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**TEST VALLEY LOCAL PLAN REVIEW  
Sites 69 71 Land at Abbotswood  
Romsey Hampshire  
Agricultural Land Classification  
ALC Map and Report  
Semi Detailed Survey  
April 1997**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

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**AGRICULTURAL LAND CLASSIFICATION REPORT**  
**TEST VALLEY BOROUGH LOCAL PLAN REVIEW**  
**SITES 69 71 LAND AT ABBOTSWOOD ROMSEY HAMPSHIRE**  
**SEMI DETAILED SURVEY**

**INTRODUCTION**

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of 49.6 hectares of land located between Sandy Lane Braishfield Road Cupernham Lane and the suburb of Cupernham to the north of Romsey in Hampshire. The survey was carried out during January 1997.

2 The survey was commissioned by the Ministry of Agriculture Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading in connection with the Test Valley Borough Local Plan Review. The results of this survey supersede any previous ALC information for this land.

3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988). A description of the ALC grades and subgrades is given in Appendix I.

4 At the time of survey the agricultural land at this site was unmanaged grassland. The majority of this area appears to have been disturbed by gravel workings and restored to a lower level. The only area of agricultural land that appears not to have been disturbed is to the north east of the site. The areas of Other Land mapped to the north and south west of the site are respectively an area of gorse scrub and some mixed woodland.

**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 overleaf.

7 The fieldwork was conducted at an average density of 1 boring per 2 hectares. A total of 26 borings and three soil pits were described.

Table 1 Area of grades and other land

| Grade/Other land    | Area (hectares) | / site area | / surveyed area |
|---------------------|-----------------|-------------|-----------------|
| 3a                  | 2.9             | 5.9         | 6.0             |
| 3b                  | 45.1            | 90.9        | 94.0            |
| Other Land          | 1.6             | 3.2         |                 |
| Total surveyed area | 48.0            | 96.8        | 100.0           |
| Total site area     | 49.6            | 100.0       |                 |

8 The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The limitations to land quality include soil droughtiness and soil wetness.

9 Subgrade 3a has been mapped in the north of the site. The soils in this area experience a drought limitation. They comprise light loam topsoils overlying moderately stony horizons of similar texture passing to very slightly stony sandy and light loamy, occasionally medium loamy lower subsoil horizons. Soil droughtiness may affect plant growth, as the supply of available water may be deficient, especially in drier years.

10 Subgrade 3b has been mapped over the majority of the site. The soils in this area have been disturbed and are quite variable. Commonly they comprise a slightly to moderately stony medium loam topsoil passing to either similarly textured or clay subsoils. The subsoils are often very stony and experience a significant drought limitation as a result. In some areas, mainly towards the east of the site, standing water was observed. In these areas, soil wetness may be a further limiting factor. Soil wetness restricts land utilisation by reducing the number of days when trafficking by machinery or grazing by animals may occur without damaging the soil.

## FACTORS INFLUENCING ALC GRADE

### Climate

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

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

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

Table 2 Climatic and altitude data

| Factor                    | Units  | Values     |            |            |
|---------------------------|--------|------------|------------|------------|
| Grid reference            | N/A    | SU 363 225 | SU 366 229 | SU 369 234 |
| Altitude                  | m, AOD | 35         | 40         | 50         |
| Accumulated Temperature   | day°C  | 1514       | 1508       | 1496       |
| Average Annual Rainfall   | mm     | 812        | 811        | 812        |
| Field Capacity Days       | days   | 175        | 175        | 175        |
| Moisture Deficit, Wheat   | mm     | 108        | 108        | 107        |
| Moisture Deficit Potatoes | mm     | 102        | 101        | 100        |

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

15 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. Local climatic factors such as exposure and frost risk, are not believed to significantly affect this area. The site is climatically Grade 1.

#### Site

16 The site lies at altitudes in the range 35-50m AOD, the highest land being towards the north, gently sloping to the south west. The majority of the site has previously been worked and restored to a lower level. The exceptions to this occur firstly towards the north east of the site where the land has not been worked and in discrete areas across the site where mounds have been left for electricity pylons. The slopes within the site are generally slight and none are of sufficient gradient to affect agricultural land quality.

#### Geology and soils

17 The published geological information for the site (BGS 1975 and 1987) shows the majority of the site to comprise worked out ground. The majority of the remaining area is shown as drift deposits, a combination of head gravel, plateau gravel and river terrace deposits (terraces 4 and 5, mainly gravel). To the north of the site Bagshot Beds is mapped as a solid deposit.

18 The most detailed published soils information for the site (SSEW 1983 and 1984) maps the site as Urban. The soils adjacent to the site are mapped as the Shurrell Heath 2 association which are described as Well drained sandy soils with a bleached subsurface horizon, sometimes over soft rock, mainly on heaths and often very acid. Well drained sandy and coarse loamy soils on farmland (SSEW 1983). Soils of this type were found in the undisturbed area of the site. However, because the majority of the site is disturbed, this description is not representative of the stony and clayey soils encountered.

## 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

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

### Subgrade 3a

21 Land of good quality has been mapped towards the north of the site in a single mapping unit. The principal limitation is soil droughtiness.

22 Soils in this area are of a single type. They are characterised by the pit observation, 2P. The topsoils commonly comprise a slightly stony (up to 5% v/v total flints) medium sandy loam passing to a stoneless to moderately stony (up to 30% v/v total flints) medium sandy loam or loamy medium sand upper subsoil horizon exhibiting good structural characteristics. The lower subsoil comprises horizons which were stoneless to slightly stony (up to 10% v/v total flints) and of loamy medium sand, medium sandy loam or sandy clay loam texture, all of which exhibit moderate structural characteristics. Although the soils in this area were gleyed or slightly gleyed immediately below the topsoil and Wetness Class II has been appropriately applied, soil droughtiness is the principal limiting factor. In the local climate, this combination of soil textures and stoniness leads to Subgrade 3a being applied as it is likely that plant growth and development will be adversely affected due to a lack of available water, especially in drier years.

### Subgrade 3b

23 Land of moderate quality has been mapped in a single mapping unit covering the majority of the site. The principal limitations are soil droughtiness and topsoil stoniness, with soil wetness as a further limiting factor in some areas.

24 The soils in this area are variable, although the majority are characterised by the pit observations 1P and 3P. The most common soil type encountered is similar to 1P and comprises a moderately stony (up to 35% v/v total flints, including up to 19% > 2cm) occasionally gleyed medium or heavy clay loam topsoil. This overlies a commonly gleyed heavy clay loam or clay subsoil containing up to 50% v/v total flints. This horizon was commonly impenetrable to the soil auger between 20 and 75cm. The pit observation was impenetrable at 55cm over a stonier clay horizon. In the prevalent local climate, soils of this nature are assigned to Subgrade 3b on the basis of soil droughtiness as the stone content restricts the water carrying capacity of the soils and hence restricts water availability to plants such that plant growth and yield will be restricted in most years.

25 Some of the topsoils encountered (including 1P) contained more than 15% flints by volume greater than 2cm in diameter. These profiles cannot be graded higher than Subgrade 3b as the stone content increases production costs and decreases crop quality.

26 Towards the east of the site some areas were wet at the surface at the time of survey Pit observation 3P was in this area The soils comprise a very slightly stony (2% v/v total flints) gleyed medium clay loam topsoil overlying a narrow slightly stony (5% v/v total flints) gleyed medium silty clay loam upper subsoil This passes to a very stony (41% v/v total flints) heavy clay loam lower subsoil which was saturated and impenetrable Roots could not be observed beyond 50cm in the saturated stony horizon Therefore soil droughtiness is the principal limitation in these areas as in addition to the stoniness of the profile the restriction in rooting depth further limits the available water to plants Soil wetness may also be considered as a limiting factor in this area as the site is low lying in respect of its surroundings and the provision of adequate drainage would be difficult Soil wetness restricts land utilisation by reducing the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock as well as adversely affecting crop growth and development

27 Occasional observations over the disturbed parts of the site were of both slightly better and slightly worse quality than Subgrade 3b However these are of insufficient distribution to justify separate mapping

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## SOURCES OF REFERENCE

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BGS London

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Met Office Bracknell

Soil Survey of England and Wales (1983) *Soils of South East England. 1 250 000 Scale*  
SSEW Harpenden

Soil Survey of England and Wales (1984) *Soils of South East England. Bulletin No 15*  
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## 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)**

## 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

|            |                       |            |                     |            |               |
|------------|-----------------------|------------|---------------------|------------|---------------|
| <b>ARA</b> | Arable                | <b>WHT</b> | Wheat               | <b>BAR</b> | Barley        |
| <b>CER</b> | Cereals               | <b>OAT</b> | Oats                | <b>MZE</b> | Maize         |
| <b>OSR</b> | Oilseed rape          | <b>BEN</b> | Field beans         | <b>BRA</b> | Brassicae     |
| <b>POT</b> | Potatoes              | <b>SBT</b> | Sugar beet          | <b>FCD</b> | Fodder crops  |
| <b>LIN</b> | Linseed               | <b>FRT</b> | Soft and top fruit  | <b>FLW</b> | Fallow        |
| <b>PGR</b> | Permanent<br>pasture  | <b>LEY</b> | Ley grass           | <b>RGR</b> | Rough grazing |
| <b>SCR</b> | Scrub                 | <b>CFW</b> | Coniferous woodland | <b>OTH</b> | Other         |
| <b>DCW</b> | Deciduous<br>woodland | <b>BOG</b> | Bog or marsh        | <b>SAS</b> | Set Aside     |
| <b>HTH</b> | Heathland             | <b>HRT</b> | Horticultural crops | <b>PLO</b> | Ploughed      |

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

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

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

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

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

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

|             |                        |              |             |              |                   |
|-------------|------------------------|--------------|-------------|--------------|-------------------|
| <b>MREL</b> | Microrelief limitation | <b>FLOOD</b> | Flood risk  | <b>EROSN</b> | Soil erosion risk |
| <b>EXP</b>  | Exposure limitation    | <b>FROST</b> | Frost prone | <b>DIST</b>  | Disturbed land    |
| <b>CHEM</b> | Chemical limitation    |              |             |              |                   |

9 **LIMIT** The main limitation to land quality The following abbreviations are used

|           |                 |           |                 |           |                           |
|-----------|-----------------|-----------|-----------------|-----------|---------------------------|
| <b>OC</b> | Overall Climate | <b>AE</b> | Aspect          | <b>ST</b> | Topsoil Stoniness         |
| <b>FR</b> | Frost Risk      | <b>GR</b> | Gradient        | <b>MR</b> | Microrelief               |
| <b>FL</b> | Flood Risk      | <b>TX</b> | Topsoil Texture | <b>DP</b> | Soil Depth                |
| <b>CH</b> | Chemical        | <b>WE</b> | Wetness         | <b>WK</b> | Workability               |
| <b>DR</b> | Drought         | <b>ER</b> | Erosion Risk    | <b>WD</b> | Soil Wetness/Droughtiness |
| <b>EX</b> | Exposure        |           |                 |           |                           |

## Soil Pits and Auger Borings

- 1 **TEXTURE** soil texture classes are denoted by the following abbreviations

|            |                 |            |                 |            |                    |
|------------|-----------------|------------|-----------------|------------|--------------------|
| <b>S</b>   | Sand            | <b>LS</b>  | Loamy Sand      | <b>SL</b>  | Sandy Loam         |
| <b>SZL</b> | Sandy Silt Loam | <b>CL</b>  | Clay Loam       | <b>ZCL</b> | Silty Clay Loam    |
| <b>ZL</b>  | Silt Loam       | <b>SCL</b> | Sandy Clay Loam | <b>C</b>   | Clay               |
| <b>SC</b>  | Sandy Clay      | <b>ZC</b>  | Silty Clay      | <b>OL</b>  | Organic Loam       |
| <b>P</b>   | Peat            | <b>SP</b>  | Sandy Peat      | <b>LP</b>  | Loamy Peat         |
| <b>PL</b>  | Peaty Loam      | <b>PS</b>  | Peaty Sand      | <b>MZ</b>  | 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

|          |                                                                |
|----------|----------------------------------------------------------------|
| <b>F</b> | Fine (more than 66% of the sand less than 0.2mm)               |
| <b>M</b> | Medium (less than 66% fine sand and less than 33% coarse sand) |
| <b>C</b> | Coarse (more than 33% of the sand larger than 0.6mm)           |

The clay loam and silty clay loam classes will be sub-divided according to the clay content

**M** Medium (<27% clay)    **H** Heavy (27-35% clay)

- 2 **MOTTLE COL** Mottle colour using Munsell notation

- 3 **MOTTLE ABUN** Mottle abundance expressed as a percentage of the matrix or surface described

**F** few <2%    **C** common 2-20%    **M** many 20-40%    **VM** very many 40% +

- 4 **MOTTLE CONT** Mottle contrast

**F** faint indistinct mottles evident only on close inspection  
**D** distinct mottles are readily seen  
**P** prominent mottling is conspicuous and one of the outstanding features of the horizon

- 5 **PED COL** Ped face colour using Munsell notation

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

- 7 **STONE LITH** Stone Lithology one of the following is used

|             |                                         |             |                                      |
|-------------|-----------------------------------------|-------------|--------------------------------------|
| <b>HR</b>   | all hard rocks and stones               | <b>FSST</b> | soft fine grained sandstone          |
| <b>ZR</b>   | soft, argillaceous or silty rocks       | <b>CH</b>   | chalk                                |
| <b>MSST</b> | soft medium grained sandstone           | <b>GS</b>   | gravel with porous (soft) stones     |
| <b>SI</b>   | soft weathered igneous/metamorphic rock | <b>GH</b>   | 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 | <b>WK</b>  | weakly developed   | <b>MD</b> | moderately developed |
|                       | <b>ST</b>  | strongly developed |           |                      |
| Ped size              | <b>F</b>   | fine               | <b>M</b>  | medium               |
|                       | <b>C</b>   | coarse             |           |                      |
| Ped shape             | <b>S</b>   | single grain       | <b>M</b>  | massive              |
|                       | <b>GR</b>  | granular           | <b>AB</b> | angular blocky       |
|                       | <b>SAB</b> | sub angular blocky | <b>PR</b> | prismatic            |
|                       | <b>PL</b>  | platy              |           |                      |

9 **CONSIST** Soil consistence is described using the following notation

|                        |                          |                          |
|------------------------|--------------------------|--------------------------|
| <b>L</b> loose         | <b>FM</b> firm           | <b>EH</b> extremely hard |
| <b>VF</b> very friable | <b>VM</b> very firm      |                          |
| <b>FR</b> friable      | <b>EM</b> extremely firm |                          |

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

|            |                                                        |
|------------|--------------------------------------------------------|
| <b>APW</b> | available water capacity (in mm) adjusted for wheat    |
| <b>APP</b> | available water capacity (in mm) adjusted for potatoes |
| <b>MBW</b> | moisture balance wheat                                 |
| <b>MBP</b> | moisture balance potatoes                              |

SOIL PIT DESCRIPTION

Site Name TESTVALLEYLP SITES 69 71 Pit Numbe 1P

Grid Reference SU36622315 Average Annual Rainfall 811 mm  
 Accumulated Temperature 1508 degree days  
 Field Capacity Level 175 days  
 Land Use Permanent Grass  
 Slope and Aspect degrees

| HORIZON | TEXTURE | COLOUR     | STONES | TOT STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---------|---------|------------|--------|-----------|------|---------|-----------|---------|--------------|------|
| 0-21    | MCL     | 10YR4/2.5  | 17     | 25        | HR   | F       |           |         |              |      |
| 21-55   | C       | 2.5Y 7.2/0 | 0      | 50        | HR   | M       | M         | VM      | P            |      |

Wetness Grade 3B  
 Wetness Class IV  
 Gleying 21 cm  
 SPL 21 cm

Drought Grade 3B  
 APW 51 mm MBW 50 mm  
 APP 53 mm MBP 55 mm

FINAL ALC GRADE 3B  
 MAIN LIMITATION Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name TESTVALLEYLP SITES 69 71 Pit Numbe 2P

Grid Reference SU36902330 Average Annual Rainfall 811 mm  
 Accumulated Temperature 1508 degree days  
 Field Capacity Level 175 days  
 Land Use Rough Grazing  
 Slope and Aspect 1 degrees S

| HORIZON | TEXTURE | COLOUR      | STONES | TOT STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---------|---------|-------------|--------|-----------|------|---------|-----------|---------|--------------|------|
| 0-33    | MSL     | 10YR4.3/0   | 2      | 5         | HR   |         |           |         |              |      |
| 33-54   | MSL     | 10YR5.4/0   | 13     | 30        | HR   | C       | WKCSAB    | VF      | G            |      |
| 54-75   | LMS     | 10YR7.4/6.6 | 0      | 3         | HR   | M       | MDCPL     | FR      | M            |      |
| 75-85   | MSL     | 10YR7.4/0   | 0      | 0         |      | M       | MDCSAB    | FR      | M            |      |
| 85-120  | MSL     | 10YR7.3/0   | 0      | 0         |      | M       | MDCPL     | FR      | M            |      |

Wetness Grade 1  
 Wetness Class I  
 Gleying 33 cm  
 SPL cm

Drought Grade 3A  
 APW 137mm MBW 36 mm  
 APP 90 mm MBP 18 mm

FINAL ALC GRADE 3A  
 MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TESTVALLEYLP SITES 69 71 Pit Number 3P

Grid Reference SU37002303 Average Annual Rainfall 811 mm  
 Accumulated Temperature 1508 degree days  
 Field Capacity Level 175 days  
 Land Use Rough Grazing  
 Slope and Aspect degrees

| HORIZON | TEXTURE | COLOUR    | STONES | 2 | TOT STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---------|---------|-----------|--------|---|-----------|------|---------|-----------|---------|--------------|------|
| 0- 25   | MCL     | 10YR42 00 | 0      |   | 2         | HR   | M       |           |         |              |      |
| 25- 35  | MZCL    | 10YR32 00 | 0      |   | 5         | HR   | M       |           |         | P            |      |
| 35- 50  | HCL     | 10YR56 00 | 0      |   | 41        | HR   |         |           |         | P            |      |

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

Drought Grade 3B APW 67 mm MBW 34 mm  
 APP 67 mm MBP -41 mm

FINAL ALC GRADE 3B  
 MAIN LIMITATION Soil Wetness/Droughtiness

| 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         | SU36602340 | PGR S      | 1       | 20 20   | 4      | 3A    | 99    | 2 98   | 10    | 3A |           | Y          | WD         | 3A  | IMP FLINTS 90  |
| 1P        | SU36622315 | PGR        |         | 21 21   | 4      | 3B    | 51    | 50 53  | 55    | 3B |           | Y          | WD         | 3B  | PIT IMP 55     |
| 2P        | SU36902330 | RGR S      | 1       | 33      | 1      | 1     | 137   | 36 90  | 18    | 3A |           |            | DR         | 3A  | PIT100 AUG120  |
| 3         | SU36702330 | PGR S      | 1       | 33      | 1      | 1     | 105   | 4 81   | 27    | 3A |           |            | DR         | 3A  |                |
| 3P        | SU37002303 | RGR        |         | 0       | 4      | 3B    | 67    | 34 67  | -41   | 3B |           | Y          | WD         | 3B  | PIT WATER 50   |
| 5         | SU36902330 | RGR S      | 1       | 30      | 1      | 1     | 136   | 35 98  | 10    | 2  |           |            | DR         | 2   | SEE 2P         |
| 6         | SU36402320 | PGR        |         |         | 1      | 1     | 62    | 39 62  | -46   | 3B |           | Y          | DR         | 3B  | IMP FLINTS 50  |
| 8         | SU36602320 | PGR        |         | 25 25   | 4      | 3B    | 52    | -49 52 | 56    | 4  |           | Y          | WE         | 3B  | IMP FLINTS 40  |
| 10        | SU36802320 | PGR        |         | 5 5     | 4      | 3B    | 72    | 29 79  | 29    | 3B |           | Y          | WE         | 3B  | IMP FLINTS 65  |
| 13        | SU36502310 | PGR        |         |         | 1      | 1     | 60    | -41 60 | -48   | 3B |           | Y          | DR         | 3B  | IMP INFILL 40  |
| 15        | SU36702310 | PGR        |         | 0 30    | 4      | 3B    | 57    | -44 60 | -48   | 3B |           | Y          | WS         | 3B  | IMP FLINTS 55  |
| 17        | SU36862310 | PGR        |         |         | 1      | 1     | 96    | 5 106  | 2     | 3A |           | Y          | DR         | 3A  | IMP INFILL 70  |
| 19        | SU37102310 | RGR        |         | 0 25    | 4      | 3B    | 80    | 21 89  | 19    | 3B |           | Y          | WE         | 3B  | IMP FLINTS 70  |
| 20        | SU36402300 | PGR        |         | 50      | 1      | 1     | 98    | 3 103  | 5     | 3A |           | Y          | DR         | 3A  | IMP FLINTS 75  |
| 22        | SU36602300 | PGR        |         | 0 35    | 4      | 3B    | 82    | 19 88  | 20    | 3A |           | Y          | WE         | 3B  | IMP 60 DRY     |
| 24        | SU36802300 | PGR        |         | 0       | 2      | 3A    | 53    | -48 53 | 55    | 3B |           | Y          | DB         | 4   | NO TOPSOIL     |
| 26        | SU37002300 | RGR        |         | 0 45    | 4      | 3B    | 89    | 12 94  | 14    | 3A |           | Y          | WE         | 3B  |                |
| 29        | SU36502290 | PGR        |         | 5 5     | 4      | 3B    | 73    | 28 79  | 29    | 3B |           | Y          | WE         | 3B  |                |
| 31        | SU36702290 | PGR        |         | 0       | 1      | 1     | 48    | 53 48  | 60    | 4  |           | Y          | DR         | 3B  | IMP 35 SEE 1P  |
| 33        | SU36902290 | RGR        |         | 15      | 1      | 1     | 45    | 56 45  | 63    | 4  |           | Y          | WD         | 3B  | IMP 30 SEE 1P  |
| 34        | SU37002290 | RGR        |         | 0 40    | 4      | 3B    | 80    | 21 80  | 28    | 3B |           | Y          | WD         | 3B  | IMP FLINTS 50  |
| 35        | SU36402280 | PGR        |         | 10      | 2      | 2     | 34    | 67 34  | 74    | 4  |           | Y          | DR         | 3B  | IMP 35 SEE 1P  |
| 37        | SU36602280 | PGR        |         | 25 25   | 4      | 3B    | 57    | 44 57  | 51    | 3B |           | Y          | DR         | 3B  | IMP 40 SEE 1P  |
| 39        | SU36802280 | PGR        |         | 20      | 1      | 1     | 42    | 59 42  | 66    | 4  |           | Y          | DR         | 3B  | IMP FLS/GRAV25 |
| 41        | SU37002280 | RGR        |         | 0       | 2      | 3B    | 29    | 72 29  | 79    | 4  |           | Y          | WD         | 3B  | IMP 20 SEE 1P  |
| 44        | SU36502270 | PGR        |         | 25 25   | 4      | 3B    | 112   | 11 87  | 21    | 3A |           | Y          | TS         | 3B  | DISTURBED      |
| 46        | SU36702270 | PGR W      | 1       | 35 55   | 3      | 3A    | 118   | 17 110 | 2     | 2  |           | Y          | WE         | 3A  |                |
| 49        | SU36402260 | PGR        |         |         | 1      | 1     | 43    | 58 43  | 65    | 4  |           | Y          | DR         | 4   | IMP INFILL 35  |
| 51        | SU36302250 | PGR        |         |         | 1      | 1     | 47    | 54 47  | 61    | 4  |           | Y          | DR         | 3B  | IMP 40 SEE 1P  |

| SAMPLE | DEPTH  | TEXTURE | COLOUR    | -MOTTLES  |      |      | PED       |     | STONES |   |      | STRUCT/ SUBS |         | SPL | CALC |                    |
|--------|--------|---------|-----------|-----------|------|------|-----------|-----|--------|---|------|--------------|---------|-----|------|--------------------|
|        |        |         |           | COL       | ABUN | CONT | COL       | GLE | 2      | 6 | LITH | TOT          | CONSIST |     |      | STR                |
| 1      | 0 20   | ms1     | 10YR42 00 |           |      |      |           |     | 0      | 0 | HR   | 10           |         |     |      |                    |
|        | 20 60  | hc1     | 10YR53 00 | 10YR58 00 | C    |      |           | Y   | 0      | 0 | HR   | 20           |         | M   | Y    |                    |
|        | 60 85  | c       | 25Y 41 00 | 10YR58 00 | C    |      |           | Y   | 0      | 0 | HR   | 15           |         | P   | Y    |                    |
|        | 85-90  | hc1     | 05Y 41 00 | 10YR46 00 | C    |      |           | Y   | 0      | 0 | HR   | 35           |         | P   | Y    | IMP FLINTS 90      |
| 1P     | 0 21   | mc1     | 10YR42 52 | 10YR46 00 | F    |      |           |     | 17     | 0 | HR   | 25           |         |     |      | PIT IMP 55         |
|        | 21 55  | c       | 25Y 72 00 | 75YR56 00 | M    |      |           | Y   | 0      | 0 | HR   | 50           | M       | VM  | P    | Y                  |
| 2P     | 0 33   | ms1     | 10YR43 00 |           |      |      |           |     | 2      | 0 | HR   | 5            |         |     |      | PIT @ BOR 5        |
|        | 33-54  | ms1     | 10YR54 00 | 10YR56 00 | C    |      |           | Y   | 13     | 0 | HR   | 30           | WKCSAB  | VF  | G    |                    |
|        | 54 75  | lms     | 10YR74 66 | 75YR58 00 | M    |      |           | Y   | 0      | 0 | HR   | 3            | MDCPL   | FR  | M    |                    |
|        | 75-85  | ms1     | 10YR74 00 | 10YR66 58 | M    |      |           | Y   | 0      | 0 |      | 0            | MDCSAB  | FR  | M    |                    |
|        | 85-120 | ms1     | 10YR73 00 | 05YR58 00 | M    |      |           | Y   | 0      | 0 |      | 0            | MDCPL   | FR  | M    |                    |
| 3      | 0 33   | ms1     | 10YR41 00 |           |      |      |           |     | 0      | 0 | HR   | 3            |         |     |      |                    |
|        | 33 60  | lms     | 10YR44 54 | 10YR66 00 | C    |      |           | S   | 0      | 0 |      | 0            |         | M   |      |                    |
|        | 60 75  | lms     | 10YR64 00 | 10YR68 00 | C    |      |           | Y   | 0      | 0 | HR   | 10           |         | M   |      |                    |
|        | 75-85  | sc1     | 25Y 52 00 | 75YR58 00 | M    |      |           | Y   | 0      | 0 | HR   | 3            |         | M   |      |                    |
|        | 85-120 | lms     | 75YR58 00 | 25Y 63 00 | C    |      |           | Y   | 0      | 0 |      | 0            |         | M   |      |                    |
| 3P     | 0 25   | mc1     | 10YR42 00 | 10YR46 00 | M    |      |           | Y   | 0      | 0 | HR   | 2            |         |     |      | V WET ON SURFACE   |
|        | 25-35  | mzc1    | 10YR32 00 | 05YR56 00 | M    |      |           | Y   | 0      | 0 | HR   | 5            |         | P   |      |                    |
|        | 35 50  | hc1     | 10YR56 00 |           |      |      |           | Y   | 0      | 0 | HR   | 41           |         | P   |      | STONES SAMPLED     |
| 5      | 0 30   | ms1     | 10YR42 00 |           |      |      |           |     | 0      | 0 | HR   | 2            |         |     |      | SEE 2P             |
|        | 30 50  | ms1     | 10YR54 64 | 10YR58 00 | C    |      |           | Y   | 0      | 0 |      | 0            |         | G   |      |                    |
|        | 50 65  | lms     | 10YR64 00 | 10YR58 00 | C    |      |           | Y   | 0      | 0 |      | 0            |         | M   |      |                    |
|        | 65-85  | lms     | 10YR73 00 | 10YR58 00 | C    |      |           | Y   | 0      | 0 |      | 0            |         | M   |      |                    |
|        | 85-120 | sc1     | 05Y 71 00 | 75YR58 00 | M    |      |           | Y   | 0      | 0 |      | 0            |         | M   |      |                    |
| 6      | 0 30   | mc1     | 10YR42 00 |           |      |      |           |     | 5      | 0 | HR   | 15           |         |     |      |                    |
|        | 30 50  | hc1     | 10YR43 42 | 10YR46 00 | F    |      | 00MN00 00 |     | 0      | 0 | HR   | 40           |         | P   |      | IMP FLINTS 50      |
| 8      | 0 25   | mc1     | 10YR42 00 |           |      |      |           |     | 0      | 0 | HR   | 15           |         |     |      |                    |
|        | 25 40  | c       | 25Y 61 00 | 10YR68 00 | M    |      |           | Y   | 0      | 0 | HR   | 35           |         | P   | Y    | IMP FLINTS 40      |
| 10     | 0 5    | mc1     | 10YR42 00 |           |      |      |           |     | 0      | 0 | HR   | 5            |         |     |      |                    |
|        | 5 25   | c       | 10YR52 53 | 10YR56 00 | C    |      |           | Y   | 0      | 0 | HR   | 10           |         | P   | Y    | SLIGHTLY SANDY     |
|        | 25 55  | c       | 25Y 61 00 | 05YR58 00 | M    |      |           | Y   | 0      | 0 | HR   | 5            |         | P   | Y    | SLIGHTLY SANDY     |
|        | 55 65  | c       | 25Y 62 72 | 75YR58 00 | M    |      |           | Y   | 0      | 0 | HR   | 25           |         | P   | Y    | IMP FLINTS 65      |
| 13     | 0 25   | mc1     | 10YR42 00 |           |      |      |           |     | 5      | 0 | HR   | 15           |         |     |      |                    |
|        | 25-40  | hc1     | 10YR42 52 | 10YR58 00 | F    |      |           |     | 0      | 0 | CH   | 25           |         | M   | Y    | IMP CHALKY FILL 40 |
| 15     | 0 30   | mc1     | 10YR41 51 | 10YR56 00 | C    |      |           | Y   | 20     | 0 | HR   | 35           |         |     |      | SEE 1P             |
|        | 30 55  | c       | 10YR53 52 | 10YR58 00 | M    |      |           | Y   | 0      | 0 | HR   | 30           |         | P   | Y    | IMP FLINTS 55      |
| 17     | 0 20   | mc1     | 10YR43 53 |           |      |      |           |     | 0      | 0 | HR   | 5            |         |     |      |                    |
|        | 20 50  | mc1     | 10YR44 54 | 10YR56 00 | F    |      |           |     | 0      | 0 | HR   | 5            |         | M   |      |                    |
|        | 50 65  | hc1     | 10YR54 00 | 10YR56 00 | F    |      | 00MN00 00 |     | 0      | 0 | HR   | 10           |         | M   |      |                    |
|        | 65 70  | mc1     | 10YR21 00 |           |      |      |           |     | 0      | 0 | HR   | 30           |         | P   |      | IMP INFILL 70      |



| SAMPLE | DEPTH  | TEXTURE | COLOUR    | -MOTTLES  |      |      | PED      |     | STONES |    |      | STRUCT/<br>CONSIST | SUBS |     |     | SPL | CALC                |
|--------|--------|---------|-----------|-----------|------|------|----------|-----|--------|----|------|--------------------|------|-----|-----|-----|---------------------|
|        |        |         |           | COL       | ABUN | CONT | COL      | GLE | 2      | 6  | LITH |                    | TOT  | STR | POR |     |                     |
| 19     | 0 25   | mc1     | 10YR42 00 | 10YR56 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 15   |     |     |     |                     |
|        | 25-50  | c       | 25Y 61 00 | 10YR68 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 10   | P   |     | Y   |                     |
|        | 50 70  | c       | 25Y 53 00 | 10YR58 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 20   | P   |     | Y   | IMP FLINTS 70       |
| 20     | 0 30   | mc1     | 10YR42 00 |           |      |      |          |     |        | 3  | 0    | HR                 | 8    |     |     |     |                     |
|        | 30 50  | hc1     | 10YR43 31 |           |      |      |          |     |        | 0  | 0    | HR                 | 10   | M   |     |     |                     |
|        | 50 75  | hc1     | 10YR43 00 | 10YR46 00 | C    |      |          |     | S      | 0  | 0    | HR                 | 25   | M   |     |     | IMP FLINTS 75       |
| 22     | 0 35   | mc1     | 10YR52 00 | 75YR56 00 | C    |      | 00M00 00 | Y   | 1      | 0  | HR   | 10                 |      |     |     |     |                     |
|        | 35-50  | c       | 10YR63 66 | 75YR56 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 5    | P   |     | Y   |                     |
|        | 50 60  | c       | 10YR63 66 | 75YR56 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 3    | P   |     | Y   | IMP 60 DRY          |
| 24     | 0 40   | hc1     | 10YR63 00 | 75YR56 00 | M    |      | 00M00 00 | Y   | 9      | 0  | HR   | 18                 | M    |     |     |     | WATER ON SURFACE    |
| 26     | 0 20   | mzc1    | 10YR42 00 | 000C00 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 2    |     |     |     |                     |
|        | 20 45  | hc1     | 75YR53 00 | 000C00 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 2    | M   |     |     |                     |
|        | 45-60  | c       | 10YR42 00 | 000C00 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 10   | P   | Y   | Y   |                     |
| 29     | 0 5    | mc1     | 10YR42 00 |           |      |      |          |     |        | 0  | 0    | HR                 | 5    |     |     |     |                     |
|        | 5-60   | c       | 10YR62 00 | 75YR68 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 1    | P   |     | Y   |                     |
| 31     | 0 35   | mc1     | 10YR42 00 |           |      |      |          |     |        | 12 | 0    | HR                 | 25   |     |     |     | IMP FLINTS 35       |
| 33     | 0 15   | mc1     | 10YR42 00 |           |      |      |          |     |        | 0  | 0    | HR                 | 10   |     |     |     | WATER ON SURFACE    |
|        | 15 30  | hc1     | 10YR42 00 | 75YR46 00 | M    |      | 00M00 00 | Y   | 0      | 0  | HR   | 15                 | M    |     |     |     | IMP FLS/GRAVEL 30   |
| 34     | 0-40   | hc1     | 10YR42 00 | 10YR58 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 5    |     |     |     |                     |
|        | 40-50  | c       | 10YR42 00 | 10YR58 00 | M    |      | 00M00 00 | Y   | 0      | 0  | HR   | 15                 | P    | Y   | Y   |     | IMP FLINTS 50       |
| 35     | 0 10   | mc1     | 10YR42 00 |           |      |      |          |     |        | 19 | 5    | HR                 | 35   |     |     |     |                     |
|        | 10 35  | c       | 10YR43 53 | 75YR58 00 | M    |      | 00M00 00 | Y   | 0      | 0  | HR   | 35                 | P    |     |     |     | IMP FLINTS 35       |
| 37     | 0 25   | mc1     | 10YR53 00 |           |      |      |          |     |        | 6  | 0    | HR                 | 10   |     |     |     | AREAS OF RUSHES     |
|        | 25-40  | c       | 05Y 72 00 | 75YR68 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 20   | P   |     | Y   | IMP FLINTS 40       |
| 39     | 0 20   | mc1     | 10YR42 00 |           |      |      |          |     |        | 0  | 0    | HR                 | 5    |     |     |     | WATER ON SURFACE    |
|        | 20 25  | mc1     | 10YR42 00 | 10YR56 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 10   | M   |     |     | IMP FLS/GRAVELLY 25 |
| 41     | 0 20   | c       | 10YR42 00 | 10YR56 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 15   |     |     |     | IMP FLS/GRAVELLY 20 |
| 44     | 0 25   | mc1     | 10YR53 00 |           |      |      |          |     |        | 16 | 0    | HR                 | 25   |     |     |     |                     |
|        | 25-45  | c       | 05Y 71 00 | 75YR58 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 5    | P   |     | Y   | WET                 |
|        | 45-60  | hc1     | 10YR32 42 | 10YR58 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 20   | P   |     | Y   | DRY                 |
|        | 60 120 | c       | 10YR53 00 | 75YR68 00 | M    |      |          |     | Y      | 0  | 0    |                    | 0    | P   |     | Y   | WET                 |
| 46     | 0 35   | mc1     | 10YR52 00 |           |      |      |          |     |        | 2  | 0    | HR                 | 5    |     |     |     |                     |
|        | 35-55  | mc1     | 25Y 53 00 | 10YR68 00 | C    |      |          |     | Y      | 0  | 0    | HR                 | 5    | M   |     |     |                     |
|        | 55-70  | c       | 05Y 72 00 | 75YR68 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 2    | P   |     | Y   |                     |
|        | 70 100 | c       | 05Y 71 00 | 75YR58 00 | M    |      |          |     | Y      | 0  | 0    | HR                 | 5    | P   |     | Y   |                     |

| SAMPLE | DEPTH | TEXTURE | COLOUR    | -MOTTLES |      |      | PED | GLEY | STONES |    |      | STRUCT/ | SUBS    |     |     |     |               |
|--------|-------|---------|-----------|----------|------|------|-----|------|--------|----|------|---------|---------|-----|-----|-----|---------------|
|        |       |         |           | COL      | ABUN | CONT | COL |      | 2      | 6  | LITH | TOT     | CONSIST | STR | POR | IMP | SPL           |
| 49     | 0-30  | mc1     | 10YR43 00 |          |      |      |     | 18   | 5      | HR | 30   |         |         |     |     |     |               |
|        | 30-35 | hc1     | 10YR41 56 |          |      |      |     | 0    | 0      | HR | 40   |         | P       |     |     |     | IMP INFILL 35 |
| 51     | 0-20  | mc1     | 10YR43 00 |          |      |      |     | 5    | 19     | HR | 30   |         |         |     |     |     |               |
|        | 20-40 | ms1     | 10YR42 68 |          |      |      |     | 0    | 0      | HR | 30   |         | M       |     |     |     | IMP FLINTS 40 |