**A1**

# Winchester District Local Plan
# Land at Olivers Battery, Winchester.
# Agricultural Land Classification
# ALC Map and Report
# April 1995

# AGRICULTURAL LAND CLASSIFICATION REPORT

## WINCHESTER DISTRICT LOCAL PLAN.
## LAND AT OLIVERS BATTERY, WINCHESTER.

### 1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Winchester District of Hampshire. The work forms part of MAFF's statutory input to the preparation of the Winchester District Local Plan.

1.2 The site comprises approximately 59 hectares of land to the south of Olivers Battery on the edge of Winchester. An Agricultural Land Classification (ALC) survey was carried out in April 1995. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land surveyed. A total of 53 borings and three soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land, (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture.

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

1.4 At the time of the survey the agricultural land on the site comprised permanent grassland, grassland ley, set-aside and cereals. Areas of non-agricultural land comprise scrubland, and areas of urban marked on the map comprise private dwellings. Areas of woodland have also been marked on the map.

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

**Table 1 : Distribution of Grades and Subgrades**

| Grade | Area (ha) | % of Site | % of Agricultural Land |
|---|---|---|---|
| 3a | 16 | 27.0 | 28.3 |
| 3b | 40.6 | 68.6 | 71.7 |
| Non-agricultural | 0.5 | 0.8 | 100% (56.6 ha.) |
| Woodland | 0.8 | 1.4 | |
| Urban | 1.3 | 2.2 | |
| Total area of site | 59.2 | 100% | |

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

1.7 The agricultural land on the site has been classified as Subgrades 3a and 3b, with the main limitation being due to drought and to a lesser extent topsoil stoniness. The gently sloping land at the western end of the site comprises the better land, having a slightly deeper soil

profile over the underlying chalk. This area is moderately droughty due to rooting restrictions caused by the underlying chalk. Over the remainder of the site, weathered chalk is generally encountered immediately below the topsoil, resulting in a more severe droughtiness limitation. In addition the soils to the east of the central track are generally considerably more stony with many profiles being restricted to Subgrade 3b as a result of topsoil stone.

## 2. Climate

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

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

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

2.4 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations.

2.5 No local climatic factors such as exposure or frost risk are believed to affect the site.

**Table 2 : Climatic Interpolation**

| | |
|---|---|
| Grid Reference | SU 459 270 |
| Altitude (m) | 82 |
| Accumulated Temperature (degree days, Jan-June) | 1456 |
| Average Annual Rainfall (mm) | 843 |
| Field Capacity (days) | 183 |
| Moisture Deficit, Wheat (mm) | 101 |
| Moisture Deficit, Potatoes (mm) | 93 |
| Overall Climatic Grade | 1 |

## 3. Relief

3.1 The site is undulating, comprising two dry valley features running approximately north south and the associated interfluve. The altitude of the site ranges from approximately 70-110m AOD. Gradients on the site range from 1 to 6° and consequently nowhere on the site do altitude or relief pose any limitation to agricultural use.

## 4. Geology and Soils

4.1 The published geological map (BGS, 1978) shows the entire site to be underlain by Upper Chalk, comprising soft white chalk with many flint nodules.

4.2 The published Soil Survey map (SSEW, 1983) shows the soils on the site to comprise those of the Andover 1 association. These are described as 'shallow well drained calcareous silty soils over chalk on slopes and crests' (SSEW 1983).

4.3 Detailed field examination found the soils on the site to be silty and relatively shallow over chalk. Topsoils were found to be variably flinty.

## 5. Agricultural Land Classification

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

**Subgrade 3a**

5.2 The gently sloping land on the western side of the site has been mapped as Subgrade 3a, good quality agricultural land. Soil profiles in this area are found typically to comprise medium silty clay loam topsoils over a medium or heavy silty clay loam subsoil containing a high percentage of chalk stones with some flints. Below approximately 35-45 cm depth, fissured chalk is encountered, with rooting extending to approximately 65-70 cm. Pit 3 is representative of the soils in this mapping unit. Moisture balance calculations indicate that these soils will be slightly droughty resulting in crop stress during the drier periods of the year and therefore limiting the land to Subgrade 3a.

**Subgrade 3b**

5.3 The remaining agricultural land on the site has been classified as Subgrade 3b, moderate quality land, with droughtiness and topsoil stoniness being the main limitations. The central part of the site occurring on the interfluve between the two dry valley features comprises shallow soils over fissured chalk. A typical soil profile has a medium silty clay loam or silt loam topsoil with many small chalk fragments and a few flint stones, overlying slightly weathered fissured chalk below 25-30 cm depth. A soil profile pit (Pit1) in this area showed plant roots extending approximately 30 cm into the chalk strata. Soil moisture balance calculations indicate that the soils in this area are moderately droughty restricting the land quality to Subgrade 3b.

5.4 On the eastern part of the site, which comprises the side slopes of a dry valley, similar soils to those found on the interfluve were mapped but with a considerably greater stone content in the topsoil. In many profiles the topsoils contained over 15% flints > 2cm in size thereby limiting the land to Subgrade 3b. The presence of a large volume of hard stones in the topsoil will result in additional wear and tear to agricultural machinery and also may affect crop establishment and quality. The latter was particularly evident at the time of survey on the land growing winter barley.

## SOURCES OF REFERENCE

British Geological Survey (1975), Sheet No. 299, Winchester, 1:50,000 Series (drift edition).

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

Meteorological Office (1989), Climatological Data for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet 6, Soils of South East England, 1:250,000 and accompanying legend.

# APPENDIX I

## DESCRIPTION OF THE GRADES AND SUBGRADES

**Grade 1 : Excellent Quality Agricultural Land**

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

**Grade 2 : Very Good Quality Agricultural Land**

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

**Grade 3 : Good to Moderate Quality Land**

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

**Subgrade 3a : Good Quality Agricultural Land**

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

**Subgrade 3b : Moderate Quality Agricultural Land**

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

**Grade 4 : Poor Quality Agricultural Land**

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

**Grade 5 : Very Poor Quality Agricultural Land**

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

**Urban**

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

**Non-agricultural**

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

**Woodland**

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

**Agricultural Buildings**

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

**Open Water**

Includes lakes, ponds and rivers as map scale permits.

**Land Not Surveyed**

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

# APPENDIX II

## FIELD ASSESSMENT OF SOIL WETNESS CLASS

### SOIL WETNESS CLASSIFICATION

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

**Definition of Soil Wetness Classes**

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

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

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

# APPENDIX III

## SOIL PIT AND SOIL BORING DESCRIPTIONS

**Contents :**

# SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

**Boring Header Information**

1. **GRID REF** : national 100 km grid square and 8 figure grid reference.

2. **USE** : Land use at the time of survey. The following abbreviations are used.

| | | |
|---|---|---|
| **ARA** : Arable | **WHT** : Wheat | **BAR** : Barley |
| **CER** : Cereals | **OAT** : Oats | **MZE** : Maize |
| **OSR** : Oilseed rape | **BEN** : Field Beans | **BRA** : Brassicae |
| **POT** : Potatoes | **SBT** : Sugar Beet | **FCD** : Fodder Crops |
| **LIN** : Linseed | **FRT** : Soft and Top Fruit | **FLW** : Fallow |
| **PGR** : Permanent Pasture | **LEY** : Ley Grass | **RGR** : Rough Grazing |
| **SCR** : Scrub | **CFW** : Coniferous Woodland | **DCW** : Deciduous Wood |
| **HTH** : Heathland | **BOG** : Bog or Marsh | **FLW** : Fallow |
| **PLO** : Ploughed | **SAS** : Set aside | **OTH** : Other |
| **HRT** : Horticultural Crops | | |

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

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

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

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

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

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

| | | |
|---|---|---|
| **MREL** : Microrelief limitation | **FLOOD** : Flood risk | **EROSN** : Soil erosion risk |
| **EXP** : Exposure limitation | **FROST** : Frost prone | **DIST** : Disturbed land |
| **CHEM** : Chemical limitation | | |

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

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

**Soil Pits and Auger Borings**

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

| | | | | | |
|---|---|---|---|---|---|
| **S** : | Sand | **LS** : | Loamy Sand | **SL** : | Sandy Loam |
| **SZL** : | Sandy Silt Loam | **CL** : | Clay Loam | **ZCL** : | Silty Clay Loam |
| **ZL** : | Silt Loam | **SCL** : | Sandy Clay Loam | **C** : | Clay |
| **SC** : | Sandy Clay | **ZC** : | Silty Clay | **OL** : | Organic Loam |
| **P** : | Peat | **SP** : | Sandy Peat | **LP** : | Loamy Peat |
| **PL** : | Peaty Loam | **PS** : | Peaty Sand | **MZ** : | Marine Light Silts. |

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

**F** : Fine (more than 66% of the sand less than 0.2mm)
**M** : Medium (less than 66% fine sand and less than 33% coarse sand)
**C** : Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M** : Medium (<27% clay) **H** : Heavy (27-35% clay)

2. **MOTTLE COL** : Mottle colour using Munsell notation.

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

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

4. **MOTTLE CONT** : Mottle contrast

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

5. **PED. COL** : Ped face colour using Munsell notation.

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

7. **STONE LITH** : Stone Lithology - One of the following is used.

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

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

8. **STRUCT** : the degree of development, size and shape of soil peds are described using the following notation:

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

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

**L** : loose **VF** : very friable **FR** : friable **FM** : firm **VM** : very firm
**EM** : extremely firm **EH** : extremely hard

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

11. **POR** : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP** : If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropiate horizon.

13. **SPL** : Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC** : If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations
**APW** : available water capacity (in mm) adjusted for wheat
**APP** : available water capacity (in mm) adjusted for potatoes
**MBW** : moisture balance, wheat
**MBP** : moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : WINCH LP OLIVERS BATTERY  Pit Number :  1P

Grid Reference: SU45802680  Average Annual Rainfall :  840 mm
Accumulated Temperature : 1463 degree days
Field Capacity Level : 182 days
Land Use : Set-aside
Slope and Aspect : 03 degrees SW

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0- 22 | ZL | 75YR43 00 | 9 | 15 | HR | | | | | Y |
| 22- 35 | MZCL | 75YR54 00 | 0 | 70 | CH | | | | M | Y |
| 35- 45 | CH | 05Y 81 00 | 0 | 5 | HR | | | | M | Y |

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

Drought Grade : 3B  APW : 69 mm  MBW : -32 mm
APP : 69 mm  MBP : -25 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : WINCH LP OLIVERS BATTERY  Pit Number :  2P

Grid Reference: SU45602710  Average Annual Rainfall :  840 mm
Accumulated Temperature : 1463 degree days
Field Capacity Level : 182 days
Land Use : Cereals
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0- 25 | MZCL | 75YR44 00 | 6 | 12 | HR | | | | | Y |
| 25- 40 | MZCL | 75YR44 64 | 0 | 60 | CH | | | | M | Y |
| 40- 65 | CH | 05Y 81 00 | 0 | 2 | HR | | | | M | Y |

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

Drought Grade : 3B  APW : 78 mm  MBW : -23 mm
APP : 83 mm  MBP : -11 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : WINCH LP OLIVERS BATTERY  Pit Number : 3P

Grid Reference: SU45202670  Average Annual Rainfall : 840 mm
Accumulated Temperature : 1463 degree days
Field Capacity Level : 182 days
Land Use : Cereals
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0- 27 | MZCL | 75YR43 00 | 5 | 8 | HR | | | | | Y |
| 27- 45 | HZCL | 75YR63 00 | 0 | 50 | CH | | | | M | Y |
| 45- 75 | CH | 05Y 81 00 | 0 | 5 | HR | | | | M | Y |

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

Drought Grade : 3A  APW : 93 mm  MBW : -8 mm
APP : 96 mm  MBP : 2 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

| SAMPLE NO. | GRID REF | USE | ASPECT | GRDNT | GLEY | SPL | --WETNESS-- CLASS | GRADE | -WHEAT- AP | MB | -POTS- AP | MB | M.REL DRT | FLOOD | EROSN EXP | FROST DIST | CHEM LIMIT | ALC | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1P | SU45802680 | SAS | SW | 03 | | | 1 | 2 | 69 | -32 | 69 | -25 | 3B | | | | DR | 3B | |
| 2 | SU46202730 | PGR | E | 01 | | | 1 | 2 | 58 | -43 | 58 | -36 | 3B | | | | DR | 3B | |
| 2P | SU45602710 | CER | | | | | 1 | 2 | 78 | -23 | 83 | -11 | 3B | | | | DR | 3B | |
| 3 | SU45802720 | CER | SE | 02 | | | 1 | 2 | 67 | -34 | 67 | -27 | 3B | | | | DR | 3B | |
| 3P | SU45202670 | CER | | | | | 1 | 2 | 93 | -8 | 96 | 2 | 3A | | | | DR | 3A | |
| 4 | SU46102720 | PGR | SW | 03 | | | 1 | 2 | 69 | -32 | 69 | -25 | 3B | | | | DR | 3B | |
| 5 | SU46202720 | PGR | S | 03 | | | 1 | 2 | 96 | -5 | 99 | 5 | 3A | | | | DR | 3A | |
| 6 | SU45502710 | CER | NW | 02 | | | 1 | 2 | 69 | -32 | 69 | -25 | 3B | | | | DR | 3B | |
| 7 | SU45602710 | CER | S | 01 | | | 1 | 2 | 66 | -35 | 66 | -28 | 3B | | | | DR | 3B | SEE 2P |
| 8 | SU45702710 | CER | SE | 02 | | | 1 | 2 | 76 | -25 | 77 | -17 | 3B | | | | ST | 3B | |
| 9 | SU45802710 | CER | SE | 05 | | | 1 | 2 | 59 | -42 | 59 | -35 | 3B | | | | ST | 3B | |
| 10 | SU45902710 | PGR | SW | 03 | | | 1 | 2 | 63 | -38 | 63 | -31 | 3B | | | | ST | 3B | |
| 11 | SU46002710 | PGR | SW | 02 | | | 1 | 2 | 89 | -12 | 89 | -5 | 3A | | | | | 3B | DISTURBED |
| 12 | SU46102710 | PGR | SW | 03 | | | 1 | 2 | 56 | -45 | 56 | -38 | 3B | | | | DR | 3B | SEE 1P |
| 13 | SU46202710 | PGR | S | 02 | | | 1 | 2 | 77 | -24 | 77 | -17 | 3B | | | | DR | 3B | SEE 1P |
| 15 | SU45402700 | CER | | | | | 1 | 2 | 81 | -20 | 86 | -8 | 3B | | | | DR | 3B | SEE 2P |
| 16 | SU45502700 | CER | W | 01 | | | 1 | 2 | 72 | -29 | 72 | -22 | 3B | | | | DR | 3B | SEE 2P |
| 17 | SU45602700 | CER | SE | 01 | | | 1 | 2 | 106 | 5 | 111 | 17 | 2 | | | | DR | 3A | SEE 2P |
| 19 | SU45802700 | CER | SE | 06 | | | 1 | 2 | 67 | -34 | 67 | -27 | 3B | | | | ST | 3B | I30 SEE 1P |
| 20 | SU45902700 | PGR | SW | 04 | | | 1 | 2 | 75 | -26 | 75 | -19 | 3B | | | | DR | 3B | I45 SEE 1P |
| 22 | SU46102700 | PGR | SW | 03 | | | 1 | 2 | 57 | -44 | 57 | -37 | 3B | | | | DR | 3B | SEE 1P |
| 23 | SU45202690 | CER | | | | | 1 | 2 | 82 | -19 | 87 | -7 | 3A | | | | DR | 3A | |
| 24 | SU45302690 | CER | | | | | 1 | 2 | 88 | -13 | 94 | 0 | 3A | | | | DR | 3A | |
| 25 | SU45402690 | CER | | | | | 1 | 2 | 81 | -20 | 83 | -11 | 3B | | | | DR | 3A | |
| 26 | SU45502690 | CER | | | | | 1 | 2 | 77 | -24 | 79 | -15 | 3B | | | | DR | 3B | SEE 2P |
| 27 | SU45602690 | CER | SE | 02 | | | 1 | 2 | 61 | -40 | 61 | -33 | 3B | | | | DR | 3B | |
| 29 | SU45802690 | FLW | SE | 03 | | | 1 | 2 | 70 | -31 | 70 | -24 | 3B | | | | DR | 3B | SEE 1P |
| 30 | SU45902690 | FLW | SW | 03 | | | 1 | 2 | 62 | -39 | 62 | -32 | 3B | | | | ST | 3B | |
| 31 | SU46002690 | FLW | SW | 03 | | | 1 | 2 | 54 | -47 | 54 | -40 | 3B | | | | DR | 3B | SEE 1P |
| 32 | SU46102690 | LEY | SW | 03 | | | 1 | 2 | 83 | -18 | 85 | -9 | 3A | | | | DR | 3A | |
| 33 | SU45102680 | CER | | | | | 1 | 2 | 88 | -13 | 93 | -1 | 3A | | | | DR | 3A | |
| 34 | SU45202680 | CER | | | | | 1 | 2 | 89 | -12 | 95 | 1 | 3A | | | | DR | 3A | |
| 35 | SU45302680 | CER | | | | | 1 | 2 | 72 | -29 | 73 | -21 | 3B | | | | DR | 3B | |
| 36 | SU45402680 | CER | | | | | 1 | 2 | 86 | -15 | 89 | -5 | 3A | | | | DR | 3A | |
| 37 | SU45502680 | CER | | | | | 1 | 2 | 71 | -30 | 72 | -22 | 3B | | | | DR | 3B | SEE 2P |
| 38 | SU45602680 | CER | E | 05 | | | 1 | 2 | 67 | -34 | 67 | -27 | 3B | | | | DR | 3B | SEE 2P |
| 39 | SU45702680 | CER | E | 05 | | | 1 | 2 | 50 | -51 | 50 | -44 | 3B | | | | DR | 3B | SEE 1P |
| 40 | SU45802680 | FLW | SE | 03 | | | 1 | 2 | 57 | -44 | 57 | -37 | 3B | | | | ST | 3B | |
| 41 | SU45902680 | FLW | W | 04 | | | 1 | 2 | 71 | -30 | 71 | -23 | 3B | | | | ST | 3B | |
| 42 | SU46002680 | LEY | SW | 03 | | | 1 | 2 | 70 | -31 | 70 | -24 | 3B | | | | DR | 3B | |
| 43 | SU46102680 | LEY | SW | 04 | | | 1 | 2 | 59 | -42 | 59 | -35 | 3B | | | | ST | 3B | |
| 44 | SU45102670 | CER | | | | | 1 | 2 | 94 | -7 | 96 | 2 | 3A | | | | DR | 3A | |

| SAMPLE NO. | GRID REF | USE | ASPECT | GRDNT | GLEY | SPL | --WETNESS-- CLASS | GRADE | -WHEAT- AP | MB | -POTS- AP | MB | M.REL DRT | FLOOD | EROSN EXP | FROST DIST | CHEM LIMIT | ALC | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | SU45202670 | CER | | | | | 1 | 2 | 86 | -15 | 91 | -3 | 3A | | | | DR | 3A | |
| 46 | SU45302670 | CER | | | | | 1 | 2 | 89 | -12 | 95 | 1 | 3A | | | | DR | 3A | |
| 47 | SU45402670 | CER | | | | | 1 | 2 | 83 | -18 | 88 | -6 | 3A | | | | DR | 3A | |
| 48 | SU45502670 | CER | NE | 01 | | | 1 | 2 | 124 | 23 | 135 | 41 | 2 | | | | DR | 2 | |
| 49 | SU45602670 | CER | NE | 05 | | | 1 | 2 | 77 | -24 | 77 | -17 | 3B | | | | DR | 3B | |
| 50 | SU45702670 | FLW | E | 06 | | | 1 | 2 | 54 | -47 | 54 | -40 | 3B | | | | DR | 3B | SEE 1P |
| 51 | SU45802670 | FLW | E | 03 | | | 1 | 2 | 57 | -44 | 57 | -37 | 3B | | | | ST | 3B | |
| 52 | SU45902670 | CER | SW | 04 | | | 1 | 2 | 52 | -49 | 52 | -42 | 3B | | | | DR | 3B | SEE 1P |
| 53 | SU46002670 | CER | SW | 03 | | | 1 | 2 | 88 | -13 | 91 | -3 | 3A | | | | DR | 3A | |
| 54 | SU46102670 | CER | SW | 04 | | | 1 | 2 | 61 | -40 | 61 | -33 | 3B | | | | ST | 3B | |
| 55 | SU45002660 | CER | | | | | 1 | 2 | 94 | -7 | 97 | 3 | 3A | | | | DR | 3A | |
| 56 | SU45102660 | CER | | | | | 1 | 2 | 98 | -3 | 99 | 5 | 3A | | | | DR | 3A | |
| 57 | SU45202660 | CER | | | | | 1 | 2 | 102 | 1 | 105 | 11 | 3A | | | | DR | 3A | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | MOTTLES COL | MOTTLES ABUN | MOTTLES CONT | PED COL. | GLEY | STONES >2 | STONES >6 | STONES LITH | STONES TOT | STRUCT/ CONSIST | SUBS STR | SUBS POR | SUBS IMP | SUBS SPL | SUBS CALC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1P | 0-22 | zl | 75YR43 00 | | | | | | 9 | 0 | HR | 15 | | | | | | Y | |
| | 22-35 | mzcl | 75YR54 00 | | | | | | 0 | 0 | CH | 70 | | M | | | | Y | |
| | 35-45 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | ROOTS TO 45 |
| 2 | 0-25 | zl | 75YR43 00 | | | | | | 10 | 5 | HR | 17 | | | | | | Y | |
| | 25-45 | ch | 10YR62 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 2P | 0-25 | mzcl | 75YR44 00 | | | | | | 6 | 0 | HR | 12 | | | | | | Y | |
| | 25-40 | mzcl | 75YR44 64 | | | | | | 0 | 0 | CH | 60 | | M | | | | Y | ROOTS TO 65 |
| | 40-65 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 3 | 0-28 | zl | 75YR43 00 | | | | | | 8 | 5 | HR | 15 | | | | | | Y | |
| | 28-40 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 3P | 0-27 | mzcl | 75YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y | |
| | 27-45 | hzcl | 75YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y | |
| | 45-75 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | ROOTS TO 75 |
| 4 | 0-25 | zl | 75YR43 00 | | | | | | 8 | 0 | HR | 15 | | | | | | Y | |
| | 25-35 | mzcl | 10YR82 00 | | | | | | 0 | 0 | CH | 85 | | M | | | | Y | |
| | 35-45 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 5 | 0-35 | zl | 75YR43 00 | | | | | | 8 | 2 | HR | 12 | | | | | | Y | |
| | 35-50 | mzcl | 75YR53 00 | | | | | | 0 | 0 | CH | 70 | | M | | | | Y | |
| | 50-60 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 6 | 0-30 | mzcl | 10YR43 00 | | | | | | 8 | 0 | CH | 18 | | | | | | Y | |
| | 30-45 | mzcl | 10YR72 00 | | | | | | 0 | 0 | CH | 80 | | M | | | | Y | IMP 45 CHALK |
| 7 | 0-25 | mzcl | 75YR43 00 | | | | | | 6 | 6 | HR | 12 | | | | | | Y | |
| | 25-50 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 8 | 0-26 | zl | 75YR44 00 | | | | | | 9 | 7 | HR | 19 | | | | | | Y | |
| | 26-55 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 9 | 0-28 | zl | 75YR43 00 | | | | | | 11 | 5 | HR | 20 | | | | | | Y | |
| | 28-35 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 10 | 0-27 | zl | 75YR43 00 | | | | | | 12 | 5 | HR | 20 | | | | | | Y | |
| | 27-40 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 11 | 0-20 | zl | 10YR43 00 | | | | | | 10 | 0 | CH | 35 | | | | | | Y | |
| | 20-45 | zl | 75YR43 00 | | | | | | 0 | 0 | HR | 10 | | M | | | | Y | |
| | 45-47 | ch | 10YR81 00 | | | | | | 0 | 0 | | 0 | | M | | | | Y | |
| 12 | 0-25 | zl | 10YR43 00 | | | | | | 9 | 6 | HR | 20 | | | | | | Y | |
| | 25-35 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 0-30 | zl | 75YR43 00 | | | | | | 9 | 6 | HR | 17 | | | | | | Y | |
| | 30-50 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 15 | 0-28 | mzcl | 10YR43 00 | | | | | | 11 | 0 | HR | 13 | | | | | | Y | |
| | 28-35 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y | |
| | 35-65 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 16 | 0-25 | zl | 75YR43 00 | | | | | | 5 | 0 | CH | 15 | | | | | | Y | |
| | 25-45 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 17 | 0-45 | zl | 75YR43 00 | | | | | | 10 | 0 | HR | 12 | | | | | | Y | |
| | 45-65 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 19 | 0-30 | zl | 10YR43 00 | | | | | | 12 | 5 | HR | 20 | | | | | | Y | |
| | 30-40 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 20 | 0-32 | zl | 75YR43 00 | | | | | | 10 | 5 | HR | 18 | | | | | | Y | |
| | 32-45 | mzcl | 10YR72 00 | | | | | | 0 | 0 | CH | 90 | | M | | | | Y | |
| 22 | 0-24 | zl | 75YR43 00 | | | | | | 10 | 3 | HR | 15 | | | | | | Y | |
| | 24-34 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 23 | 0-25 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y | |
| | 25-35 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y | |
| | 35-65 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 24 | 0-26 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y | |
| | 26-40 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y | |
| | 40-70 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 25 | 0-25 | zl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y | |
| | 25-55 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 26 | 0-29 | mzcl | 10YR43 00 | | | | | | 8 | 0 | HR | 10 | | | | | | Y | |
| | 29-59 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y | |
| 27 | 0-25 | mzcl | 75YR43 00 | | | | | | 10 | 0 | CH | 18 | | | | | | Y | |
| | 25-40 | mzcl | 10YR72 00 | | | | | | 0 | 0 | CH | 80 | | M | | | | Y | IMP 40 CHALK |
| 29 | 0-30 | zl | 10YR43 00 | | | | | | 8 | 0 | CH | 23 | | | | | | Y | |
| | 30-40 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 30 | 0-25 | zl | 75YR43 00 | | | | | | 14 | 4 | HR | 19 | | | | | | Y | |
| | 25-40 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |
| 31 | 0-23 | zl | 75YR44 00 | | | | | | 10 | 5 | HR | 17 | | | | | | Y | |
| | 23-33 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 0-30 | zl | 75YR43 00 | | | | | | 8 | 5 | HR | 15 | | | | | | Y |
| | 30-40 | mzcl | 75YR64 00 | | | | | | 0 | 0 | CH | 80 | | M | | | | Y |
| | 40-55 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 33 | 0-25 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 25-38 | mzcl | 10YR44 00 | | | | | | 0 | 0 | HR | 10 | | M | | | | Y |
| | 38-68 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 34 | 0-30 | mzcl | 10YR43 00 | | | | | | 9 | 0 | HR | 12 | | | | | | Y |
| | 30-40 | mzcl | 10YR44 00 | | | | | | 0 | 0 | HR | 10 | | M | | | | Y |
| | 40-70 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 35 | 0-25 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 25-55 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 36 | 0-25 | zl | 10YR53 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 25-30 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 30-60 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 37 | 0-25 | mzcl | 10YR43 53 | | | | | | 8 | 0 | HR | 10 | | | | | | Y |
| | 25-55 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 38 | 0-25 | mzcl | 10YR43 00 | | | | | | 8 | 0 | CH | 18 | | | | | | Y |
| | 25-50 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 39 | 0-23 | mzcl | 10YR43 00 | | | | | | 7 | 0 | CH | 15 | | | | | | Y |
| | 23-33 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 40 | 0-25 | zl | 75YR43 00 | | | | | | 10 | 6 | HR | 18 | | | | | | Y |
| | 25-35 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 41 | 0-25 | mzcl | 75YR43 00 | | | | | | 8 | 8 | HR | 18 | | | | | | Y |
| | 25-45 | hzcl | 75YR46 00 | | | | | | 0 | 0 | HR | 15 | | M | | | | Y |
| | 45-48 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 42 | 0-30 | mzcl | 75YR44 00 | | | | | | 10 | 0 | HR | 12 | | | | | | Y |
| | 30-50 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 43 | 0-25 | mzcl | 75YR44 00 | | | | | | 15 | 2 | HR | 19 | | | | | | Y |
| | 25-45 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 44 | 0-25 | mzcl | 10YR43 00 | | | | | | 3 | 0 | HR | 6 | | | | | | Y |
| | 25-45 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 45-75 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 45 | 0-26 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 26-38 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 38-68 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | 0-29 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 29-40 | mzcl | 10YR53 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 40-70 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 47 | 0-27 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 27-35 | mzcl | 10YR43 54 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 35-65 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 48 | 0-30 | zl | 10YR43 00 | | | | | | 1 | 0 | CH | 4 | | | | | | Y |
| | 30-70 | mzcl | 10YR64 00 | | | | | | 0 | 0 | CH | 2 | | M | | | | Y |
| | 70-75 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 49 | 0-25 | zl | 10YR53 00 | | | | | | 5 | 0 | CH | 15 | | | | | | Y |
| | 25-50 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 50 | 0-28 | mzcl | 75YR44 00 | | | | | | 9 | 4 | HR | 17 | | | | | | Y |
| | 28-38 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 51 | 0-25 | zl | 75YR43 00 | | | | | | 12 | 5 | HR | 18 | | | | | | Y |
| | 25-35 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 52 | 0-25 | mzcl | 75YR43 00 | | | | | | 8 | 3 | HR | 12 | | | | | | Y |
| | 25-35 | ch | 10YR62 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 53 | 0-27 | zl | 75YR43 00 | | | | | | 8 | 4 | HR | 12 | | | | | | Y |
| | 27-50 | mzcl | 10YR73 00 | | | | | | 0 | 0 | CH | 80 | | M | | | | Y |
| | 50-60 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 54 | 0-23 | zl | 75YR43 00 | | | | | | 13 | 5 | HR | 19 | | | | | | Y |
| | 23-40 | ch | 10YR72 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | Y |
| 55 | 0-28 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 28-45 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 45-75 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 56 | 0-30 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 30-48 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 48-78 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 57 | 0-25 | zl | 10YR43 00 | | | | | | 5 | 0 | HR | 8 | | | | | | Y |
| | 25-45 | mzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 50 | | M | | | | Y |
| | 45-75 | ch | 05Y 81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |