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**WOKINGHAM DISTRICT LOCAL PLAN
SITE WT10 - PRIORS FARM, EASTHAMPSTEAD ROAD,
WOKINGHAM, BERKSHIRE**

**Agricultural Land Classification Report
February 1997**



**Ministry of
Agriculture
Fisheries
and Food**

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**Resource Planning Team
Guildford Statutory Group
ADAS Reading**

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LUPU Commission: 02968**

AGRICULTURAL LAND CLASSIFICATION REPORT

WOKINGHAM DISTRICT LOCAL PLAN SITE WT10 - PRIORS FARM, EASTHAMPSTEAD ROAD, WOKINGHAM, BERKSHIRE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 46.1 ha of land at Priors Farm, Easthampstead Road, to the south east of Wokingham in Berkshire. The survey was carried out in February 1997.
2. The survey was commissioned by Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit (Reading) in connection with the Wokingham District Local Plan. The results of this survey supersede any previous ALC information for this land.
3. The work was coordinated by the Resource Planning Team in the Guildford Statutory Group in ADAS, and was carried out under sub-contracting arrangements by NA Duncan and Associates. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the majority of the land was under winter wheat. A small area at the extreme western edge of the site was in permanent grass, whilst on the southern boundary there is an area occupied by a new bungalow and garden alongside buildings used as an MOT test centre.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000; it is accurate at this scale but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

| Grade/Other land | Area (hectares) | % surveyed area | % site area |
|--------------------------------|-----------------|-----------------|-------------|
| 3a | 17.8 | 41.2 | 38.6 |
| 3b | 25.4 | 58.8 | 55.1 |
| Agricultural land not surveyed | 1.7 | N/A | 3.7 |
| Other land | 1.2 | N/A | 2.6 |
| Total surveyed area | 43.2 | 100 | 93.7 |
| Total site area | 46.1 | - | 100 |

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 44 borings and 3 soil pits was described.

8. Two areas of Subgrade 3a, good quality agricultural land, have been mapped, which comprise fine loamy soils overlying poorly structured clay at moderate depths. These soils show clear evidence of soil wetness problems and, under the prevailing climatic conditions, they have a moderate wetness and workability limitation restricting the land quality to Subgrade 3a.

9. Over the remainder of the site, the land experiences a more significant wetness limitation (related to the presence of the poorly structured clays at shallower depths); this restricts the timing of cultivations, as trafficking by agricultural machinery or grazing by livestock may lead to structural damage. An appropriate grading for such land under the prevailing climatic conditions is Subgrade 3b, moderate quality agricultural land.

FACTORS INFLUENCING ALC GRADE

Climate

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

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

Table 2: Climatic and altitude data

| Factor | Units | Values |
|----------------------------|------------------|------------|
| Grid reference | N/A | SU 835 672 |
| Altitude | m, AOD | 60 |
| Accumulated Temperature | day°C (Jan-June) | 1455 |
| Average Annual Rainfall | mm | 661 |
| Field Capacity Days | days | 139 |
| Moisture Deficit, Wheat | mm | 113 |
| Moisture Deficit, Potatoes | mm | 107 |

12. 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.

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

14. The combination of rainfall and temperature at this site mean there is no overall climatic limitation (Climate Grade 1). However, climatic factors do interact with soil

properties to influence soil wetness and droughtiness limitations. At this locality the moderately high crop adjusted soil moisture deficits may increase the likelihood of soil droughtiness whilst the correspondingly low average annual rainfall may reduce the likelihood of soil wetness.

15. Local climatic factors such as exposure or frost risk are not believed to affect this site.

Site

16. The site is gently sloping and is crossed from east to west by a shallow valley containing a small stream. The land falls from approximately 65 m AOD on the northern and southern boundaries into the shallow valley which lies at approximately 60 m AOD. Altitude and gradient therefore do not impose any limitation on the agricultural land quality.

Geology and soils

17. The relevant geological map (BGS, 1948) shows the majority of the site to be underlain by London Clay, with a narrow strip of alluvium in the valley bottom.

18. The most recently published soil information for the site (SSEW, 1983) shows the whole site to be occupied by soils of the Wickham 3 association. These are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils, and similar, more permeable soils with slight waterlogging. Some deep coarse loamy soils affected by groundwater' (SSEW, 1983).

AGRICULTURAL LAND CLASSIFICATION

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

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

Subgrade 3a

21. Subgrade 3a (good quality agricultural land) has been mapped on the very gently sloping land in the central part of the northern half of the site and on the more steeply sloping north facing land on the southern half. The soils in both areas are broadly similar although the subsoils in the southern area tend to be slightly sandier and less stony. The soils typically have a medium clay loam or sandy clay loam topsoil overlying a gleyed sandy clay loam or medium clay loam, occasionally medium sandy loam, upper subsoil. The stone content of the upper subsoil in the northern area is approximately 10% (v/v), whilst in the southern area it is in the order of 2-3%. Below 40-65 cm depth, the lower subsoil is a poorly structured (coarse prismatic or coarse angular blocky) slowly permeable clay or sandy clay which can be either stoneless or contain few rounded flint pebbles. These soils are assessed as Wetness Class III and, under the prevailing climatic conditions, have a moderate wetness and workability limitation, restricting the land quality to Subgrade 3a.

Subgrade 3b

22. Subgrade 3b (moderate quality agricultural land) has been mapped on the flatter land at the southern end of the site, over much of the northern area and also on the alluvial soils in the valley bottom. The soils on the higher land are all broadly similar, differing from those described in the Subgrade 3a area by the absence of any significant loamy upper subsoil material, with the topsoils directly overlying the poorly structured, slowly permeable clay. These soils typically have a medium clay loam topsoil, which is generally mottled and gleyed below 25 cm depth (plough depth). Below 25-35 cm, the subsoil is invariably a poorly structured (coarse prismatic or coarse angular blocky), slowly permeable clay. The clay is generally stoneless although, in some profiles, the upper clay layers were moderately stony, 15-20% v/v (see Pit 1). Drainage is significantly impeded in these soils, causing prolonged seasonal waterlogging in the soil profile and the soils have therefore been assessed as Wetness Class IV. As a result, crop germination and growth may be adversely affected. The fine loamy topsoil textures can also restrict the timing of cultivations as trafficking by agricultural machinery or grazing by livestock may lead to soil structural damage.

23. The alluvial soils in the valley bottom have also been mapped as Subgrade 3b. These soils typically overlie waterlogged gravels at a relatively shallow depth resulting in groundwater ponding in the soil profile for long periods over the winter months. The soils typically have a strongly mottled heavy clay loam/silty clay loam topsoil overlying a very gleyed heavy silty clay loam or sandy clay loam subsoil. Gravel was generally encountered within 45 cm depth. At the time of survey, a water table established at approximately 20 cm in one of the auger borings and crop establishment was poor over much of the area due to the very wet conditions that were prevalent. Subgrade 3b is therefore considered appropriate for this land.

N A Duncan
for the Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

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

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

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South East England. 1:250,000 scale.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England. Bulletin 15.* SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

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

Grade 4: Poor Quality Agricultural Land

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

Grade 5: Very Poor Quality Agricultural Land

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

APPENDIX II

SOIL DATA

Contents:

Sample location map

Soil abbreviations - Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

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

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 | OTH: Other |
| DCW: Deciduous woodland | BOG: Bog or marsh | SAS: Set-Aside |
| HTH: Heathland | HRT: Horticultural crops | PLO: Ploughed |
3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.
4. **GLEYSPL:** 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 | ST: Topsoil Stoniness |
| 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 |
| EX: Exposure | | |

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 | FSST: | soft, fine grained sandstone |
| ZR: | soft, argillaceous, or silty rocks | CH: | chalk |
| MSST: | soft, medium grained sandstone | GS: | gravel with porous (soft) stones |
| SI: | soft weathered igneous/metamorphic rock | GH: | gravel with non-porous (hard) stones |

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 | |
| 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 | GLEY SPL | CLASS | GRADE | AP | MB | AP | MB | | | | |
| 1 | SU83506760 | PGR N | | 000 035 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 1P | SU83306750 | CER | | 025 033 | 4 | 3B | 117 | 4 094 | -13 | 3A | | | WE | 3B |
| 2 | SU83206750 | WHT S | 01 | 035 035 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 2P | SU83206740 | CER S | 01 | 028 028 | 4 | 3B | 126 | 13 103 | -4 | 2 | | | WE | 3B PIT TO 70 CM |
| 3 | SU83306750 | CER S | | 028 038 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B NEAR 3A |
| 3P | SU83306730 | CER S | 01 | 025 047 | 3 | 3A | 126 | 13 100 | -7 | 2 | | | WE | 3A |
| 4 | SU83406750 | WHT N | 01 | 038 065 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |
| 5 | SU83506750 | WHT N | 01 | 027 035 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 6 | SU83606750 | ARA SW | 01 | 030 030 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 7 | SU83106740 | ARA S | 01 | 032 032 | 4 | 3B | 128 | 15 105 | -2 | 2 | | | WE | 3B |
| 8 | SU83206740 | ARA S | 01 | 027 027 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 9 | SU83306740 | ARA S | 01 | 035 060 | 3 | 3A | 138 | 25 107 | 0 | 2 | | | WE | 3A |
| 10 | SU83406740 | ARA SE | 01 | 030 050 | 3 | 3A | 124 | 11 101 | -6 | 2 | | | WE | 3A |
| 11 | SU83506740 | ARA SE | 01 | 033 065 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |
| 12 | SU83606740 | WHT SE | 01 | 030 038 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A BORDERLINE 3B |
| 13 | SU83106730 | CER S | 01 | 034 034 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 14 | SU83206730 | CER S | 02 | 030 040 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A NEAR 3B |
| 15 | SU83306730 | CER S | 02 | 027 050 | 3 | 3A | 131 | 18 105 | -2 | 2 | | | WE | 3A |
| 16 | SU83406730 | CER SE | 02 | 027 045 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |
| 17 | SU83506730 | CER SE | 02 | 030 040 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |
| 18 | SU83606730 | CER SE | 03 | 045 045 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |
| 20 | SU83106720 | CER S | 02 | 023 035 | 4 | 3B | 127 | 14 104 | -3 | 2 | | | WE | 3B |
| 21 | SU83206720 | CER W | 01 | 030 045 | 3 | 3A | 140 | 27 108 | 1 | 2 | | | WE | 3A |
| 22 | SU83306720 | CER S | 01 | 030 050 | 3 | 3A | 099 | -14 104 | -3 | 3A | | | WE | 3A IMP80 |
| 23 | SU83406720 | CER SE | 02 | 030 030 | 4 | 3B | 127 | 14 104 | -3 | 2 | | | WE | 3B |
| 24 | SU83506720 | CER SE | 03 | 000 065 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B MN AT 26 GWATE |
| 25 | SU83606720 | CER W | 01 | 029 029 | 4 | 3B | 127 | 14 104 | -3 | 2 | | | WE | 3B |
| 26 | SU83706720 | CER W | 01 | 035 035 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B MOTT 30 |
| 28 | SU83106710 | CER S | 01 | 000 033 | 4 | 3B | 133 | 20 105 | -2 | 2 | | | WE | 3B |
| 29 | SU83206710 | CER N | 02 | 026 026 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 30 | SU83306710 | CER S | 03 | 027 027 | 4 | 3B | 126 | 13 103 | -4 | 2 | | | WE | 3B |
| 31 | SU83406710 | CER S | | 000 048 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B IMP80 ALLUVIAL |
| 32 | SU83506710 | CER S | | 000 020 | 4 | 4 | 062 | -51 062 | -45 | 4 | | | WE | 4 WT17CMALLUVIAL |
| 33 | SU83606710 | CER S | 04 | 050 070 | 2 | 2 | 136 | 23 111 | 4 | 2 | | | WE | 2 |
| 34 | SU83706710 | CER S | 02 | 028 000 | 4 | 3B | 000 | 0 000 | 0 | 4 | | | WE | 3B |
| 35 | SU83506700 | CER N | 02 | 028 038 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 36 | SU83606700 | CER N | 03 | 035 070 | 2 | 2 | 000 | 0 000 | 0 | | | | WE | 2 IMP 95 |
| 37 | SU83706700 | CER N | | 000 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B GWATER IMP 44 |
| 38 | SU83406690 | CER N | 01 | 032 065 | 3 | 3A | 135 | 22 105 | -2 | 2 | | | WE | 3A |
| 39 | SU83506690 | CER N | 01 | 025 033 | 4 | 3B | 127 | 14 104 | -3 | 2 | | | WE | 3B MOT25CM |
| 40 | SU83606690 | CER N | 02 | 030 030 | 4 | 3B | 000 | 0 000 | 0 | | | | WE | 3B |
| 41 | SU83706690 | CER N | 03 | 027 040 | 3 | 3A | 000 | 0 000 | 0 | | | | WE | 3A |

| SAMPLE NO. | GRID REF | ASPECT USE | --WETNESS-- | | | | -WHEAT- | | -POTS- | | M. REL | | EROSN | FROST | CHEM | ALC | COMMENTS |
|------------|------------|------------|-------------|------|-----|-------|---------|-----|--------|-----|--------|-----|-------|-------|-------|----------|----------|
| | | | GRDNT | GLEY | SPL | CLASS | GRADE | AP | MB | AP | MB | DRT | FLOOD | EXP | DIST | LIMIT | |
| 44 | SU83606680 | CER N | 01 | 025 | 033 | 4 | 3B | 000 | 0 | 000 | 0 | | | | WE 3B | WET 25 | |
| 45 | SU83706680 | CER NE | 01 | 025 | 035 | 4 | 3B | 000 | 0 | 000 | 0 | | | | WE 3B | IMP 100 | |
| 46 | SU83806680 | CER N | 01 | 026 | 065 | 3 | 3A | 000 | 0 | 000 | 0 | | | | WE 3A | | |
| 47 | SU83706670 | CER | | 030 | 030 | 4 | 3B | 000 | 0 | 000 | 0 | | | | WE 3B | V WET 27 | |
| 48 | SU83806670 | CER E | 01 | 025 | 055 | 3 | 3A | 000 | 0 | 000 | 0 | | | | WE 3A | SANDY | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- | | | PED | | ----STONES---- | | | | STRUCT/ | | SUBS | | |
|--------|--------|---------|-----------|------------------|------|------|------|-----------|----------------|----|------|-----|---------|-----|------|-----|-----|
| | | | | COL | ABUN | CONT | COL. | GLE | >2 | >6 | LITH | TOT | CONSIST | STR | POR | IMP | SPL |
| 1 | 0-35 | hc1 | 10YR52 00 | 10YR56 00 | C | | | Y | 0 | 0 | 0 | | | | | | |
| | 35-90 | c | 25Y 63 00 | 10YR68 00 | M | | | Y | 0 | 0 | 0 | | | P | | Y | |
| 1P | 0-25 | mc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 6 | | | | | |
| | 25-33 | mc1 | 10YR52 00 | 10YR46 00 | C | | | Y | 0 | 0 | HR | 7 | MDCSB | FR | M | | |
| | 33-70 | c | 25Y 63 64 | 10YR66 00 | M | | | Y | 0 | 0 | HR | 20 | WK CAB | FM | P | Y | |
| | 70-120 | c | 10YR64 62 | 75YR66 00 | M | | | Y | 0 | 0 | HR | 5 | WKVCAB | VM | P | Y | |
| 2 | 0-35 | mc1 | 10YR43 42 | | | | | | 1 | 0 | HR | 5 | | | | | |
| | 35-65 | sc | 10YR52 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 5 | | | P | Y | |
| | 65-95 | c | 10YR63 53 | 10YR56 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | |
| 2P | 0-28 | mc1 | 10YR44 00 | | | | | | 1 | 0 | HR | 5 | | | | | |
| | 28-120 | c | 10YR64 00 | 10YR68 00 | M | | | Y | 0 | 0 | | 0 | STCPR | FM | P | Y | |
| 3 | 0-28 | mc1 | 10YR43 00 | | | | | | 3 | 0 | HR | 6 | | | | | |
| | 28-38 | hc1 | 10YR52 00 | 75YR46 00 | C | | | Y | 0 | 0 | HR | 11 | | | M | | |
| | 38-70 | c | 25Y 63 00 | 10YR68 00 | M | | | Y | 0 | 0 | HR | 10 | | | P | Y | |
| 3P | 0-25 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 4 | | | | | |
| | 25-35 | sc1 | 10YR42 52 | 75YR56 00 | C | | | Y | 0 | 0 | HR | 5 | | | M | | |
| | 35-47 | sc1 | 25Y 63 73 | 10YR66 00 | C | | | Y | 0 | 0 | HR | 12 | VCSAB | FR | M | | |
| | 47-80 | sc | 25Y 63 00 | 75YR68 00 | M | | | Y | 0 | 0 | HR | 12 | VCAB | FM | P | Y | |
| | 80-120 | c | 10YR63 00 | 75YR68 00 | M | | | Y | 0 | 0 | HR | 2 | WKCP | FM | P | Y | |
| 4 | 0-38 | sc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 5 | | | | | |
| | 38-65 | mc1 | 10YR64 43 | 10YR56 00 | C | | | Y | 0 | 0 | HR | 10 | | | M | | |
| | 65-90 | c | 10YR53 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 10 | | | P | Y | |
| 5 | 0-27 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 5 | | | | | |
| | 27-35 | mc1 | 10YR52 00 | 75YR46 00 | C | | | Y | 0 | 0 | HR | 10 | | | M | | |
| | 35-80 | c | 10YR62 00 | 10YR66 00 | M | | | 00MNO0 00 | Y | 0 | 0 | HR | 10 | | | P | Y |
| | 80-120 | c | 10YR62 00 | 10YR66 00 | M | | | 00MNO0 00 | Y | 0 | 0 | 0 | | | | P | Y |
| 6 | 0-30 | mc1 | 10YR43 00 | | | | | | 2 | 0 | HR | 5 | | | | | |
| | 30-80 | c | 25 Y53 62 | 75YR58 00 | M | | | Y | 0 | 0 | HR | 10 | | | P | Y | |
| | 80-120 | c | 25 Y61 00 | 10YR56 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | |
| 7 | 0-32 | mc1 | 10YR33 00 | | | | | | 1 | 0 | HR | 3 | | | | | |
| | 32-120 | c | 10YR64 00 | 75YR68 00 | M | | | 25 Y62 00 | Y | 0 | 0 | 0 | | | | P | Y |
| 8 | 0-27 | mc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 6 | | | | | |
| | 27-100 | c | 10YR63 00 | 10YR68 00 | M | | | Y | 0 | 0 | | 0 | | | | P | Y |
| 9 | 0-35 | sc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 5 | | | | | |
| | 35-60 | ms1 | 10YR63 64 | 75YR66 00 | C | | | Y | 0 | 0 | | 0 | | | M | | |
| | 60-120 | sc | 25 Y63 00 | 10YR68 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- | | | PED COL. | ----STONES---- | | | STRUCT/ CONSIST | SUBS | | | | | |
|--------|--------|---------|-----------|------------------|------|------|-------------|----------------|----|----|--------------------|------|-----|-----|-----|-----|-----|
| | | | | COL | ABUN | CONT | | GLEYS | >2 | >6 | | LITH | TOT | STR | POR | IMP | SPL |
| 10 | 0-30 | sc1 | 10YR44 00 | | | | | 3 | 0 | HR | 6 | | | | | | |
| | 30-50 | sc1 | 10YR64 00 | 10YR66 | 00 | C | | Y | 0 | 0 | HR | 10 | | M | | | |
| | 50-120 | c | 10YR64 00 | 75YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | Y | | Y |
| 11 | 0-33 | mc1 | 10YR34 00 | | | | | 3 | 0 | HR | 5 | | | | | | |
| | 33-65 | hc1 | 25 Y54 64 | 75YR58 | 00 | C | | Y | 0 | 0 | HR | 10 | | M | | | |
| | 65-120 | c | 25 Y61 00 | 10YR56 | 00 | M | | Y | 0 | 0 | | 0 | | P | Y | | Y |
| 12 | 0-30 | mc1 | 10YR43 00 | | | | | 2 | 0 | HR | 5 | | | | | | |
| | 30-38 | sc1 | 10YR54 00 | 10YR56 | 00 | C | | Y | 0 | 0 | HR | 12 | | M | | | |
| | 38-110 | c | 25 Y63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | Y | | Y |
| 13 | 0-34 | mc1 | 10YR43 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 34-70 | c | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| | 70-120 | c | 10YR63 00 | 75YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 14 | 0-30 | mc1 | 10YR43 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 30-40 | mc1 | 10YR53 00 | 75YR46 | 00 | C | | Y | 0 | 0 | HR | 8 | | M | | | |
| | 40-120 | c | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 15 | 0-27 | mc1 | 10YR42 00 | | | | | 2 | 0 | HR | 5 | | | | | | |
| | 27-40 | ms1 | 10YR52 00 | 10YR44 | 00 | C | | Y | 0 | 0 | HR | 5 | | M | | | |
| | 40-50 | sc1 | 25Y 63 73 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 5 | | M | | | |
| | 50-80 | sc | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 2 | | P | | | Y |
| | 80-120 | c | 75YR63 00 | 75YR68 | 62 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 16 | 0-27 | mc1 | 10YR44 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 27-45 | sc1 | 10YR64 00 | 10YR56 | 00 | C | | Y | 0 | 0 | HR | 3 | | | | | |
| | 45-120 | c | 10YR64 00 | 75YR68 | 62 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 17 | 0-30 | mc1 | 10YR44 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 30-40 | mc1 | 10YR54 00 | 10YR56 | 00 | C | | Y | 0 | 0 | HR | 4 | | M | | | |
| | 40-70 | c | 10YR64 00 | 75YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| | 70-90 | sc | 10YR63 00 | 10YR66 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| | 90-120 | c | 75YR64 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 18 | 0-30 | mc1 | 10YR44 00 | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 30-45 | mc1 | 10YR54 00 | 10YR56 | 00 | F | | 0 | 0 | HR | 4 | | M | | | | |
| | 45-80 | sc | 25Y 63 64 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 5 | | P | | | Y |
| | 80-120 | c | 75YR63 00 | 75YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 20 | 0-23 | mc1 | 10YR43 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 23-35 | mc1 | 25Y 42 00 | 75YR46 | 00 | C | | Y | 0 | 0 | HR | 4 | | M | | | |
| | 35-55 | sc | 25Y 72 00 | 10YR66 | 00 | C | | Y | 0 | 0 | HR | 1 | | P | | | Y |
| | 55-120 | c | 10YR64 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |
| 21 | 0-30 | mc1 | 10YR43 00 | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 30-45 | sc1 | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 3 | | M | | | |
| | 45-60 | sc | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 3 | | P | | | Y |
| | 60-95 | sc1 | 25Y 63 00 | 75YR68 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y |
| | 95-120 | c | 10YR63 00 | 75YR58 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- | | | PED | ----STONES---- | | | STRUCT/ | SUBS | | | | | | |
|--------|--------|---------|-----------------------|------------------|------|------|----------|----------------|----|----|---------|------|---------|-----|-----|-----|-----|------|
| | | | | COL | ABUN | CONT | COL. | GLE | >2 | >6 | LITH | TOT | CONSIST | STR | POR | IMP | SPL | CALC |
| 22 | 0-30 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 5 | | | | | | |
| | 30-50 | sc1 | 10YR53 00 75YR56 00 C | | | | 00M00 00 | Y | 0 | 0 | HR | 10 | | M | | | | |
| | 50-80 | c | 25Y 62 00 75YR66 00 M | | | | | Y | 0 | 0 | HR | 3 | | P | | | Y | |
| 23 | 0-30 | mc1 | 75YR44 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 30-50 | sc | 25Y 63 00 75YR66 62 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 50-120 | c | 10YR64 00 75YR56 62 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 24 | 0-26 | mc1 | 10YR42 00 05YR46 00 C | | | | | Y | 0 | 0 | HR | 2 | | | | | | |
| | 26-50 | sc1 | 25Y 62 00 10YR58 00 C | | | | | Y | 0 | 0 | | 0 | | | | | | |
| | 50-65 | sc1 | 25Y 73 00 10YR66 00 C | | | | | Y | 0 | 0 | | 0 | | | | | | |
| | 65-120 | c | 75YR64 00 10YR66 00 M | | | | 00M00 00 | Y | 0 | 0 | | 0 | | P | | | Y | |
| 25 | 0-29 | mc1 | 10YR42 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 29-120 | c | 10YR62 00 10YR58 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 26 | 0-35 | hc1 | 10YR43 00 05YR46 00 C | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 35-80 | c | 25Y 63 00 10YR68 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 80-120 | c | 10YR64 00 75YR66 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 28 | 0-33 | mc1 | 10YR42 52 10YR44 00 C | | | | | Y | 0 | 0 | HR | 3 | | | | | | |
| | 33-75 | c | 10YR61 00 10YR58 00 M | | | | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| | 75-120 | sc | 10YR61 00 10YR58 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 29 | 0-26 | mc1 | 10YR44 00 75YR46 00 F | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 26-120 | c | 10YR62 00 75YR68 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 30 | 0-27 | hc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 27-120 | c | 10YR62 00 10YR58 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 31 | 0-25 | hc1 | 10YR42 00 05YR46 00 C | | | | | Y | 0 | 0 | HR | 3 | | | | | | |
| | 25-48 | hzc1 | 10YR51 00 05YR46 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | | |
| | 48-80 | c | 25Y 62 00 10YR66 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 32 | 0-20 | hzc1 | 10YR41 00 10YR44 00 C | | | | | Y | 0 | 0 | HR | 1 | | | | | | |
| | 20-36 | c | 10YR61 00 10YR56 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 36-40 | c | 10YR61 00 10YR56 00 M | | | | | Y | 0 | 0 | HR | 35 | | P | | | Y | |
| 33 | 0-27 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 4 | | | | | | |
| | 27-50 | sc1 | 10YR54 64 10YR56 00 F | | | | | S | 0 | 0 | | 0 | | M | | | | |
| | 50-70 | sc1 | 10YR63 00 10YR66 00 C | | | | | Y | 0 | 0 | | 0 | | M | | | | |
| | 70-120 | c | 10YR63 62 75YR68 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 34 | 0-28 | mc1 | 10YR42 00 | | | | | | 1 | 0 | HR | 5 | | | | | | Y |
| | 28-120 | c | 10YR62 00 10YR58 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| 35 | 0-28 | mc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 4 | | | | | | |
| | 28-38 | sc1 | 10YR52 53 75YR56 00 C | | | | | Y | 0 | 0 | HR | 3 | | | | | | |
| | 38-120 | c | 25Y 62 00 75YR68 00 M | | | | | Y | 0 | 0 | | 0 | | P | | | Y | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | -----MOTTLES----- | | | PED | | -----STONES----- | | | STRUCT/ | SUBS | | | CALC |
|--------|--------|---------|-----------|-------------------|------|------|--------|-----|------------------|----|------|---------|------|---------|-----|------|
| | | | | COL | ABUN | CONT | COL. | GLE | >2 | >6 | LITH | | TOT | CONSIST | STR | |
| 36 | 0-35 | sc1 | 10YR44 00 | | | | | | 0 | 0 | HR | 4 | | | | |
| | 35-70 | ms1 | 25Y 73 00 | 10YR46 | 56 | C | 00MNO0 | 00 | Y | 0 | 0 | HR | 3 | | | |
| | 70-95 | sc | 10YR73 00 | 75YR68 | 00 | M | | | Y | 0 | 0 | HR | 3 | P | | Y |
| 37 | 0-25 | hc1 | 10YR42 00 | 75YR46 | 00 | C | | | Y | 0 | 0 | HR | 3 | | | |
| | 25-35 | sc1 | 25Y 52 00 | 75YR46 | 56 | M | | | Y | 0 | 0 | HR | 2 | | | |
| | 35-44 | sc1 | 25Y 61 00 | 75YR56 | 00 | M | | | Y | 0 | 0 | HR | 5 | | | |
| 38 | 0-32 | sc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 6 | | | | |
| | 32-65 | sc1 | 25Y 63 00 | 10YR66 | 00 | C | | | Y | 0 | 0 | HR | 4 | M | | |
| | 65-120 | sc | 25Y 63 00 | 75YR66 | 00 | M | | | Y | 0 | 0 | HR | 3 | P | | Y |
| 39 | 0-33 | mc1 | 10YR43 00 | 05YR46 | 00 | C | | | Y | 2 | 0 | HR | 5 | | | |
| | 33-120 | c | 25Y 63 00 | 75YR68 | 00 | M | | | Y | 0 | 0 | HR | 1 | P | | Y |
| 40 | 0-30 | mc1 | 10YR44 00 | | | | | | 1 | 0 | HR | 3 | | | | |
| | 30-65 | c | 25Y 72 00 | 75YR68 | 00 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| | 65-120 | c | 75YR63 00 | 10YR68 | 72 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| 41 | 0-27 | sc1 | 10YR44 00 | | | | | | 2 | 0 | HR | 3 | | | | |
| | 27-40 | sc1 | 10YR52 00 | 10YR46 | 00 | C | | | Y | 0 | 0 | HR | 3 | | | |
| | 40-80 | c | 25Y 63 00 | 75YR58 | 00 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| | 80-95 | sc | 05Y 72 00 | 75YR58 | 00 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| | 95-120 | c | 75YR63 00 | 75YR66 | 71 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| 44 | 0-25 | mc1 | 10YR43 53 | 75YR46 | 00 | F | | | 1 | 0 | HR | 3 | | | | |
| | 25-33 | hc1 | 10YR53 00 | 75YR56 | 00 | C | | | Y | 0 | 0 | HR | 2 | | | |
| | 33-60 | c | 10YR73 00 | 75YR58 | 71 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| | 60-120 | sc | 25Y 72 00 | 10YR68 | 00 | M | | | Y | 0 | 0 | HR | 5 | P | | Y |
| 45 | 0-25 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 4 | | | | |
| | 25-35 | sc1 | 25Y 52 00 | 10YR46 | 00 | C | | | Y | 0 | 0 | HR | 2 | | | |
| | 35-90 | c | 10YR64 00 | 75YR68 | 72 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| | 90-100 | sc | 10YR64 00 | 75YR68 | 72 | M | | | Y | 0 | 0 | HR | 15 | P | | Y |
| 46 | 0-26 | sc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 3 | | | | |
| | 26-35 | sc1 | 10YR42 52 | 75YR46 | 00 | C | | | Y | 0 | 0 | HR | 3 | | | |
| | 35-65 | ms1 | 25Y 73 00 | 10YR56 | 00 | C | | | Y | 0 | 0 | | 0 | | | |
| | 65-95 | c | 75YR64 00 | 75YR58 | 72 | M | 00MNO0 | 00 | Y | 0 | 0 | | 0 | P | | Y |
| | 95-120 | sc | 75YR64 00 | 75YR58 | 72 | M | | | Y | 0 | 0 | | 0 | P | | Y |
| 47 | 0-30 | mc1 | 10YR43 00 | | | | | | 1 | 0 | HR | 3 | | | | |
| | 30-50 | c | 25Y 62 00 | 75YR68 | 00 | M | | | Y | 0 | 0 | HR | 3 | P | | Y |
| | 50-90 | c | 25Y 62 00 | 75YR68 | 00 | M | | | Y | 0 | 0 | HR | 15 | P | | Y |
| 48 | 0-25 | sc1 | 10YR43 00 | | | | | | 3 | 0 | HR | 6 | | | | |
| | 25-55 | ms1 | 25Y 62 00 | 75YR56 | 00 | C | | | Y | 0 | 0 | HR | 2 | | | |
| | 55-90 | sc | 25Y 72 73 | 75YR58 | 00 | M | | | Y | 0 | 0 | HR | 5 | P | | Y |
| | 90-120 | c | 75YR64 00 | 75YR68 | 71 | M | | | Y | 0 | 0 | | 0 | P | | Y |