

**A1**  
**Hart District Replacement Local Plan**  
**Site 1024 - Church Farm, Eversley**  
**Agricultural Land Classification Survey Report**  
**ALC map and Report**  
**October 1996.**

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

**ADAS Reference: 1506/081/96**  
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**LUPU Commission: 02393**

**AGRICULTURAL LAND CLASSIFICATION REPORT**  
**HART DISTRICT REPLACEMENT LOCAL PLAN**  
**SITE 1024 - CHURCH FARM, EVERSLEY.**

**Introduction**

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on approximately 32 hectares of land situated to the north west of Eversley, Hampshire. The survey was carried out during October 1996.
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 Hart District Replacement Local Plan. 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 large field to the west of the site was newly ploughed. Most of the remainder of the land was in stubble except for the narrow field running along the extreme eastern boundary of the site in a north-south direction which was in permanent pasture. The areas shown as 'Other Land' comprised numerous farm buildings, some wooded areas and private gardens.

**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 below.

**Table 1: Area of grades and other land**

| Grade/Other land    | Area (hectares) | % site area | % surveyed area |
|---------------------|-----------------|-------------|-----------------|
| 3b                  | 26.5            | 83.1        | 100.0           |
| Other Land          | 5.4             | 16.9        | -               |
| Total surveyed area | 26.5            | -           | 100.0           |
| Total site area     | 31.9            | 100.0       | -               |

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

8. All of the agricultural land on this site has been classified as Subgrade 3b (moderate quality), the key limitation being soil droughtiness.

9. The soil profiles comprise two main soil types. Some profiles comprise deep, well drained sandy soils with very little stone throughout. Occasionally profiles become heavier at depth or are impenetrable to the auger.

10. The majority of profiles comprise much stonier soils with similar textures as above. Slightly stony medium sandy loam and loamy medium sand topsoils dominate which overlie similar, but moderately or very stony subsoils.

11. Across the whole site, the combination of soil textures, structures and stone contents acts to restrict the amount of profile available water for crops. Crop growth and yields will therefore be adversely affected restricting the land to Subgrade 3b on the basis of a moderate soil droughtiness limitation.

### Factors Influencing ALC Grade

#### Climate

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

13. 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 775 612 |
| Altitude                   | m, AOD | 65         |
| Accumulated Temperature    | day°C  | 1453       |
| Average Annual Rainfall    | mm     | 678        |
| Field Capacity Days        | days   | 141        |
| Moisture Deficit, Wheat    | mm     | 109        |
| Moisture Deficit, Potatoes | mm     | 102        |

14. 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.

15. 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.

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. The site is climatically Grade 1. The site is believed to be rather frost

prone (Met Office, 1971). However, there was no evidence of this at the site so it was not taken into account in the survey. Exposure is not thought likely to affect the area.

### **Site**

17. The agricultural land at this site lies at an altitude of 57-65m AOD. The majority of the land at the site is very gently sloping with slight undulations. Nowhere does gradient or microrelief affect agricultural land quality.

### **Geology and soils**

18. The published geological information for the site (B.G.S., 1978) shows the site to be underlain by Bagshot Beds in the north and east, with low level terrace deposits (valley gravel) to the south and west.

19. The most recently published soil information for the area (SSEW, 1983) shows the Efford 1 Association mapped across the site. This is described as 'well drained fine loamy soils over gravel, associated with similar permeable soils variably affected by groundwater.' (SSEW, 1983).

20. Detailed field survey broadly confirms the existence of such soils but with slightly coarser textural classes. Well drained moderately stony sandy loam and loamy sand profiles predominate at this site.

### **Agricultural Land Classification**

21. 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.

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

### *Subgrade 3b*

23. Land of moderate quality has been mapped across the survey area. The principal limitation is soil droughtiness.

24. The majority of soils are impenetrable to the auger at variable depths. The pits indicate that this was caused by the high proportion of flints in the soil profiles.

25. The majority of topsoils consist of non-calcareous, very slightly stony (4% total, 1% > 2cm flint) to moderately stony (20% total, 13% > 2cm flint) loamy medium sands, medium sandy loams and medium sandy silt loams. Continuing down the profile the upper and lower subsoils consist of the same textures as above but occasionally passing to coarser material with depth to include medium sands. These subsoils are slightly stony to moderately stony (5-57% flint) and are moderately well or well structured. A number of subsoils have more silty textures, but generally coincide with the description above. Pits 1 and 2 (see Appendix III) reveals that occasionally, soils become heavier at depth and show signs of seasonal waterlogging in the form of gleying and manganese concretions. In Pit 1 (Appendix III), a

slowly permeable horizon occurs at approximately 63cm depth which will tend to restrict water movement further up the profile. Despite this, all the soils across the site are assessed as Wetness Class I or II due to their coarse textures and relatively freely draining nature.

26. Due to the combination of soil characteristics and the local climate regime, these soils have restricted amounts of water, such that the land suffers a moderate droughtiness limitation. The combination of soil textures and structures acts to restrict the amount of profile available water for crops. In this locally dry climate crop growth and yields will therefore be adversely affected.

27. Occasional borings of higher or lower quality land also occur on this site but were too limited in number and extent to map separately.

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## 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 that 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 that restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

## APPENDIX II

### SOIL WETNESS CLASSIFICATION

#### Definitions of Soil Wetness Classes

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

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

#### Assessment of Wetness Class

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

<sup>1</sup> The number of days is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.

**APPENDIX III**

**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.

|                                 |                                 |                           |
|---------------------------------|---------------------------------|---------------------------|
| <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 Pasture   | <b>LEY:</b> Ley Grass           | <b>RGR:</b> Rough Grazing |
| <b>SCR:</b> Scrub               | <b>CFW:</b> Coniferous Woodland |                           |
| <b>DCW:</b> Deciduous Wood      |                                 |                           |
| <b>HTH:</b> Heathland           | <b>BOG:</b> Bog or Marsh        | <b>FLW:</b> Fallow        |
| <b>PLO:</b> Ploughed            | <b>SAS:</b> Set aside           | <b>OTH:</b> Other         |
| <b>HRT:</b> Horticultural Crops |                                 |                           |

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.

|                              |                            |                                      |
|------------------------------|----------------------------|--------------------------------------|
| <b>OC:</b> Overall Climate   | <b>AE:</b> Aspect          | <b>EX:</b> Exposure                  |
| <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>ST:</b> Topsoil Stoniness |                            |                                      |

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

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

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|--|--|
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| <b>ZR:</b> soft, argillaceous, or silty rocks      | <b>GH:</b> gravel with non-porous (hard) stones  |
| <b>MSST:</b> soft, medium grained sandstone        | <b>GS:</b> gravel with porous (soft) stones      |
| <b>SI:</b> 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:

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

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

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

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

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

SOIL PIT DESCRIPTION

Site Name : HART LP, SITE 1024 Pit Number : 1P

Grid Reference: SU77406130 Average Annual Rainfall : 678 mm  
 Accumulated Temperature : 1453 degree days  
 Field Capacity Level : 141 days  
 Land Use : Ploughed  
 Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR    | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---------|---------|-----------|-----------|-----------|------|---------|-----------|---------|--------------|------|
| 0- 28   | LMS     | 10YR42 00 | 2         | 5         | HR   |         |           |         |              |      |
| 28- 50  | LMS     | 10YR56 64 | 0         | 5         | HR   |         | MDVCAB    | FR      | G            |      |
| 50- 63  | MS      | 10YR54 64 | 0         | 10        | HR   | F       | MDVCAB    | FR      | G            |      |
| 63- 88  | SCL     | 25Y 62 74 | 0         | 2         | HR   | M       | MDCAB     | FM      | P            |      |
| 88-100  | C       | 05Y 62 00 | 0         | 5         | HR   | M       | MDCAB     | FM      | P            |      |

Wetness Grade : 1 Wetness Class : II  
 Gleying : 063 cm  
 SPL : 063 cm

Drought Grade : 3B APW : 87 mm MBW : -22 mm  
 APP : 70 mm MBP : -32 mm

FINAL ALC GRADE : 3B  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HART LP, SITE 1024

Pit Number : 2P

Grid Reference: SU77706130    Average Annual Rainfall : 678 mm  
 Accumulated Temperature : 1453 degree days  
 Field Capacity Level : 141 days  
 Land Use :  
 Slope and Aspect : 01 degrees E

| HORIZON | TEXTURE | COLOUR    | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---------|---------|-----------|-----------|-----------|------|---------|-----------|---------|--------------|------|
| 0- 32   | MSL     | 10YR32 00 | 2         | 8         | HR   |         |           |         |              |      |
| 32- 50  | MSL     | 10YR43 00 | 27        | 35        | HR   |         |           |         | M            |      |
| 50- 60  | LMS     | 10YR44 00 | 32        | 48        | HR   |         |           |         | M            |      |
| 60- 70  | MS      | 10YR46 00 | 27        | 57        | HR   |         |           |         | M            |      |
| 70- 83  | MS      | 10YR46 00 | 0         | 51        | HR   |         |           |         | M            |      |

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

Drought Grade : 3B                      APW : 76 mm    MBW : -33 mm  
 APP : 75 mm    MBP : -27 mm

FINAL ALC GRADE : 3B  
 MAIN LIMITATION : Droughtiness

| SAMPLE NO. | GRID REF   | ASPECT USE | --WETNESS-- |         | -WHEAT- |       | -POTS- |     | M.REL |     | EROSN | FROST | CHEM | ALC   | COMMENTS      |
|------------|------------|------------|-------------|---------|---------|-------|--------|-----|-------|-----|-------|-------|------|-------|---------------|
|            |            |            | GRDNT       | GLEYSPL | CLASS   | GRADE | AP     | MB  | AP    | MB  | DRT   | FLOOD | EXP  | DIST  |               |
| 1          | SU77506140 | PLO        |             |         | 1       | 1     | 43     | -66 | 45    | -57 | 4     |       |      | DR 3B | SEE 2P        |
| 1P         | SU77406130 | PLO        |             | 063 063 | 2       | 1     | 87     | -22 | 70    | -32 | 3B    |       |      | DR 3B |               |
| 2          | SU77606140 | PGR        |             | 030     | 1       | 1     | 90     | -19 | 95    | -7  | 3A    |       |      | DR 3A | IMP 70        |
| 2P         | SU77706130 | STB        | E           | 01      | 1       | 1     | 76     | -33 | 75    | -27 | 3B    |       |      | DR 3B |               |
| 4          | SU77806140 | PGR        |             |         | 1       | 1     | 44     | -65 | 44    | -58 | 4     |       |      | DR 3B | IMP 30 SEE 2P |
| 5          | SU77906140 | PGR        |             |         | 1       | 1     | 46     | -63 | 46    | -56 | 4     |       |      | DR 3B | IMP 30 SEE 2P |
| 6          | SU77106130 | PLO        |             |         | 1       | 1     | 57     | -52 | 61    | -41 | 4     |       |      | DR 3B | IMP 70 SEE 1P |
| 7          | SU77206130 | PLO        |             |         | 1       | 1     | 44     | -65 | 44    | -58 | 4     |       |      | DR 3B | IMP 50 SEE 1P |
| 8          | SU77306130 | PLO        |             |         | 1       | 1     | 105    | -4  | 70    | -32 | 3B    |       |      | DR 3B | SEE 1P        |
| 9          | SU77406130 | PLO        | N           | 01      | 1       | 1     | 53     | -56 | 52    | -50 | 4     |       |      | DR 3B | IMP 80 SEE 1P |
| 11         | SU77606130 | STB        |             |         | 1       | 1     | 63     | -46 | 64    | -38 | 3B    |       |      | DR 3B | IMP 55 SEE 2P |
| 12         | SU77706130 | STB        |             |         | 1       | 1     | 53     | -56 | 53    | -49 | 4     |       |      | DR 3B | IMP 35 SEE 2P |
| 13         | SU77806130 | PGR        | N           | 01      | 1       | 1     | 54     | -55 | 54    | -48 | 4     |       |      | DR 3B | IMP 40 SEE 2P |
| 14         | SU77906130 | PGR        |             |         | 2       | 1     | 65     | -44 | 65    | -37 | 3B    |       |      | DR 3B | IMP 35 SEE 2P |
| 15         | SU77306120 | PLO        | W           | 01      | 1       | 1     | 33     | -76 | 33    | -69 | 4     |       |      | DR 3B | IMP 15 SEE 2P |
| 16         | SU77406120 | PLO        | E           | 02      | 1       | 1     | 47     | -62 | 50    | -52 | 4     |       |      | DR 3B | IMP 70 SEE 1P |
| 18         | SU77606120 | STB        |             |         | 1       | 1     | 60     | -49 | 60    | -42 | 3B    |       |      | DR 3B | IMP 40 SEE 2P |
| 19         | SU77706120 | STB        |             |         | 1       | 1     | 68     | -41 | 69    | -33 | 3B    |       |      | DR 3B | IMP 55 SEE 2P |
| 20         | SU77806120 | STB        |             |         | 1       | 1     | 53     | -56 | 53    | -49 | 4     |       |      | DR 3B | IMP 35 SEE 2P |
| 21         | SU77906120 | PGR        |             |         | 1       | 1     | 49     | -60 | 49    | -53 | 4     |       |      | DR 3B | IMP 35 SEE 2P |
| 22         | SU77606110 | STB        |             |         | 1       | 1     | 52     | -57 | 52    | -50 | 4     |       |      | DR 3B | IMP 40 SEE 2P |
| 23         | SU77706110 | STB        |             |         | 1       | 1     | 47     | -62 | 47    | -55 | 4     |       |      | DR 3B | IMP 38 SEE 2P |
| 24         | SU77806110 | STB        |             |         | 1       | 1     | 45     | -64 | 45    | -57 | 4     |       |      | DR 3B | IMP 30 SEE 2P |
| 25         | SU77906110 | PGR        |             |         | 1       | 1     | 53     | -56 | 53    | -49 | 4     |       |      | DR 3B | IMP 35 SEE 2P |
| 26         | SU77606100 | STB        |             |         | 1       | 1     | 43     | -66 | 44    | -58 | 4     |       |      | DR 3B | IMP 55 SEE 2P |
| 27         | SU77706100 | STB        |             |         | 1       | 1     | 58     | -51 | 58    | -44 | 4     |       |      | DR 3B | IMP 50 SEE 2P |
| 28         | SU77806100 | STB        | E           | 01      | 1       | 1     | 57     | -52 | 57    | -45 | 4     |       |      | DR 3B | IMP 40 SEE 2P |

| SAMPLE | DEPTH  | TEXTURE | COLOUR    | ----MOTTLES----- |      |      | PED       |     | ----STONES----- |    |      | STRUCT/ | SUBS        | SPL        | CALC        |     |
|--------|--------|---------|-----------|------------------|------|------|-----------|-----|-----------------|----|------|---------|-------------|------------|-------------|-----|
|        |        |         |           | COL              | ABUN | CONT | COL.      | GLE | >2              | >6 | LITH |         |             |            |             | TOT |
| 1      | 0-30   | lms     | 10YR31 00 |                  |      |      |           |     | 7               | 2  | HR   | 15      |             |            |             |     |
|        | 30-50  | ms      | 10YR42 00 |                  |      |      |           |     | 0               | 0  | HR   | 20      | G           |            |             |     |
|        | 50-55  | ms      | 10YR32 00 |                  |      |      |           |     | 0               | 0  | HR   | 20      | G           |            |             |     |
|        | 55-70  | ms      | 75YR34 00 |                  |      |      |           |     | 0               | 0  | HR   | 20      | G           |            | Imp, flints |     |
| 1P     | 0-28   | lms     | 10YR42 00 |                  |      |      |           |     | 2               | 1  | HR   | 5       |             |            |             |     |
|        | 28-50  | lms     | 10YR56 64 |                  |      |      | 10YR42 00 |     | 0               | 0  | HR   | 5       | MDVCAB FR G |            |             |     |
|        | 50-63  | ms      | 10YR54 64 | 10YR58 00 F      |      |      | 00M00 00  |     | 0               | 0  | HR   | 10      | MDVCAB FR G |            |             |     |
|        | 63-88  | sc1     | 25Y 62 74 | 75YR58 00 M      |      |      |           |     | Y               | 0  | 0    | HR      | 2           | MDCAB FM P | Y           | Y   |
|        | 88-100 | c       | 05Y 62 00 | 75YR58 00 M      |      |      |           |     | Y               | 0  | 0    | HR      | 5           | MDCAB FM P | Y           | Y   |
| 2      | 0-30   | ms1     | 10YR32 00 |                  |      |      |           |     | 1               | 0  | HR   | 4       |             |            |             |     |
|        | 30-60  | ms1     | 10YR63 00 | 75YR56 00 C      |      |      |           |     | Y               | 0  | 0    | HR      | 10          | G          |             |     |
|        | 60-70  | ms      | 25 Y64 00 | 10YR58 00 C      |      |      |           |     | Y               | 0  | 0    | HR      | 10          | G          | Imp, flints |     |
| 2P     | 0-32   | ms1     | 10YR32 00 |                  |      |      |           |     | 2               | 0  | HR   | 8       |             |            |             |     |
|        | 32-50  | ms1     | 10YR43 00 |                  |      |      |           |     | 27              | 6  | HR   | 35      | M           |            |             |     |
|        | 50-60  | lms     | 10YR44 00 |                  |      |      |           |     | 32              | 0  | HR   | 48      | M           |            |             |     |
|        | 60-70  | ms      | 10YR46 00 |                  |      |      |           |     | 27              | 0  | HR   | 57      | M           |            |             |     |
|        | 70-83  | ms      | 10YR46 00 |                  |      |      |           |     | 0               | 0  | HR   | 51      | M           |            |             |     |
|        |        |         |           |                  |      |      |           |     |                 |    |      |         |             |            |             |     |
| 4      | 0-20   | msz1    | 10YR42 00 |                  |      |      |           |     | 12              | 0  | HR   | 18      |             |            |             |     |
|        | 20-30  | msz1    | 10YR42 00 |                  |      |      |           |     | 0               | 0  | HR   | 30      | M           |            | Imp, flints |     |
| 5      | 0-20   | msz1    | 10YR42 00 |                  |      |      |           |     | 6               | 0  | HR   | 12      |             |            |             |     |
|        | 20-30  | mc1     | 10YR42 00 |                  |      |      |           |     | 0               | 0  | HR   | 25      | M           |            | Imp, flints |     |
| 6      | 0-50   | lms     | 10YR32 42 |                  |      |      |           |     | 3               | 0  | HR   | 6       |             |            |             |     |
|        | 50-60  | lms     | 10YR54 56 |                  |      |      |           |     | 0               | 0  | HR   | 7       | G           |            |             |     |
|        | 60-70  | ms      | 10YR58 68 |                  |      |      | 00M00 00  |     | 0               | 0  | HR   | 7       | G           |            | Imp, flints |     |
| 7      | 0-38   | lms     | 10YR32 00 |                  |      |      |           |     | 6               | 2  | HR   | 10      |             |            |             |     |
|        | 38-50  | lms     | 10YR64 66 |                  |      |      | 00M00 00  |     | 0               | 0  | HR   | 12      | G           |            | Imp, flints |     |
| 8      | 0-35   | lms     | 10YR32 42 |                  |      |      |           |     | 3               | 0  | HR   | 7       |             |            |             |     |
|        | 35-60  | lms     | 10YR54 56 |                  |      |      |           |     | 0               | 0  | HR   | 8       | G           |            |             |     |
|        | 60-90  | ms      | 10YR56 74 |                  |      |      |           |     | 0               | 0  | HR   | 5       | G           |            |             |     |
|        | 90-120 | ms1     | 10YR58 64 |                  |      |      | 25Y 73 74 |     | 0               | 0  | HR   | 5       | M           |            |             |     |
| 9      | 0-30   | lms     | 10YR42 00 |                  |      |      |           |     | 1               | 0  | HR   | 5       |             |            |             |     |
|        | 30-45  | lms     | 10YR53 00 |                  |      |      |           |     | 0               | 0  | HR   | 10      | G           |            |             |     |
|        | 45-80  | ms      | 10YR56 00 |                  |      |      |           |     | 0               | 0  | HR   | 12      | G           |            | Imp, flints |     |
| 11     | 0-30   | ms1     | 10YR32 00 |                  |      |      |           |     | 3               | 0  | HR   | 7       |             |            |             |     |
|        | 30-55  | lms     | 10YR34 00 |                  |      |      |           |     | 0               | 0  | HR   | 10      | G           |            | Imp, flints |     |
| 12     | 0-30   | ms1     | 10YR32 00 |                  |      |      |           |     | 2               | 0  | HR   | 8       |             |            |             |     |
|        | 30-35  | ms1     | 10YR43 00 |                  |      |      |           |     | 0               | 0  | HR   | 20      | M           |            | Imp, flints |     |



| SAMPLE | DEPTH | TEXTURE | COLOUR    | ----MOTTLES---- |      |      | PED<br>COL. | ----STONES---- |    |    | STRUCT/<br>CONSIST | SUBS |     |     |     |     |             |
|--------|-------|---------|-----------|-----------------|------|------|-------------|----------------|----|----|--------------------|------|-----|-----|-----|-----|-------------|
|        |       |         |           | COL             | ABUN | CONT |             | GLEY           | >2 | >6 |                    | LITH | TOT | STR | POR | IMP | SPL         |
| 13     | 0-35  | ms1     | 10YR32 00 |                 |      |      |             | 4              | 0  | HR | 15                 |      |     |     |     |     |             |
|        | 35-40 | 1ms     | 10YR43 00 |                 |      |      |             | 0              | 0  | HR | 15                 | M    |     |     |     |     | Imp, flints |
| 14     | 0-20  | msz1    | 10YR42 00 |                 |      |      |             | 8              | 0  | HR | 15                 |      |     |     |     |     |             |
|        | 20-45 | msz1    | 10YR42 52 | 10YR58 00       | C    |      |             | Y              | 0  | HR | 25                 | M    |     |     |     |     | Imp, flints |
| 15     | 0-28  | 1ms     | 10YR42 00 |                 |      |      |             | 4              | 0  | HR | 7                  |      |     |     |     |     |             |
|        | 28-40 | ms      | 10YR44 46 |                 |      |      |             | 0              | 0  | HR | 15                 | M    |     |     |     |     | Imp, flints |
| 16     | 0-30  | 1ms     | 10YR32 00 |                 |      |      |             | 3              | 0  | HR | 5                  |      |     |     |     |     |             |
|        | 30-70 | ms      | 10YR36 00 |                 |      |      |             | 0              | 0  | HR | 10                 | M    |     |     |     |     | Imp, flints |
| 18     | 0-30  | ms1     | 10YR32 00 |                 |      |      |             | 3              | 1  | HR | 8                  |      |     |     |     |     |             |
|        | 30-40 | ms1     | 10YR33 00 |                 |      |      |             | 0              | 0  | HR | 15                 | M    |     |     |     |     | Imp, flints |
| 19     | 0-30  | ms1     | 10YR32 00 |                 |      |      |             | 4              | 0  | HR | 12                 |      |     |     |     |     |             |
|        | 30-45 | ms1     | 10YR44 00 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     |             |
|        | 45-55 | 1ms     | 10YR46 00 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     | Imp, flints |
| 20     | 0-30  | ms1     | 10YR32 00 |                 |      |      |             | 4              | 0  | HR | 8                  |      |     |     |     |     |             |
|        | 30-35 | ms1     | 10YR33 00 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     | Imp, flints |
| 21     | 0-20  | msz1    | 10YR42 00 |                 |      |      |             | 3              | 14 | HR | 20                 |      |     |     |     |     |             |
|        | 20-35 | msz1    | 10YR42 00 |                 |      |      |             | 0              | 0  | HR | 30                 | M    |     |     |     |     | Imp, flints |
| 22     | 0-30  | ms1     | 10YR42 00 |                 |      |      |             | 14             | 5  | HR | 20                 |      |     |     |     |     |             |
|        | 30-40 | ms1     | 10YR34 43 |                 |      |      |             | 0              | 0  | HR | 30                 | M    |     |     |     |     | Imp, flints |
| 23     | 0-30  | ms1     | 10YR42 00 |                 |      |      |             | 12             | 4  | HR | 19                 |      |     |     |     |     |             |
|        | 30-38 | 1ms     | 10YR34 44 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     | Imp, flints |
| 24     | 0-30  | ms1     | 10YR32 00 |                 |      |      |             | 8              | 2  | HR | 12                 |      |     |     |     |     | Imp, flints |
| 25     | 0-20  | msz1    | 10YR42 00 |                 |      |      |             | 11             | 2  | HR | 16                 |      |     |     |     |     |             |
|        | 20-35 | fs1     | 10YR42 00 |                 |      |      |             | 0              | 0  | HR | 25                 | M    |     |     |     |     | Imp, flints |
| 26     | 0-30  | 1ms     | 10YR32 00 |                 |      |      |             | 3              | 0  | HR | 6                  |      |     |     |     |     |             |
|        | 30-45 | 1ms     | 10YR33 00 |                 |      |      |             | 0              | 0  | HR | 10                 | M    |     |     |     |     |             |
|        | 45-55 | ms      | 10YR46 00 |                 |      |      |             | 0              | 0  | HR | 15                 | M    |     |     |     |     | Imp, flints |
| 27     | 0-30  | ms1     | 10YR32 00 |                 |      |      |             | 4              | 0  | HR | 10                 |      |     |     |     |     |             |
|        | 30-45 | 1ms     | 10YR43 00 |                 |      |      |             | 0              | 0  | HR | 15                 | M    |     |     |     |     |             |
|        | 45-50 | ms      | 10YR46 00 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     | Imp, flints |
| 28     | 0-35  | ms1     | 10YR32 00 |                 |      |      |             | 3              | 0  | HR | 10                 |      |     |     |     |     |             |
|        | 35-40 | 1ms     | 10YR56 00 |                 |      |      |             | 0              | 0  | HR | 20                 | M    |     |     |     |     | Imp, flints |