Consequently, land on these slopes is classified as Subgrade 3b as gradient has a significant effect upon the safe and efficient use of agricultural machinery.

4.0 Geology and Soil

4.1 The published geological sheets covering the site area (BGS 1971, Sheet 267 (drift): Hungerford and BGS 1975 Sheet 283 (drift): Andover) shows the majority of the site to be underlain by Lower Bagshot Beds. In the north-west of the site there is a small area of plateau gravel mapped, and in the south and north-east of the site small areas of London Clay.

4.2 The published soils information for the area (SSEW 1983, Sheet 6: Soils of South East England, 1:250,000) shows the soils mapped as three distinct series. The majority of the soils over the site are shown to comprise the Wickham 3 Association. These soils are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils, and similar more permeable soils with slight seasonal waterlogging. Some deep

coarse loamy soils affected by groundwater' (SSEW, 1983). Areas in the north-east and south of the site are shown to comprise soils of the Wickham 4 Association. These soils coincide with deposits of London Clay and are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils' (SSEW, 1983). A small strip in the north-west of the site is mapped as soils comprising the Southampton Association. These are described as 'well drained, acid, very flinty sandy soils with a bleached sub-surface horizon. Some sandy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.' (SSEW, 1983). Detailed field examination shows the soils on the site to be of a variable nature, particularly with regards to textures. Drainage characteristics do suggest seasonal waterlogging over much of the site, the severity of which varies. Flinty soils are more extensive across the site than suggested by the published soils information.

5.0 Agricultural Land Classification

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

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

5.3 Grade 1: A small area of land (2.4 ha.) of this quality has been mapped on the central part of the site. Topsoils tend to be very slightly stony (2-3% flints > 2cm & 2-6% total flints v/v), non-calcareous fine sandy loams and fine sandy silt loams. Subsoils are stoneless or very slightly flinty (0-5% total v/v), variable in texture (e.g. medium clay loams, medium sandy loams and others) and show evidence of soil wetness in the form of gleying. Subsoils are permeable, such drainage characteristics equating these soils to Wetness Class II. When considered along with the light, sandy and easily workable topsoils and the field capacity days for the site, the resultant classification is Grade 1. Furthermore, these soils show adequate reserves of water in the profile available for crop growth. Consequently this land has no or very minor limitations to agricultural use, and is capable of supporting a very wide range of agricultural and horticultural crops producing high and consistent yields.

5.4 Grade 2: Areas of land predominantly towards the east of the site have been classified as Grade 2, very good quality land, with soil wetness and droughtiness as the main limitations. Where soil wetness is the main limitation, profiles typically comprise non-calcareous, stoneless or very slightly flinty (0-6% total v/v) medium clay loam or medium silty clay loam topsoils, overlying a heavy clay loam upper subsoil which rests upon clay lower subsoils. Profiles show signs of a soil wetness imperfection in the form of gleying, occurring below the topsoil in many cases. The clay lower subsoil is slowly permeable deep in the profile, causing a slight drainage impedance. These drainage characteristics equate these soils to Wetness Class II. When considered along with the light and workable topsoil texture and the field capacity days for the site, the resultant classification is Grade 2. Soils showing a slight wetness limitation can restrict plant and root development, and are susceptible to structural damage through poaching by grazing livestock and trafficking by machinery.

The remainder of the soils within this mapping unit, particularly isolated in the central part of the site, tend to be of a more sandy nature. Profiles typically comprise a fine sandy silt loam or medium sandy loam topsoil overlying sandy clay, loamy sand or sandy loam subsoils. A combination of soil textures and the local climatic regime means that there is a slight restriction on the amount of water in the profile available for plant growth. Therefore this land can be classified as no better than Grade 2, due to the effect that this droughtiness limitation will have upon crop yields. Profiles are sandy in other parts of this mapping unit, although in these cases soil wetness tends to be the overriding limitation. Pit no. 5 is an example of the soil textures that typically exist within this mapping unit, and demonstrates the variability that occurs across the site.

5.5 Subgrade 3a: Areas of the site totalling 25.4 hectares have been classified as Subgrade 3a, good quality land, with soil droughtiness and wetness as the main limitations. In the

northern half of the site droughtiness tends to be the key limiting factor. Profiles tend to have high flint contents, evidenced by the number of soil observations impenetrable below the topsoil within this mapping unit. Subsequent soil inspection pits (Pit Nos. 1 and 2) were dug to assess soil conditions. Pit no. 1 on high ground in the north of the site, showed the subsoils to comprise very stony sandy textures overlain by a moderately stony (approximately 25% total flints, 11% > 2cm.) fine sandy silt loam topsoil. Subsoils of fine sandy loam and fine loamy sand extend from 28-80 cm, containing an average of approximately 53% total flints. At 80 cm a sandy clay horizon was encountered which contains approximately 40% total flints. Pit no.2 dug further south on the site shows that although stony, soils are of a more loamy texture. A moderately stony (approximately 25% total flints, 12% > 2cm.) medium clay loam topsoil overlies a similar textured subsoil extending to 85cm, where a clay horizon commences. Subsoils are very stony throughout, stone content decreases with depth from approximately 50% total flints in the upper subsoil to approximately 30% total flints in the clay lower subsoil. The two soil inspection pits were dug to a depth of 90cm, therefore assumptions have been made regarding soil conditions below this. However, it is evident that a combination of soil textures, high stone contents and substructural conditions (adversely affected by high stone contents) means that there is a moderate restriction on the amount profile available water for plant growth, which will limit crop yields. Therefore this land can be classified as no better than Subgrade 3a. Furthermore, it should be noted that the topsoils at both pits contain sufficient stones above 2 cm in size to be a moderate limitation, a classification of Subgrade 3a being appropriate. High topsoil stone contents can increase production costs by causing extra wear and tear to agricultural implements and tyres and may impede crop establishment and growth.

In the far south of the site, soil wetness becomes the key limitation for classifying land as Subgrade 3a. Soil textures, particularly subsoils, are variable although topsoils commonly comprise a stoneless medium clay loam. Subsoils become heavier and occasionally sandier with depth. Soils show evidence of a drainage imperfection, gleying commonly occurring below the topsoil. A soil inspection pit (Pit no. 4) shows that the heavy clay loam has a poor substructural condition and is slowly permeable. This slowly permeable layer is sometimes heavier comprising sandy clay or clay elsewhere in the mapping unit, occurring at an average depth of 50 cm. Gleying and the presence of a slowly permeable layer equates these soils to Wetness Class III. In combination with the light topsoil texture and the field capacity days for the site, the resultant classification is Subgrade 3a. These soils show a moderate wetness limitation. Wet soils can restrict plant and root development and are more susceptible to damage resulting from poaching by grazing livestock and trafficking by agricultural machinery.

5.6 Subgrade 3b: The majority of the agricultural land on the site has been classified as Subgrade 3b, moderate quality land, with soil wetness and slope gradient as the main limitations. Soils showing evidence of a significant wetness limitation occur in the central and southern parts of the site. Soil profiles typically comprise a medium (or occasionally heavy) clay loam topsoil overlying heavier textured subsoils. Soils over the majority of this mapping unit tend to show the existence of a clay horizon directly below the topsoil, with gleying from a similar depth. A soil inspection pit (No. 3) proved that the clay subsoil has a poor substructural condition and low porosity and is therefore slowly permeable. Such drainage characteristics equate these soils to Wetness Class IV. The resultant classification for this land is Subgrade 3b, once topsoil texture and the field capacity days for the site are taken into consideration. In some areas of this mapping unit, the clay lower subsoil is overlain by a gleyed heavy clay loam upper subsoil. Soil inspection pit no.5 proved the slowly permeable nature of this horizon. Wet soils can severely restrict plant and root development, thereby affecting crop yields. Furthermore, these soils are more susceptible to structural damage through poaching by grazing livestock and trafficking by agricultural machinery. In the north of the site land is classified as Subgrade 3b due to limitations to the safe and efficient use of agricultural machinery posed by the existence of steep slopes (7.5-8°).

5.7 Grade4: Areas of land of this quality have been mapped on various parts of the site that show signs of problems associated with a high groundwater table. This land tended to be waterlogged at the time of survey, with a predominance of hydrophilic plant species such as Juncus spp. This suggests that these soils are waterlogged for long periods throughout the year and they are unlikely to respond favourably to artificial drainage. Therefore Wetness Class V is appropriate for these soils, with a resultant classification of Grade 4. Waterlogged soils restrict plant and root development, also the opportunities for grazing livestock on this land, or working it with agricultural machinery are severely restricted.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

REFERENCES

- * British Geological Survey (1971), Sheet No.267 (drift), Andover, 1:50,000
- * British Geological Survey (1975), Sheet No.283 (drift), Hungerford, 1:63,360
- * MAFF (1988), Agricultural Land Classification of England and Wales : Revised guidelines and criteria for grading the quality of agricultural land.
- * Meteorological Office (1989), Climatological Data for Agricultural Land Classification.
- * Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South East England, 1:250,000, and accompanying legend.

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, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. 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.

¹The 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 Abbreviations - Explanatory Note

Soil Pit Descriptions

Database Printout - Boring Level Information

Database Printout - Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

Boring Header Information

- GRID REF** : national 100 km grid square and 8 figure grid reference.
- 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		
- GRDNT** : Gradient as estimated or measured by a hand-held optical clinometer.
- GLEYSPL** : Depth in centimetres (cm) to gleying and/or slowly permeable layers.
- AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
- MB (WHEAT/POTS)** : Moisture Balance. (Crop adjusted AP - crop adjusted MD)
- DRT** : Best grade according to soil droughtiness.
- 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

- 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. **GLEYS** : 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 **MD** : moderately developed
 ST : strongly developed

ped size **F** : fine **M** : medium
 C : coarse **VC** : very coarse

ped shape **S** : single grain **M** : massive
 GR : granular **AB** : angular blocky
 SAB : sub-angular blocky **PR** : prismatic
 PL : platy

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

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M. REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB					
1	SU48356249	PGR NE	06		1	1	039	-60	039	-50			DR	4	IMPGH 27 Q3B
1P	SU48106220	PLO		065	1	1	095	-4	066	-23	3A		DR	3A	ALSO TS STONES
2	SU48616251	CER N	02	050 070	2	2	138	39	116	27	1		WE	2	
2P	SU47966167	CER		085	1	1	098	-1	076	-13	3A		DR	3A	ALSO TS STONES
3	SU48346257	PGR E	04	028 028	4	3B		0		0			WE	3B	
3P	SU48206160	CER		0 027	4	3B		0		0			WE	3B	
4	SU48386253	PGR E	02	080	1	1	154	55	116	27	1			1	
4P	SU48206130	CER N	02	028 050	3	3A		0		0			WE	3A	PIT TO 120
5	SU48416249	MZE S	03	030	2	1	053	-46	053	-36	3B		DR	3B	IMPGH 45
5P	SU48206130	CER N	02	055	1	1	164	65	119	30	1			1	PIT TO 120
6	SU48506240	CER S	02		1	1	061	-38	061	-28	3B		DR	3B	IMPGH 50
7	SU48606240	CER N	01	060 060	3	2	133	34	118	29	1		WE	2	
8	SU48706240	CER E	01	045 065	2	2	138	39	115	26	1		WE	2	
9	SU48206230	SAS E	01		1	1	046	-53	046	-43	4		DR	4	IMP30 AS PIT 1
10	SU48306230	SAS E	06	028 035	4	3B		0		0			WE	3B	
11	SU48406230	SAS S	03	058 058	3	3A		0		0			WE	3A	
12	SU48506230	CER S	03	050 078	2	2		0		0			WE	2	
13	SU48606230	CER S	04	055	1	1	187	88	129	40	1			1	
14	SU48706230	PGR		0	2	2	199	100	136	47	1		WE	2	
15	SU48106220	STB			1	1	043	-56	043	-46	4		DR	4	IMP 40 AS PIT
16	SU48206220	STB E	07	035 065	3	3A	119	20	117	28	2		SL	3B	7.5 DEGREES
17	SU48306220	PGR		030 055	3	3A		0		0			WE	3A	
18	SU48406220	PGR		0 028	4	3B		0		0			WE	3B	
19	SU48506220	STB		030 060	3	3A	129	30	106	17	2		WE	3A	
20	SU48606220	CER			1	1	058	-41	058	-31	3B		DR	3B	IMP 40 ALSO WE
21	SU48706220	CER		030	2	2	156	57	114	25	1		WE	2	
24	SU48206210	SAS E	08	028	2	2	156	57	118	29	1		SL	3B	8 DEGREES
27	SU48506210	CER W	04	060	1	1	155	56	117	28	1			1	SL. GLEYED 55
28	SU48606210	CER SW	02	075	1	1	157	58	119	30	1			1	
29	SU48706210	CER NE	01	033	2	2	159	60	121	32	1		WE	2	
33	SU48306200	PGR		030	2	2	073	-26	073	-16	3B		DR	3B	4 WETNESS
36	SU48606200	CER E	01	030 075	2	2	132	33	114	25	1		WE	2	BDR WC 2/3
37	SU48706200	CER		028 042	4	3B		0		0			WE	3B	IMPGH 90
38	SU48106190	PGR			1	1	066	-33	066	-23	3B		DR	3B	IMP 45 Q3A
39	SU48206190	PGR		0	2	2	178	79	131	42	1		WE	2	
41	SU48406190	CER N	02	028	2	1	176	77	121	32	1			1	
42	SU48506190	CER		0 045	3	3A		0		0			WE	3A	
44	SU48706190	CER		033	2	2	061	-38	061	-28	3B		DR	3B	IMPGH 45 Q3A
45	SU48006180	CER W	02	028 028	4	3B		0		0			WE	3B	
46	SU48106180	CER		025 025	4	3B		0		0			WE	3B	
47	SU48206180	CER E	02		1	1	056	-43	056	-33	3B		DR	3B	IMP40
48	SU48306180	CER			1	1	123	24	107	18	2		DR	2	

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB					
49	SU48406180	CER		038	2	1	161	62	126	37	1			1	
50	SU48506180	CER		029 100	2	1	129	30	100	11	1			1	
52	SU48706180	CER		0	2	3A	072	-27	073	-16	3B		WE	3A	IMP 55
53	SU48006170	CER			1	1	041	-58	041	-48	4		DR	4	IMP30 Q3A 2P
56	SU48306170	CER		030	2	2	147	48	114	25	1		WE	2	
57	SU48406170	CER		030 080	2	2	157	58	127	38	1		WE	2	
58	SU48506170	CER		030	2	2	058	-41	058	-31	3B		DR	3B	IMP 40 Q3A 2P
59	SU48606170	CER		033 050	3	3A	106	7	107	18	2		WE	3A	
60	SU47906160	CER			1	1	064	-35	064	-25	3B		DR	3B	IMP 40 Q3A 2P
63	SU48206160	CER		028 028	4	3B		0		0			WE	3B	
64	SU48306160	CER		032 032	4	3B		0		0			WE	3B	
65	SU48406160	CER		030	2	2	070	-29	070	-19	3B		DR	3B	IMP 50 Q3A
66	SU47806150	CER		028 028	4	3A		0		0			WE	3A	
67	SU47906150	CER E	02	028 035	4	3B		0		0			WE	3B	IMP55
68	SU48006150	MZE E	04	028 058	3	3A	132	33	109	20	1		WE	3A	
68A	SU48006145	MZE SE	02	029 038	4	3B		0		0			WE	3B	
70	SU48206150	CER		025 035	4	3B		0		0			WE	3B	
72	SU48406150	CER		025 025	4	3B		0		0			WE	3B	
73	SU48506150	CER		040	2	2	181	82	138	49	1		WE	2	JUST WC2
74	SU47706140	CER NW	02	035 035	4	3B		0		0			WE	3B	
75	SU47806140	CER E	04	036 036	4	3A		0		0			WE	3A	
76	SU48006140	MZE SE	03	024 024	4	3B		0		0			WE	3B	
77	SU48206140	CER N	01	033 040	4	3B		0		0			WE	3B	
78	SU48306140	CER NE	01	040 080	2	2	146	47	116	27	1		WE	2	
79	SU48406140	CER N	01	0 050	3	3A	155	56	117	28	1		WE	3A	AS PIT 4
80	SU48506140	CER		050 050	3	2	179	80	133	44	1		WE	2	
81	SU48606140	CER		025 065	3	2	181	82	131	42	1		WE	2	
82	SU47806130	CER E	04	028 048	3	2		0		0			WE	2	
83	SU48106130	CER N	02	028 028	4	3B		0		0			WE	3B	
84	SU48206130	CER N	01	035 085	2	2	144	45	114	25	1		WE	2	
85	SU48306130	CER N	01	030 095	2	2	143	44	110	21	1		WE	2	
86	SU48406130	CER E	01	030	2	2	150	51	110	21	1		WE	2	
87	SU48506130	CER		030 060	3	3A		0		0			WE	3A	
88	SU48606130	CER		0 040	4	3B		0		0			WE	3B	
89	SU48006120	MAZ W	01	0 050	3	3A		0		0			WE	3A	
90	SU48106120	MAZ		029	2	2		0		0			WE	2	
91	SU48206120	CER E	03	0 076	2	2	140	41	113	24	1		WE	2	BDR WC2/3
92	SU48306120	CER SE	02	058 098	1	1	156	57	112	23	1		WE	1	SLI GLEY 43
93	SU48406120	CER SE	01	027 105	2	2	147	48	112	23	1		WE	2	
94	SU48506120	CER NW	03	0 029	4	3B		0		0			WE	3B	
96	SU48706120	MAZ N	05	0 038	4	3B		0		0			WE	3B	
97	SU48806120	MZE NE	02	035 035	4	3B		0		0			WE	3B	

SAMPLE NO.	GRID REF	ASPECT		--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
		USE	GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
98	SU47906110	PGR	SW	02	025	048	3	3A		0	0					WE	3A	
99	SU48006110	STB	S	02	025	025	4	3B		0	0					WE	3B	
100	SU48106110	CER	SW	03	027	045	4	3B		0	0					WE	3B	
102	SU48326112	CER			0	050	3	3A		0	0					WE	3A	
103	SU48456112	CER	SW	04	025	025	4	3B		0	0					WE	3B	
105	SU48606110	MAZ	S	02	0	028	4	3B	000	0	000	0				WE	3B	
106	SU48706110	CER	S	05	035	045	4	3B		0	0					WE	3B	
107	SU48006100	PGR	SW	01	030		2	2	137	38	098	9	2			WE	3A	WET GROUND Q3A
108	SU48106100	PGR			0	024	4	3B		0	0					WE	3B	
110	SU48126092	PGR			027	049	3	3A		0	0					WE	3A	
111	SU48486083	PGR			070		2	02	086	-13	087	-2	3A			DR	3A	IMP52
113	SU48606100	CER	S	02	02	034	4	3B		0	0					WE	3B	
114	SU48206090	PGR			025	050	3	3A		0	0					WE	3A	
114A	SU48226091	PGR			025		2	2	073	-26	073	-16	3B			DR	3B	IMP 45 Q3A
115	SU48306090	PGR					1	1	052	-47	052	-37	3B			DR	3B	IMP38 Q3A
116	SU48406090	PGR					1	1	065	-34	065	-24	3B			DR	3B	IMP 47 Q3A
117	SU48506090	LEY	S	02	0	030	4	3B		0	0					WE	3B	IMP 60
118	SU48606090	CER	S	02	0		2	2	153	54	113	24	1			WE	2	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- PED			----STONES-----			STRUCT/	SUBS	IMP	SPL	CALC				
				COL	ABUN	CONT	COL.	GLE	>2						>6	LITH	TOT	CONSIST
1	0-25	ms1	10YR31 00							0	0	HR	10					
	25-27	gh	10YR54 00							0	0		0	P	IMP 27			
1P	0-28	fsz1	10YR21 00							11	0	HR	25					
	28-45	fs1	10YR42 00							0	0	HR	56	P				
	45-65	lfs	10YR51 00							0	0	HR	53	P				
	65-80	fs1	10YR41 53	75YR58	00	C			Y	0	0	HR	50	P				
	80-120	sc	05Y 62 00	75YR58	00	M			Y	0	0	HR	40	M				
2	0-33	mc1	10YR43 00							0	0	HR	3					
	33-50	mc1	10YR53 63	10YR56	00	F				0	0	HR	3	M				
	50-65	hc1	10YR53 62	10YR58	00	C			Y	0	0		0	M				
	65-70	c	10YR62 00	10YR58	00	C			Y	0	0		0	M				
	70-110	c	25Y 62 00	75YR58	00	M			Y	0	0		0	P	Y			
	110-120	c	25Y 51 00	75YR58	00	M			Y	0	0	HR	20	M	Y			
2P	0-30	mc1	10YR42 00							12	0	HR	25					
	30-45	mc1	10YR56 00							0	0	HR	50	P				
	45-85	mc1	10YR56 00							0	0	HR	40	M				
	85-120	c	75YR51 00	05YR56	00	C			Y	0	0	HR	30	M				
3	0-20	mc1	10YR43 00							0	0	HR	10					
	20-28	mc1	10YR43 53							0	0	HR	40	M				
	28-65	c	25Y 52 00	10YR58	00	M			Y	0	0	HR	5	P	Y			
	65-100	c	05GY71 00	10YR58	00	M	25YR56	00	Y	0	0		0	P	Y			
3P	0-27	mc1	10YR52 51	10YR58	00	C			Y	0	0		0					
	27-60	c	25Y 72 00	10YR68	71	M			Y	0	0		0	WKCB	FM	P	Y	Y
4	0-35	mc1	10YR42 00							0	0	HR	2					
	35-55	mc1	10YR42 00	10YR46	00	F	00MN00	00		0	0	HR	5	M				
	55-80	mc1	10YR42 00	10YR46	00	F				0	0		0	M				
	80-120	hc1	25Y 61 00	10YR66	00	C			Y	0	0		0	M				
4P	0-28	mc1	10YR42 00							0	0	HR	3					
	28-50	mc1	10YR53 00	10YR58	00	C			Y	0	0	HR	1	MDCSAB	FR	M		
	50-80	hc1	25Y 62 00	75YR58	00	M			Y	0	0		0	WKCP	FM	P	Y	Y
5	0-30	ms1	10YR32 33							0	0	HR	15					
	30-45	ms1	10YR53 00	10YR56	00	C			Y	0	0	HR	50	M	IMP 45			
5P	0-28	mc1	10YR42 00							0	0	HR	3					
	28-55	mc1	10YR53 00							0	0	HR	1	MDCSAB	FR	M		
	55-86	fs1	25Y 62 00	75YR58	00	C			Y	0	0	HR	1	MDCSAB	FR	M		
	86-100	hc1	25Y 62 00	75YR58	00	C			Y	0	0	HR	1	WKCP	FM	P		
	100-120	lfs	25Y 72 00	10YR68	00	M			Y	0	0	HR	1	MDCPL	FR	M		
6	0-30	ms1	10YR32 00							0	0	HR	10					
	30-45	ms1	10YR43 53							0	0	HR	40	M				
	45-50	gh	10YR64 00							0	0		0	P	IMP 50			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED		----STONES----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR		IMP
7	0-25	msz1	10YR42 00						0	0	HR	3					
	25-40	msz1	10YR44 54						0	0		0		M			
	40-60	msz1	10YR54 00	10YR56 00	F				0	0		0		M			
	60-100	c	10YR53 63	75YR56 66	M				Y	0	0	HR	5		P		Y
	100-110	c	25Y 63 00	75YR58 00	M				Y	0	0	HR	20		M		Y
8	0-33	mc1	10YR43 00						0	0	HR	3					
	33-45	mc1	10YR44 54	10YR56 00	F				0	0		0		M			
	45-65	hc1	10YR53 00	10YR58 00	C				Y	0	0	0		M			
	65-120	c	25Y 63 00	75YR68 00	M				Y	0	0	0		P		Y	
9	0-30	fs1	10YR21 00						0	0	HR	15					IMP 30
10	0-28	mc1	10YR42 00						0	0	HR	2					
	28-35	hc1	10YR53 00	75YR56 00	C		00MN00	00	Y	0	0	0		M			
	35-60	c	25Y 72 00	75YR58 00	M				Y	0	0	0		P		Y	
11	0-28	mc1	10YR42 00						0	0	HR	2					
	28-58	fs1	10YR54 00	10YR56 00	F				0	0		0		M			
	58-120	c	25Y 72 00	75YR58 00	M				Y	0	0	0		P		Y	
12	0-28	mc1	10YR42 00						2	0	HR	5					
	28-50	mc1	10YR54 00						0	0	HR	15		M			
	50-78	mc1	10YR53 00	10YR56 00	C				Y	0	0	HR	5		M		
	78-120	c	10YR53 00	75YR56 00	M				Y	0	0	HR	10		P		Y
13	0-35	mc1	10YR42 00						2	0	HR	4					
	35-55	fsz1	10YR54 00						0	0		0		M			
	55-65	mc1	10YR53 00	75YR56 00	C		00MN00	00	Y	0	0	0		M			
	65-95	fsz1	10YR53 00	75YR56 00	C		00MN00	00	Y	0	0	0		M			
	95-120	fs1	25Y 74 00	75YR56 00	C				Y	0	0	0		M			
14	0-35	mc1	10YR42 00	10YR56 00	C				Y	0	0	HR	1				
	35-120	fsz1	10YR54 00	10YR56 00	F				S	0	0	0		M			
15	0-30	mc1	10YR41 00						12	0	HR	25					
	30-40	gh							0	0		0		M			IMP 40
16	0-25	hc1	10YR42 00						5	0	HR	8					
	25-35	fsz1	10YR54 00						0	0		0		M			
	35-65	hc1	10YR62 00	10YR58 00	C				Y	0	0	0		M			
	65-90	c	10YR64 00	75YR58 00	M		00MN00	00	Y	0	0	0		P		Y	
17	0-30	mc1	10YR42 00						0	0	HR	3					
	30-55	mc1	10YR64 00	10YR58 00	C				Y	0	0	0		M			
	55-120	c	10YR72 00	10YR58 00	M				Y	0	0	0		P		Y	
18	0-28	mc1	10YR42 00	10YR58 00	C				Y	0	0	0					
	28-65	c	10YR52 00	75YR58 51	M				Y	0	0	0		P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
19	0-30	mc1	10YR41 00						5	0	HR	10						
	30-60	sc1	05Y 62 00	10YR58 00	M		00M00	00	Y	0	0	0			M			
	60-120	c	05Y 71 00	10YR58 00	M		00M00	00	Y	0	0	HR	5		P		Y	
20	0-30	mc1	10YR42 00						5	0	HR	10						
	30-40	mc1	10YR54 00						0	0	HR	45			M			IMP 40
21	0-30	mc1	10YR43 00						0	0		0						
	30-55	sc1	10YR64 00	10YR58 00	C				Y	0	0	0			M			
	55-75	ms1	10YR54 00	10YR58 00	C				Y	0	0	0			M			
	75-120	sc1	10YR64 00	10YR58 00	C				Y	0	0	0			M			
24	0-28	mc1	10YR42 00						0	0		0						
	28-120	mc1	25Y 62 00	75YR58 00	M				Y	0	0	0			M			
27	0-30	mc1	10YR42 00						0	0	HR	2						
	30-55	mc1	10YR54 00	10YR56 00	F				0	0		0			M			
	55-60	mc1	10YR54 52	10YR56 00	C				S	0	0	0			M			SLI GLEY
	60-70	mc1	10YR63 00	10YR56 00	C				Y	0	0	0			M			
	70-90	hc1	10YR63 00	10YR56 00	C				Y	0	0	0			M			
	90-120	hc1	10YR61 00	10YR58 00	M				Y	0	0	0			M			
28	0-30	mzc1	10YR43 00						0	0	HR	3						
	30-55	mc1	10YR54' 00						0	0		0			M			
	55-75	mc1	10YR53 54	10YR56 00	F				0	0		0			M			
	75-90	mc1	10YR52 00	10YR58 00	M				Y	0	0	0			M			
	90-120	hc1	10YR52 00	10YR58 00	M				Y	0	0	0			M			
29	0-33	mzc1	10YR43 00						0	0	HR	2						
	33-60	mc1	10YR53 00	10YR56 00	C				Y	0	0	0			M			
	60-95	mc1	25Y 52 62	10YR58 00	M				Y	0	0	0			M			
	95-120	hc1	25Y 61 00	10YR58 00	M				Y	0	0	0			M			
33	0-30	mc1	10YR42 00						0	0	HR	5						
	30-50	mc1	10YR52 00	10YR58 00	M				Y	0	0	HR	35		M			WATER 50+
36	0-30	mc1	10YR43 00						0	0	HR	2						
	30-45	c	25Y 51 00	10YR56 00	M				Y	0	0	HR	10		M			
	45-75	hc1	25Y 52 00	10YR56 00	M				Y	0	0	HR	2		M			
	75-110	c	25Y 61 00	10YR58 00	M				Y	0	0	HR	10		P		Y	
37	0-28	mc1	10YR42 00						0	0	HR	5						
	28-42	sc1	25Y 61 00	10YR68 00	C				Y	0	0	0			M			
	42-90	sc	05Y 61 00	75YR68 00	M				Y	0	0	HR	5		P		Y	IMP 90
38	0-30	mc1	10YR43 00						0	0	HR	8						
	30-45	mc1	10YR53 00						0	0	HR	35			M			IMP 45

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	
39	0-30	mc1	10YR42 00 10YR58 00 C					Y	0	0	0					
	30-45	fsz1	10YR54 00						0	0	0		M			
	45-75	fs1	10YR56 00						0	0	0		M			
	75-100	sc1	10YR72 00 10YR58 00 C					Y	0	0	0		M			
	100-120	fs1	10YR58 00						0	0	0		M			
41	0-28	fs1	10YR42 00						0	0	HR	4				
	28-45	mc1	10YR53 54 75YR56 00 C					Y	0	0	0		M			
	45-75	fs1	10YR53 00 75YR56 00 C					Y	0	0	0		M			
	75-120	1fs	25Y 72 00 75YR56 00 M					Y	0	0	0		M			
42	0-28	mc1	10YR42 00 10YR58 61 C					Y	0	0	HR	5				
	28-45	mc1	10YR54 00						0	0	0		M			
	45-85	c	10YR64 00 10YR58 00 C					Y	0	0	0		P		Y	
	85-120	c	10YR72 00 10YR58 00 M					Y	0	0	0		P		Y	
44	0-33	mc1	10YR42 00 10YR46 00 F						0	0	HR	10				
	33-40	hc1	10YR53 63 10YR56 00 C					Y	0	0	HR	50		P		
	40-45	gh	10YR63 00						0	0	0		P			IMP 45
45	0-28	hc1	10YR42 00						0	0	HR	2				
	28-60	c	25Y 72 00 75YR58 00 M					Y	0	0	0		P		Y	
46	0-25	mc1	10YR42 00						1	0	HR	3				
	25-60	c	25Y 72 00 75YR58 00 M					Y	0	0	0		P		Y	
47	0-35	mc1	10YR42 00						10	0	HR	20				
	35-40	mc1	10YR43 00						0	0	HR	40		M		IMP 40
48	0-29	ms1	10YR42 00						3	0	HR	6				
	29-70	ms1	10YR54 00						0	0	HR	2		M		
	70-120	1ms	10YR56 00						0	0	0		M			
49	0-29	fsz1	10YR53 00						2	0	HR	4				
	29-38	mc1	10YR53 00						0	0	HR	5		M		
	38-70	hc1	10YR53 54 75YR56 00 C					Y	0	0	0		M			
	70-85	c	10YR53 54 75YR56 00 C					Y	0	0	0		M			
	85-120	hc1	10YR53 54 75YR56 00 C					Y	0	0	0		M			
50	0-29	fs1	10YR54 00						3	0	HR	6				
	29-60	mc1	10YR53 00 10YR56 00 C					Y	0	0	HR	25		M		
	60-100	mc1	25Y 72 00 75YR58 00 C					Y	0	0	HR	20		M		
	100-120	c	25Y 72 00 75YR58 00 M					Y	0	0	0		P		Y	
52	0-25	hc1	10YR42 51 10YR46 00 C					Y	0	0	HR	8				
	25-40	c	25Y 61 00 10YR58 00 M					Y	0	0	HR	10		P		Y
	40-50	c	05Y 61 00 75YR58 00 M					Y	0	0	HR	50		P		Y
	50-55	sc	05Y 61 00 75YR58 00 M					Y	0	0	HR	65		P		Y

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
53	0-30	ms1	10YR41 00						10	0	HR	20						IMP 30
56	0-30	mc1	10YR52 00							0	0	HR	5					
	30-40	mc1	10YR52 00	10YR58	61	C			Y	0	0	HR	3			M		
	40-65	hc1	10YR62 00	75YR58	00	M			Y	0	0		0			M		
	65-120	hc1	10YR64 00	75YR58	00	M			Y	0	0	HR	12			M		
57	0-30	fsz1	10YR41 00							0	0	HR	3					
	30-45	fs1	10YR51 00	10YR58	00	C			Y	0	0		0			M		
	45-55	sc	10YR72 00	10YR58	00	M			Y	0	0		0			P		
	55-80	ms1	10YR51 00	10YR58	00	C			Y	0	0		0			M		
	80-120	c	10YR72 00	10YR58	00	M			Y	0	0		0			P		Y
58	0-30	mc1	10YR42 00							7	0	HR	15					
	30-40	hc1	10YR51 00	10YR58	00	C			Y	0	0	HR	30			M		IMP 40
59	0-33	mc1	10YR44 54							0	0	HR	3					
	33-50	hc1	05Y 61 00	10YR58	00	M			Y	0	0	HR	3			M		
	50-75	sc	05Y 61 00	75YR46	00	M			Y	0	0	HR	15			P		Y
	75-85	sc	05GY61 00	75YR46	00	M			Y	0	0	HR	50			P		IMP 85
60	0-32	fsz1	10YR43 00							10	0	HR	20					
	32-40	ms1	10YR56 00							0	0	HR	40			M		IMP 40
63	0-28	mc1	10YR52 00							0	0	HR	3					
	28-70	c	10YR72 00	75YR58	00	M			Y	0	0		0			P		Y
64	0-32	mc1	10YR52 00							0	0	HR	5					
	32-65	c	10YR72 00	75YR58	62	M			Y	0	0		0			P		Y
65	0-30	mc1	10YR42 00							7	0	HR	10					
	30-50	mc1	10YR52 00	10YR58	61	M			Y	0	0	HR	35			M		IMP 50
66	0-28	ms1	10YR42 00							8	0	HR	15					
	28-60	c	25Y 63 00	75YR56	00	C			Y	0	0		0			P		Y
67	0-28	mc1	10YR42 00							0	0	HR	4					
	28-35	mc1	10YR53 00	10YR56	00	C			Y	0	0		0			M		
	35-55	c	25Y 63 00	75YR56	00	M			Y	0	0		0			P		IMP 85
68	0-28	mc1	10YR42 00							5	0	HR	9					
	28-48	mc1	10YR53 00	75YR56	00	C	00MN00	00	Y	0	0	HR	3			M		
	48-58	hc1	10YR53 00	75YR56	00	C	00MN00	00	Y	0	0		0			M		
	58-120	c	25Y 63 00	75YR58	00	M			Y	0	0		0			P		Y
68A	0-29	mc1	10YR42 00							3	0	HR	8					
	29-38	hc1	25Y 63 00	75YR56	00	C			Y	0	0		0			M		
	38-60	c	25Y 63 00	75YR56	00	M			Y	0	0		0			P		Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
70	0-25	mc1	10YR42 00						0	0	HR	5					
	25-35	hc1	10YR52 00	10YR58 00	C			Y	0	0		0		M			
	35-70	c	10YR72 00	75YR58 00	M			Y	0	0		0		P			Y
72	0-25	mc1	10YR42 00						0	0	HR	2					
	25-60	c	10YR72 00	75YR58 00	M	00M00	00	Y	0	0		0		P			Y
73	0-30	fsz1	10YR42 00						0	0	HR	2					
	30-40	fsz1	10YR54 00						0	0		0		M			
	40-65	fs1	10YR71 00	10YR58 00	C			Y	0	0		0		M			
	65-90	sc1	10YR64 00	10YR58 00	C			Y	0	0		0		M			
	90-110	fs1	10YR71 00	10YR58 00	C			Y	0	0		0		M			
110-120	c	10YR62 00	10YR58 00	M			Y	0	0		0		P				
74	0-35	mc1	10YR42 00						6	0	HR	12					
	35-60	c	25Y 72 00	75YR56 00	M			Y	0	0		0		P			Y
75	0-36	msz1	10YR42 00						2	0	HR	4					
	36-60	c	25Y 72 00	75YR58 00	M			Y	0	0		0		P			Y
76	0-24	mc1	10YR42 00						4	0	HR	8					
	24-60	c	25Y 63 00	75YR56 00	M			Y	0	0		0		P			Y
77	0-33	mc1	10YR41 00						0	0	HR	5					
	33-40	mc1	25Y 71 00	10YR78 00	M			Y	0	0		0		M			
	40-60	c	05GY71 00	75YR58 00	M			Y	0	0	HR	5		P			Y
	60-100	c	05GY71 00	75YR58 00	M			Y	0	0		0		P			Y
78	0-28	mc1	10YR42 00						0	0	HR	2					
	28-40	mc1	10YR44 00						0	0		0		M			
	40-45	sc1	10YR53 54	10YR66 00	C			Y	0	0		0		M			
	45-65	mc1	10YR53 54	10YR66 00	C			Y	0	0		0		M			
	65-80	sc1	10YR52 00	75YR58 00	C			Y	0	0		0		M			
	80-120	sc	10YR52 00	10YR58 00	C			Y	0	0		0		P			Y
79	0-33	mc1	10YR42 51	10YR46 00	C			Y	0	0	HR	2					
	33-50	hc1	10YR42 51	10YR46 56	C			Y	0	0		0		M			
	50-100	hc1	05Y 41 00	10YR46 00	M			Y	0	0		0		P			Y
	100-120	hc1	05GY61 00	75YR46 00	M			Y	0	0		0		P			Y
80	0-35	fsz1	10YR43 00						0	0		0					
	35-50	mc1	10YR54 00						0	0		0		M			
	50-75	hc1	10YR62 00	10YR58 00	C			Y	0	0		0		P			Y
	75-100	fs1	10YR51 00	10YR58 00	C			Y	0	0		0		M			
	100-120	hc1	10YR72 00	10YR58 00	M			Y	0	0		0		P			Y
81	0-25	fsz1	10YR42 00						0	0		0					
	25-45	mc1	10YR52 00	10YR58 00	C			Y	0	0		0		M			
	45-65	fs1	10YR51 00	10YR58 00	C			Y	0	0		0		M			
	65-85	sc	10YR64 00	10YR58 00	M			Y	0	0		0		P			Y
	85-120	fs1	10YR62 00	75YR58 00	C			Y	0	0		0		M			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PEO	----STONES----			STRUCT/	SUBS	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		
82	0-28	ms1	10YR42 00						0	0	HR	3		
	28-48	sc1	10YR53 00	10YR56	00	C		Y	0	0		0	M	
	48-65	c	25Y 63 00	75YR56	00	M		Y	0	0		0	P	Y
83	0-28	sc1	10YR43 00						0	0	HR	3		
	28-75	sc	10YR53 00	10YR56	58	M		Y	0	0		0	P	Y
	75-120	sc	25Y 61 00	10YR58	00	M		Y	0	0		0	P	Y
84	0-35	mc1	10YR43 00						0	0	HR	3		
	35-50	sc1	10YR53 00	10YR56	00	C		Y	0	0		0	M	
	50-85	sc1	10YR53 52	10YR56	66	M		Y	0	0		0	M	
	85-110	sc	10YR61 00	10YR68	00	M		Y	0	0		0	P	Y
	110-120	lms	75YR56 00	10YR61	00	F			0	0		0	M	
85	0-30	sc1	10YR43 00						0	0	HR	2		
	30-55	sc1	10YR53 00	10YR56	00	C		Y	0	0		0	M	
	55-95	sc1	25Y 61 00	10YR56	00	M		Y	0	0		0	M	
	95-120	c	05Y 61 00	10YR58	00	M		Y	0	0		0	P	Y
86	0-30	sc1	10YR42 00						0	0	HR	2		
	30-45	sc1	10YR53 52	10YR56	00	C		Y	0	0		0	M	
	45-70	sc1	10YR53 51	10YR56	00	M	00MN00	Y	0	0		0	M	
	70-120	sc1	10YR62 00	10YR56	00	M		Y	0	0		0	M	
87	0-30	sc1	10YR42 00						0	0	HR	2		
	30-60	sc1	10YR53 52	10YR56	00	C		Y	0	0		0	M	
	60-75	hc1	10YR53 61	10YR56	00	C		Y	0	0		0	P	Y
	75-120	c	25Y 62 61	10YR56	00	M		Y	0	0		0	P	Y
88	0-25	mc1	10YR42 00	10YR58	61	C		Y	0	0	HR	2		
	25-40	hc1	10YR53 00	10YR58	00	C		Y	0	0		0	M	
	40-70	c	10YR72 00	75YR58	00	M		Y	0	0		0	P	Y
89	0-29	mc1	10RR42 00	75YR56	00	C		Y	1	0	HR	3		
	29-38	mc1	10YR71 00	75YR56	00	C	00MN00	Y	0	0	HR	1	M	
	38-50	mc1	10YR71 00	10YR58	00	C		Y	0	0		0	M	
	50-60	hc1	10YR71 00	10YR58	00	C		Y	0	0		0	P	Y
	60-120	c	10YR71 00	10YR58	00	C		Y	0	0		0	P	Y
90	0-29	mc1	10YR43 00	10YR58	00	F			1	0	HR	2		
	29-65	fsc1	10YR71 00	75YR56	00	C		Y	0	0	HR	2	M	
	65-70	c	10YR71 00	75YR56	00	M		Y	0	0	HR	3	P	
	70-75	lfs	10YR71 00	75YR56	00	C		Y	0	0		0	M	IMP 75
91	0-35	mc1	10YR42 00	75YR46	00	C		Y	1	0	HR	3		
	35-65	sc1	10YR53 00	10YR56	00	F			0	0	HR	2	M	
	65-76	sc1	10YR53 00	10YR58	00	C		Y	0	0	HR	2	M	
	76-120	c	10YR71 00	75YR56	00	M		Y	0	0		0	P	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
92	0-29	mc1	10YR43 00	10YR56 00	F			1	0	HR	2							
	29-43	sc1	10YR54 00	10YR56 00	F			0	0	HR	1		M					
	43-58	sc1	10YR54 00	10YR56 00	C			S	0	0	0		M				SLI GLEY	
	58-63	sc1	10YR71 00	75YR56 00	C			Y	0	0	0		M					
	63-98	lfs	10YR71 00	75YR56 00	C			Y	0	0	HR	1	M					
	98-120	c	10YR71 00	75YR56 00	C			Y	0	0	HR	1	P				Y	
93	0-27	mc1	10YR43 00					1	0	HR	2							
	27-70	sc1	10YR53 00	10YR56 61	C			Y	0	0	HR	1	M					
	70-105	sc1	10YR71 00	75YR56 00	C			Y	0	0	HR	1	M					
	105-120	c	10YR71 00	75YR56 00	C			Y	0	0	HR	1	P				Y	
94	0-29	mc1	10YR42 00	75YR46 00	C			Y	3	0	HR	6						
	29-60	c	10YR71 00	05YR58 00	M			Y	0	0	HR	1	P				Y	
96	0-38	mc1	10YR43 00	75YR46 00	C			Y	1	0	HR	2						
	38-58	hc1	10YR71 00	75YR46 00	M		00MN00	00	Y	0	0	HR	1	P			Y	
	58-95	hc1	10YR71 00	75YR46 00	M		00MN00	00	Y	0	0	HR	1	P			Y	
	95-120	c	10YR71 00	75YR46 00	M		00MN00	00	Y	0	0	0	P				Y	
97	0-35	hc1	10YR42 00	10YR56 00	F		00MN00	00	0	0	HR	2						
	35-80	c	05Y 61 00	10YR56 00	M			Y	0	0	0	0	P				Y	
98	0-25	mc1	10YR44 51					0	0	0	0							
	25-48	ms1	10YR52 00	10YR58 00	M			Y	0	0	0	0	M					
	48-80	hc1	10YR52 00	10YR58 00	M			Y	0	0	0	0	P				Y	
99	0-25	mc1	10YR43 00	10YR52 58	F			0	0	0	0							
	25-55	c	10YR52 00	75YR58 00	M			Y	0	0	0	0	P				Y	
100	0-27	mc1	10YR43 00					0	0	HR	4							
	27-45	sc1	10YR52 53	10YR58 00	M			Y	0	0	HR	2	M					
	45-70	hc1	10YR52 00	75YR58 00	M			Y	0	0	HR	1	P				Y	
102	0-25	sc1	25Y 42 00	10YR46 00	C			Y	0	0	HR	2						
	25-35	sc1	25Y 52 00	10YR46 56	M			Y	0	0	0	0	M					
	35-50	sc1	25Y 53 61	10YR56 00	M			Y	0	0	0	0	M					
	50-60	hc1	25Y 62 00	10YR56 00	M			Y	0	0	0	0	P				Y	
	60-120	hc1	25Y 61 00	10YR58 00	M			Y	0	0	0	0	P				Y	
103	0-25	sc1	25Y 42 00					0	0	HR	5							
	25-45	hc1	10YR53 61	10YR56 00	C			Y	0	0	0	0	P				Y	
	45-70	c	25Y 61 00	10YR58 00	M			Y	0	0	0	0	P				Y	
	70-75	c	25Y 61 00	10YR58 00	M			Y	0	0	HR	10	P				Y	
105	0-28	c	10YR62 00	75YR46 00	M		00MN00	00	Y	1	0	HR	2					
	28-60	c	10YR71 00	75YR56 00	M		00MN00	00	Y	0	0	HR	1	P	Y		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/	SUBS	STR	POR	IMP	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH							
106	0-35	mc1	10YR43 00						0	0	HR	2						
	35-45	sc1	10YR51 00 10YR46 00 M				OOMN00	00	Y	0	0	0		M				
	45-90	sc	25Y 61 00 10YR58 00 M						Y	0	0	0		P		Y		
	90-120	sc1	25Y 61 00 10YR58 00 M						Y	0	0	0		M				
107	0-30	mc1	10YR43 00							0	0	HR	1					
	30-50	ms1	10YR61 00 10YR68 00 M						Y	0	0	0		M				
	50-88	lms	10YR61 00 10YR68 00 M						Y	0	0	0		M				
	88-120	ms1	10YR53 00 10YR58 00 M						Y	0	0	0		M				
108	0-24	mc1	10YR52 00 75YR46 00 M						Y	0	0	0						
	24-35	c	10YR51 00 75YR46 00 M						Y	0	0	0		P		Y		
	35-45	c	10YR61 00 75YR58 00 M						Y	0	0	HR	5		P		Y	
	45-60	c	10YR61 00 75YR58 00 M						Y	0	0	0		P		Y		
110	0-27	mc1	10YR43 00 10YR58 00 F							0	0	0						
	27-49	mc1	10YR52 00 75YR46 00 M						Y	0	0	0		M				
	49-70	c	10YR61 00 75YR58 00 M						Y	0	0	0		P		Y		
111	0-30	mc1	10YR43 00 10YR56 00 C						S	0	0	0						
	30-38	hc1	10YR52 42 75YR68 00 M						Y	0	0	0		P				
	38-52	sc1	10YR51 00 75YR68 00 M						Y	0	0	HR	5		M			IMP 52
113	0-34	mc1	10YR42 00 75YR46 00 C				OOMN00	00	Y	1	0	HR	3					
	34-60	c	10YR71 00 75YR56 00 M						Y	0	0	HR	1		P		Y	
114	0-25	mc1	10YR43 00							0	0	CH	5					
	25-35	c	10YR52 00 10YR58 00 M						Y	0	0	0		M				
	35-50	ms1	10YR62 00 10YR58 00 M						Y	0	0	0		M				
	50-70	c	10YR51 00 10YR58 00 M						Y	0	0	0		P		Y		
114A	0-25	mc1	10YR43 00							0	0	HR	2					
	25-45	c	10YR52 00 10YR58 00 M						Y	0	0	HR	10		P			IMP 45
115	0-28	mc1	10YR42 00 00M00 00 C							4	0	HR	20					
	28-38	c	10YR56 44							0	0	HR	35		M			IMP 38
116	0-30	mc1	10YR43 00							4	0	HR	20					
	30-47	c	75YR58 00							0	0	HR	25		M			IMP 47
117	0-30	mc1	10YR43 00 10YR51 56 C						Y	3	0	HR	15					
	30-50	c	10YR51 00 75YR68 00 M						Y	0	0	HR	15		P		Y	
	50-60	c	10YR51 00 75YR68 00 M						Y	0	0	HR	25		M			IMP 60
118	0-30	mc1	10YR61 43 75YR46 00 C						Y	1	0	HR	2					
	30-65	sc1	10YR71 00 75YR56 00 M						Y	0	0	0		M				
	65-120	sc1	10YR71 00 75YR56 68 M						Y	0	0	0		M				

SOIL PIT DESCRIPTION

Site Name : ADBURY PARK GOLF COURSE Pit Number : 1P

Grid Reference: SU48106220 Average Annual Rainfall : 785 mm
Accumulated Temperature : 1414 degree days
Field Capacity Level : 172 days
Land Use : Bare Soil
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	FSZL	10YR21 00	11	25		
28- 45	FSL	10YR42 00	0	56		
45- 65	LFS	10YR51 00	0	53		
65- 80	FSL	10YR41 53	0	50	C	
80-120	SC	05Y 62 00	0	40	M	

Wetness Grade : 1 Wetness Class : I
Gleying : 065 cm
SPL : No SPL

Drought Grade : 3A APW : 095mm MBW : -4 mm
APP : 066mm MBP : -23 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ADBURY PARK GOLF COURSE Pit Number : 2P

Grid Reference: SU47966167 Average Annual Rainfall : 785 mm
 Accumulated Temperature : 1414 degree days
 Field Capacity Level : 172 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR42 00	12	25		
30- 45	MCL	10YR56 00	0	50		
45- 85	MCL	10YR56 00	0	40		
85-120	C	75YR51 00	0	30	C	

Wetness Grade : 1 Wetness Class : I
 Gleying : 085 cm
 SPL : No SPL

Drought Grade : 3A APW : 098mm MBW : -1 mm
 APP : 076mm MBP : -13 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : ADBURY PARK GOLF COURSE Pit Number : 3P

Grid Reference: SU48206160 Average Annual Rainfall : 785 mm
Accumulated Temperature : 1414 degree days
Field Capacity Level : 172 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 27	MCL	10YR5/2 5/1	0	0	C	
27- 60	C	2.5Y 7/2 0/0	0	0	M	WKCAB

Wetness Grade : 3B Wetness Class : IV
Gleying : 0 cm
SPL : 0.27 cm

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

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : ADBURY PARK GOLF COURSE Pit Number : 4P

Grid Reference: SU48206130 Average Annual Rainfall : 785 mm
 Accumulated Temperature : 1414 degree days
 Field Capacity Level : 172 days
 Land Use : Cereals
 Slope and Aspect : 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	MCL	10YR42 00	0	3		
28- 50	MCL	10YR53 00	0	1	C	MDCSAB
50- 80	HCL	25Y 62 00	0	0	M	WKCPR

Wetness Grade : 3A Wetness Class : III
 Gleying : 028 cm
 SPL : 050 cm

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

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : ADBURY PARK GOLF COURSE Pit Number : 5P

Grid Reference: SU48206130 Average Annual Rainfall : 785 mm
 Accumulated Temperature : 1414 degree days
 Field Capacity Level : 172 days
 Land Use : Cereals
 Slope and Aspect : 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	MCL	10YR42 00	0	3		
28- 55	MCL	10YR53 00	0	1		MDCSAB
55- 86	FSL	25Y 62 00	0	1	C	MDCSAB
86-100	HCL	25Y 62 00	0	1	C	WKCPR
100-120	LFS	25Y 72 00	0	1	M	MDCPL

Wetness Grade : 1 Wetness Class : I
 Gleying : 055 cm
 SPL : No SPL

Drought Grade : 1 APW : 164mm MBW : 65 mm
 APP : 119mm MBP : 30 mm

FINAL ALC GRADE : 1
 MAIN LIMITATION :