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Hampshire Structure Plan Review
Land at Micheldever Station
Agricultural Land Classification
Reconnaissance Survey Report
June 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

HAMPSHIRE STRUCTURE PLAN REVIEW
LAND AT MICHELDEVER STATION
RECONNAISSANCE SURVEY

Introduction

1. ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of 'areas of search' in connection with MAFF's input to the Hampshire Structure Plan Review.

2. Land at Micheldever Station comprises approximately 461.5 hectares of land bounded by Black Wood to the east, the A303(T) to the north, and Warren Row to the west. The southern boundary largely comprises field boundaries. An Agricultural Land Classification (ALC) survey was carried out during May 1995. The survey was completed at a reconnaissance level of detail, on a 'free' survey basis, as it was undertaken primarily to update the 1:63,360 scale provisional ALC maps for the area of search. Consequently the results are designed for strategic planning purposes only. For site specific proposals, further, more detailed surveys may be required. A total of 97 borings and five soil inspection pits were assessed in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture.

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

4. At the time of the survey the agricultural land was almost entirely in arable use, principally cereals. Areas mapped as Urban includes residential dwellings, commercial premises and the road/railway corridor south of Micheldever Station. Recreational land is mapped as Non-Agricultural.

5. The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in Table 1 overleaf. The map has been drawn at a scale of 1:50,000. It is accurate at this scale, but any enlargement would be misleading.

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.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
3a	285.9	62.0	64.1
3b	160.3	34.7	35.9
Urban	13.4	2.9	100% (446.2 ha)
Non-Agricultural	1.9	0.4	
Total area of Site	461.5	100%	

7. The agricultural land in this 'area of search' ranges from good quality (Subgrade 3a), to moderate quality (Subgrade 3b). Principal limitations include soil droughtiness and to a lesser extent, topsoil stone content.

8 Soil droughtiness restricts land quality across much of the survey area. Where Subgrade 3a is mapped, soils are generally derived from chalky or clayey drift over chalk. At some valley locations, soils are derived from deeper flinty deposits over chalk. The main agricultural limitation of such land is a moderate risk of drought or occasionally topsoil stone content. Where soils are shallower over hard chalk or where very flinty soils occur, Subgrade 3b is appropriate due to an increased risk of drought and/or the high volume of flints in the topsoil. Solid chalk has the effect of restricting plant rooting depth, such that there is a reduction in the available water capacity of the soil, leading to a risk of drought in plants. High volumes of large stones (>2cm diameter) in the topsoil increase implement and tyre wear and may interfere with crop germination, quality and harvesting.

Factors Influencing ALC Grade

Climate

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

10. The key climatic variables used on this site are given in Table 2. These variables 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	SU513413	SU525427	SU525437
Altitude	m, AOD	90	120	155
Accumulated Temperature	day°C (Jan-June)	1439	1404	1364
Average Annual Rainfall	mm	805	832	860
Field Capacity Days	days	175	179	184
Moisture Deficit, Wheat	mm	100	95	90
Moisture Deficit, Potatoes	mm	91	85	78

11. 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.

12. 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.

13. The combination of rainfall and temperature at this 'area of search' mean that there is no overall climatic limitation in terms of ALC assessment and the land is climatically grade 1. However, there is a significant range in some of the key climatic variables at this site,

particularly field capacity days (FCD), and the crop adjusted moisture defecits (MDs). In view of this numerical range, particularly for moisture defecits which are crucial for obtaining a droughtiness grade, the 'area of search' has been further divided into six altitude zones. These zones cover the range of altitudes found in this area and for each, crop adjusted MD values have been derived. Based on its altitude, each auger sample and pit location has been ascribed to a zone. The appropriate MD data for that zone has then been used in conjunction with the profile available water capacity to calculate the crop adjusted moisture balances, and hence ALC drought grade. Although, there is also range in FCD values this is less significant as wetness is not an overriding limitation at this locality and it is only at the lowest elevations towards the extreme south west of the site that the important (in terms of ALC wetness assessment) 175 FCD isohyt falls.

Site

14. The 'area of search' forms a gently rolling tract of land with overall falls in a southerly direction. It is dissected by a number of dry valley features cutting back towards the north of the area. The highest land lies at around 155m AOD at the extreme north east corner of the survey area; this falls to just less than 90m AOD along the southern boundary. Gradients within the survey area are no greater than a maximum of 5°, and consequently there is no gradient limitation in terms of ALC assessment.

Geology and soils

15. The published geological information (BGS, 1975a, 1975b, 1975c, 1981) for the survey area indicates that the vast majority of the area is Upper Chalk. In the dry valley occupied by the lane to the east of the site, drift deposits of valley sands and gravels (lower level terrace deposits) are mapped.

16. The most detailed published soil information for the survey area (SSEW, 1983) indicates the occurrence of three soil associations. Most extensive is the Andover 1 association, described as 'Shallow well drained calcareous silty soils over chalk on slopes and crests. Deep calcareous and non calcareous fine silty soils in valley bottoms'(SSEW, 1983) and mainly associated with the lower and middle slopes on the site. The Carstens association is mapped where the higher land occurs, principally as a tongue extending southwards from the northern boundary. Such soils are described as 'Well drained fine silty over clayey, clayey and fine silty soils, often very flinty' (SSEW,1983). The least extensive soil type mapped is the Charity 2 association, described as 'Well drained flinty fine silty soils in valley bottoms. Calcareous fine silty soils over chalk or chalk rubble on valley sides sometimes shallow.' (SSEW, 1983) This is shown towards the south eastern corner of the site.

Agricultural Land Classification

17. 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.

18. 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 3a

19 Subgrade 3a (good quality) land occupies nearly two thirds of the survey area. The soils are derived from Chalk or superficial drift deposits of clayey or loamy material above the Chalk. Three main soil variants are recognised. Firstly are shallow profiles overlying chalk. These typically comprise slightly stony (up to 15%v/v flint and chalk stones >2cm), medium silty clay loams, usually with a similar but paler subsoil containing weathered chalk. Solid, but weathered, chalk is encountered from about 30 -40 cm of the surface, but some similar but deeper and less calcareous, profiles were noted. Such soils are typified by pits 1P, 3P, and 5P. Rooting into the chalk was to at least 60cm from the surface in areas where the chalk bedrock was noticeably harder than elsewhere (e.g. pit 3). Where the chalk was softer and more weathered a rooting depth of around 70cm was observed (e.g. pit 1). It should be noted that the shallower and more stony representatives of this soil type can only attain a 3a grading to the north of the survey area where the moisture defecits are lower.

20. The second soil variant tends to occur sporadically on middle slopes throughout the survey area. It is similar to that described above , but comprises deep highly calcareous subsoils which are flinty (25%flints v/v >2mm) in the upper part. Soil pit 2P typifies this soil variant. Lastly are deep soils having flinty subsoils, which are often non calcareous throughout. These typically comprise very slightly stony topsoils (5%v/v flints >2cm), of silt loam or medium silty clay loam texture overlying similar, but increasingly flinty, subsoils (around 20%v/v flints >2mm). This soil variant mainly occurs on the lower slopes of the dry valley feature immediately east of the Scats depot (GR SU533423) and along the eastern side of the lane running south from the depot.

21. All the soils mapped as subgrade 3a are permeable and freely draining (wetness class I; see Appendix II). The key limitation in terms of agricultural land quality is droughtiness resulting either from the occurrence of chalk bedrock at shallow depths in the soil profile or soils which have a high stone content (flints), particularly in the subsoil, or a combination of both factors. These situations cause restrictions in the water storage capacity of the soil such that the potential demand for water by crops may not be fully met in some years thereby depressing yields and reducing consistency from year to year. Where topsoil stone (flint) contents are comparatively high (10-15% v/v flints >2cm) this may also be a factor causing land to be in this subgrade, due to the adverse effect of stones on crop growth and implement and tyre wear, particularly where a proportion are larger than 6cm in size.

Subgrade 3b

22. Moderate quality (subgrade 3b) land is mapped over about one third of the survey area. It is commonly associated with the lower slopes of dry valley features, many of which contain superficial deposits of flinty material resting above the chalk bedrock. In addition it is also mapped on shallow soils over chalk, particularly to the south of the survey area where the moisture defecits are at their highest, or where the chalk bedrock was noticeably harder and rooting was more restricted.

23. In areas where very flinty topsoils are found, particularly in valley bottoms to the south of the survey area, not only is the water storage capacity of the soil significantly reduced, but the large volume of stones in the topsoil (typically in the range 16-20%v/v >2cm) will act as a

significant impediment to cultivation, harvesting and crop growth and also result in increased production costs due to implement and tyre wear.

24. The shallow soils over chalk mapped as subgrade 3b are essentially similar in type to those soils described in paragraph 19 above. However they tend to be more drought prone for a number of reasons. For example because moisture defecits are higher (to the south of the survey area), or the soils contain higher volumes of flint and chalk stones, or the chalk occurs high in the soil profile and in some instances is harder and therefore less rootable. The resulting loss of yield and reduction in its consistency from year to year is the key factor causing such land to included in this mapping unit.

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SOURCES OF REFERENCE

British Geological Survey (1975a) *Sheet No. 283, Andover. (1:50,000 scale).* BGS: London.

British Geological Survey (1975b) *Sheet No. 299, Winchester. (1:50,000 scale).* BGS: London.

British Geological Survey (1975c) *Sheet No. 300, Alresford. (1:50,000 scale).* BGS: London.

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

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

Soil Survey of England and Wales (1983) *Sheet 6; Soils of South East England (and accompanying legend)* SSEW: Harpenden.

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

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

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

Grade 4: Poor Quality Agricultural Land

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

Grade 5: Very Poor Quality Agricultural Land

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

APPENDIX II

SOIL 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[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.

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).

[1] The number of days is not necessarily a continuous period.
[2] '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.

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 sandston	**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 **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **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 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 : HANTS SP MICHELDEVER Pit Number : 1P

Grid Reference: SU52454252
Average Annual Rainfall : 833 mm
Accumulated Temperature : 1404 degree days
Field Capacity Level : 180 days
Land Use :
Slope and Aspect : 4 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR43 00	9	15	HR					Y
30- 70	CH	10YR81 00	0	2	HR				P	Y

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

Drought Grade : 3A
APW : 80 mm MBW : -17 mm
APP : 85 mm MBP : -2 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HANTS SP MICHELDEVER Pit Number : 2P

Grid Reference: SU51184185
Average Annual Rainfall : 833 mm
Accumulated Temperature : 1404 degree days
Field Capacity Level : 180 days
Land Use : Cereals
Slope and Aspect : 2 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	ZL	10YR42 43	6	25	HR					Y
27- 34	MZCL	10YR44 00	0	25	HR			FR	M	Y
34- 60	MZCL	10YR66 46	0	50	CH				M	Y

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

Drought Grade : 3A
APW : 82 mm MBW : -17 mm
APP : 86 mm MBP : -4 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HANTS SP MICHELDEVER Pit Number : 3P

Grid Reference: SU51354196
Average Annual Rainfall : 833 mm
Accumulated Temperature : 1404 degree days
Field Capacity Level : 180 days
Land Use : Cereals
Slope and Aspect : 2 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MZCL	10YR43 00	11	16	HR					Y
25- 32	MZCL	10YR44 00	0	16	HR		MDMSAB	FR	G	Y
32- 60	CH	10YR81 00	0	2	HR				P	Y

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

Drought Grade : 3A
APW : 76 mm MBW : -19 mm
APP : 79 mm MBP : -6 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HANTS SP MICHELDEVER Pit Number : 4P

Grid Reference: SU53004230
Average Annual Rainfall : 833 mm
Accumulated Temperature : 1404 degree days
Field Capacity Level : 180 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR42 43	5	12	HR					
28- 57	MZCL	10YR44 00	0	15	HR		MDCSAB	FR	M	
57- 75	MZCL	10YR44 00	0	20	HR		MDCSAB	FR	M	

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

Drought Grade : 3A
APW : 100mm MBW : 1 mm
APP : 107mm MBP : 17 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HANTS SP MICHELDEVER Pit Number : 5P

Grid Reference: SU52514150
Average Annual Rainfall : 833 mm
Accumulated Temperature : 1404 degree days
Field Capacity Level : 180 days
Land Use : Oilseed Rape
Slope and Aspect : 1 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MZCL	10YR43 00	12	17	HR					Y
27- 37	HZCL	10YR44 46	0	20	CH		MDMSAB	FR	G	Y
37- 65	CH	10YR81 00	0	2	HR				P	Y

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

Drought Grade : 3A
APW : 83 mm MBW : -16 mm
APP : 87 mm MBP : -3 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	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	SU52204341	OSR	S	1			1	2	74	-18	74	-7	3A				ST	3A	
1P	SU52454252	BNS	E	4			1	2	80	-17	85	-2	3A				DR	3A	SOFT CHALK
2	SU52424345	OSR	S	1			1	2	80	-11	85	6	3A				DR	3A	
2P	SU51184185	CER	SE	2			1	2	82	-17	86	-4	3A				DR	3A	
3	SU52604346	OSR	SE	5			1	2	88	4	94	13	3A				ST	3A	
3P	SU51354196	CER	SE	2			1	2	76	-19	79	-6	3A				DR	3A	
4	SU52664146	OSR	SE	5			1	2	72	-20	75	-6	3A				DR	3A	/3B HARDCH
4P	SU53004230	CER					1	2	100	1	107	17	3A				DR	3A	Q GRADE 2
5	SU52734345	OSR	SE	5			1	2	72	-22	77	-6	3B				ST	3B	ALSO 3B DR
5P	SU52514150	OSR	S	1			1	2	83	-16	87	-3	3A				DR	3A	
6	SU52824322	CER	W	5			1	2	75	-19	80	-3	3A				DR	3A	
7	SU52724323	CER	E	5			1	2	71	-23	76	-7	3B				DR	3B	
8	SU52624322	CER	E	3			1	2	78	-14	83	2	3A				ST	3A	
9	SU52384293	CER					1	2	96	2	101	18	3A				DR	3A	
10	SU52524289	CER	SE	1			1	2	73	-21	77	-6	3B				DR	3B	
11	SU52624287	CER	SE	4			1	2	82	-13	86	1	3A				DR	3A	
12	SU52754285	CER	SE	5			1	2	71	-24	76	-9	3B				ST	3B	DR
13	SU52624245	BNS	W	5			1	2	74	-21	79	-6	3B				DR	3B	
14	SU52544246	BNS	W	3			1	2	73	-24	77	-10	3B				DR	3B	
15	SU52464248	BNS	E	4			1	2	78	-19	84	-3	3A				DR	3A	AS 1P
16	SU51994282	CER	W	2			1	2	60	-35	60	-25	3B				ST	3A	SEE 4P
17	SU51954272	CER	W	2			1	2	92	-3	100	15	3A				ST	3A	DR
18	SU51904246	CER	W	2			1	2	88	-7	90	5	3A				ST	3A	
19	SU52244250	BNS					1	2	88	-7	94	9	3A				DR	3A	
20	SU51294290	CER					1	2	73	-22	76	-9	3B				DR	3B	HARD CHALK
21	SU51494318	CER	SE	2			1	2	73	-21	76	-7	3B				DR	3B	HARD CHALK
22	SU51654340	CER	SE	2			1	2	75	-19	79	-4	3A				DR	3A	
23	SU51664317	CER	SE	2			1	2	76	-23	80	-10	3B				DR	3B	
24	SU51344272	CER	SE	2			1	2	75	-22	77	-10	3B				DR	3B	HARD CHALK
25	SU51444258	CER					1	2	85	-12	92	5	3A				DR	3A	
26	SU51164242	CER					1	2	94	-3	98	11	3A				DR	3A	
27	SU51214222	CER	SE	2			1	2	76	-23	80	-10	3B				DR	3B	
28	SU51024192	CER	SE	2			1	2	89	-10	92	2	3A				DR	3A	
29	SU50944152	CER	SE	1			1	2	93	-6	95	5	3A				DR	3A	
30	SU51154132	CER	SE	2			1	1	78	-21	82	-8	3B				DR	3B	
31	SU51264186	CER	SE	2			1	1	51	-48	51	-39	3B				DR	3B	IFLINTS 30 Q3A
32	SU51314205	CER					1	1	36	-59	36	-49	4				ST	3B	IMP FLINTS 25
33	SU51404231	CER					1	2	36	-59	36	-49	4				ST	3B	IMP FLINTS 25
34	SU51334182	CER					1	1	74	-25	74	-16	3B				DR	3A	SEE 2P
35	SU51404194	CER	SW	3			1	2	84	-15	88	-2	3A				DR	3A	
36	SU51584212	CER	SW	1			1	3A	92	-5	98	11	3A				WD	3A	
37	SU51684236	CER	W	1			1	2	62	-35	62	-25	3B				DR	3A	Q AS 4P

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	DRT	M.REL FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
38	SU53154239	CER	SE	1			1	2	70	-25	70	-15	3B				ST	3B	IMP 45CM
39	SU53054257	CER	SE	2			1	2	113	18	108	23	2				ST	3A	BORD 2ST
40	SU53354215	BNS	NW	4			1	2	76	-21	81	6	3B				DR	3B	
41	SU53244226	BNS	NW	1			1	2	99	0	105	15	3A				WD	2	I60 SEE 4P
42	SU52984151	WHT					1	2	71	-28	71	-19	3B				DR	3A	SEE 4P
43	SU53114205	WHT					1	2	61	-38	61	-29	3B				DR	3A	SEE 4P
44	SU53224203	WHT	W	3			1	2	86	-11	92	5	3A				DR	3A	
45	SU53374197	WHT					1	2	75	-22	78	-9	3B				DR	3B	HARD CHALK
46	SU53414187	BNS	E	2			1	2	85	-12	90	3	3A				DR	3A	
47	SU53454168	BNS	SE	2			1	2	82	-17	87	-3	3A				DR	3A	
48	SU53474148	BNS					1	2	67	-33	67	-23	3B				DR	3A	SEE 4P
49	SU53544185	BNS	S	1			1	2	71	-28	71	-19	3B				DR	3A	SEE 4P
50	SU52984131	WHT					1	2	42	-57	42	-48	4				ST	3B	
51	SU53074140	WHT	S	1			1	2	101	2	113	23	3A				DR	2	SEE 4P
52	SU53154157	WHT	S	2			1	2	99	0	102	12	3A				DR	3A	
53	SU53244177	WHT	S	1			1	2	89	-8	92	5	3A				DR	3A	
54	SU52404320	CER	W	1			1	2	91	-1	97	-4	3A				DR	3A	
55	SU52274324	CER	W	3			1	2	58	-36	58	-25	3B				ST	3B	
56	SU52134325	CER	SW	3			1	2	82	-12	86	3	3A				ST	3A	DR
57	SU52024295	CER	S	3			1	2	76	-19	81	-4	3A				ST	3B	
58	SU52184291	CER	NW	4			1	2	77	-17	82	-1	3A				ST	3A	DR
59	SU51274168	CER	SE	1			1	1	64	-35	64	-26	3B				ST	3B	
60	SU51414160	CER	SW	2			1	1	85	-14	90	0	3A				DR	3A	
61	SU51334132	CER	W	3			1	1	85	-14	89	-1	3A				DR	3A	
62	SU51184138	CER					1	1	63	-36	63	-27	3B				ST	3B	
63	SU52914298	CER	SW	3			1	2	71	-23	76	-7	3B				DR	3B	
64	SU52874273	CER	SW	1			1	2	78	-16	83	0	3A				DR	3A	
65	SU52774242	CER	SW	1			1	2	91	-4	96	11	3A				ST	3A	DR
66	SU52964169		E	1			1	2	65	-34	65	-25	3B				ST	3B	IMP 40CM
67	SU53064207		E	1			1	2	76	-23	76	-14	3B				ST	3A	I50 SEE4P
68	SU52964209		E	3			1	2	85	-12	81	4	3A				ST	3A	DR
69	SU52804212	CER	E	2			1	2	76	-21	81	-6	3B				DR	3B	
70	SU52614213	CER	W	2			1	2	77	-20	81	-6	3A				DR	3A	BORDER 3B
71	SU52554177	CER	W	3			1	2	98	-1	105	15	3A				DR	3A	
72	SU52734173	CER					1	2	78	-21	83	-7	3B				DR	3B	
73	SU52824131	OSR					1	2	48	-51	48	-42	4				ST	3B	
74	SU52654135	OSR	SE	2			1	2	88	-11	93	3	3A				DR	3A	
75	SU52524145	OSR	S	1			1	2	83	-16	87	-3	3A				ST	3A	DR
76	SU52274117	CER	W	2			1	2	111	12	99	9	2				DR	2	ST/WK
77	SU52524116	CER	SE	2			1	2	78	-21	83	-7	3B				DR	3B	
78	SU51844156	CER					1	2	83	-16	88	-2	3A				DR	3A	
79	SU51914121	CER	E	2			1	2	102	3	108	18	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
80	SU52044117	CER					1	2	36	-63	36	-54	4				ST	3B	I25 HARD
81	SU52264141	CER	S	1			1	2	56	-43	56	-34	3B				ST	3B	
82	SU52124149	CER	SE	2			1	2	80	-19	84	-6	3A				DR	3A	
83	SU52404166	FAL	SE	1			1	2	73	-26	73	-17	3B				ST	3A	IMP 50CM
84	SU52254171	FAL	E	2			1	2	100	1	107	17	3A				DR	3A	
85	SU52064177	FAL	W	1			1	2	89	-10	95	5	3A				DR	3A	
86	SU52074206	CER					1	2	80	-17	83	-4	3A				DR	3A	IMP 55CM
87	SU52324198	BAR	NE	4			1	2	76	-21	81	-6	3B				DR	3B	
88	SU52484198	BAR	SW	2			1	2	36	-63	36	-54	4				ST	3B	IMP 25CM
89	SU52324223	CER	SW	2			1	2	82	-15	87	0	3A				DR	3A	
90	SU52074227	WHT	S	3			1	2	77	-20	82	-5	3A				DR	3A	BORDER 3B
91	SU51904210	WHT	S	3			1	2	74	-25	74	-16	3B				DR	3A	IMP 45CM
92	SU51814216	WHT	S	3			1	2	86	-11	93	6	3A				ST	3A	DR
93	SU51714176	WHT	S	3			1	2	72	-27	72	-18	3B				DR	3A	IMP-45CM Q3B
94	SU51644160	BAR	W	3			1	2	77	-22	80	-10	3B				DR	3B	HARD CHALK
95	SU51734140	BAR	W	1			1	2	77	-22	80	-10	3B				DR	3B	HARD CHALK
96	SU51734124	BAR	W	1			1	2	77	-22	80	-10	3B				DR	3B	HARD CHALK
97	SU51504129	BAR	W	1			1	2	76	-23	81	-9	3B				DR	3B	SOFTER CH

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-28	zl	10YR43 00						12	3	HR	20							
	28-45	mzcl	10YR43 00						0	0	HR	25		M					IMP FLINTS 45
1P	0-30	mzcl	10YR43 00						9	5	HR	15						Y	+ 10% CHALK STONES
	30-70	ch	10YR81 00						0	0	HR	2		P				Y	SOFT CHALK
2	0-25	mzcl	10YR33 00						9	4	HR	15						Y	
	25-35	hzcl	75YR44 00	00MN00	00	F			0	0	HR	15		M				Y	
	35-65	ch	10YR81 00						0	0	HR	2		P				Y	
2P	0-27	zl	10YR42 43						6	4	HR	25						Y	+ 2% CHALK STONES
	27-34	mzcl	10YR44 00						0	0	HR	25		FR M				Y	+ 2% CHALK STONES
	34-60	mzcl	10YR66 46						0	0	CH	50		M				Y	ROOTS 60cm +
3	0-30	mzcl	10YR43 00						12	5	HR	20						Y	
	30-45	mzcl	10YR44 00						0	0	HR	10		M				Y	
	45-70	ch	10YR81 00						0	0	HR	2		P				Y	
3P	0-25	mzcl	10YR43 00						11	4	HR	16						Y	+ 1% CHALK STONES
	25-32	mzcl	10YR44 00						0	0	HR	16	MDMSAB	FR G				Y	+ 10% CHALK STONES
	32-60	ch	10YR81 00						0	0	HR	2		P				Y	ROOTS 60cm HARD CH
4	0-28	mzcl	10YR43 00						6	3	HR	15						Y	+ 10% CHALK STONES
	28-60	ch	10YR81 00						0	0	HR	2		P				Y	HARD CHALK
4P	0-28	mzcl	10YR42 43						5	2	HR	12							
	28-57	mzcl	10YR44 00						0	0	HR	15	MDCSAB	FR M					
	57-75	mzcl	10YR44 00						0	0	HR	20	MDCSAB	FR M					
5	0-25	mzcl	10YR43 00						15	11	HR	20						Y	+ 5% CHALK STONES
	25-65	ch	10YR81 00						0	0	HR	2		P				Y	
5P	0-27	mzcl	10YR43 00						12	6	HR	17						Y	+ 1% CHALK STONES
	27-37	hzcl	10YR44 46						0	0	CH	20	MDMSAB	FR G				Y	+ 10% FLINTS
	37-65	ch	10YR81 00						0	0	HR	2		P				Y	
6	0-25	mzcl	10YR43 00						11	6	HR	18						Y	+ 7% CHALK STONES
	25-30	mzcl	10YR44 54						0	0	CH	50		G				Y	
	30-65	ch	10YR81 00						0	0	HR	2		P				Y	
7	0-25	mzcl	10YR43 00						9	6	HR	20						Y	+ 10% CHALK STONES
	25-65	ch	10YR81 00						0	0	HR	2		P				Y	
8	0-25	mzcl	10YR33 00						11	6	HR	20						Y	
	25-35	hzcl	10YR35 00						0	0	HR	15		M				Y	
	35-65	ch	10YR81 00						0	0	HR	2		P				Y	
9	0-28	mzcl	10YR33 00						9	4	HR	15						Y	
	28-58	mzcl	75YR44 00						0	0	HR	15		M				Y	
	58-75	ch	10YR81 00						0	0	HR	5		P				Y	

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	
10	0-28	mzcl	10YR43 00						14	6	HR	20					Y		+ 10% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
11	0-25	mzcl	10YR43 00						6	2	HR	15					Y		
	25-38	hzcl	75YR44 00						0	0	HR	15		M			Y		
	38-65	ch	10YR81 00						0	0	HR	2		P			Y		
12	0-25	mzcl	10YR43 00						16	6	HR	25					Y		
	25-65	ch	10YR81 00						0	0	HR	2		P			Y		
13	0-25	mzcl	10YR53 00						5	0	CH	25					Y		+ 5% FLINTS
	25-65	ch	10YR81 00						0	0	HR	2		P			Y		
14	0-28	mzcl	10YR43 00						8	6	HR	20					Y		+ 10% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
15	0-30	mzcl	10YR43 00						9	5	HR	20					Y		+ 5% CHALK STONES
	30-70	ch	10YR81 00						0	0	HR	2		P			Y		
16	0-25	mzcl	10YR33 00						12	8	HR	25					Y		
	25-45	hzcl	75YR44 00						0	0	HR	30		M			Y		+ 2% CHALK STONES
17	0-25	mzcl	10YR33 00						8	5	HR	15					Y		
	25-45	hzcl	75YR44 00						0	0	HR	15		M			Y		
	45-60	hzcl	10YR64 00						0	0	CH	50		M			Y		
	60-70	ch	10YR81 00						0	0	HR	2		P			Y		
18	0-25	mzcl	10YR43 00						9	6	HR	15					Y		
	25-45	mzcl	10YR44 00						0	0	CH	60		M			Y		+ 2% FLINTS
	45-75	ch	10YR81 00						0	0	HR	2		P			Y		
19	0-25	mzcl	10YR33 00						6	5	HR	12					Y		
	25-40	mzcl	75YR44 00						0	0	HR	12		M			Y		+ 2% CHALK STONES
	40-70	ch	10YR81 00						0	0	HR	2		P			Y		
20	0-28	mzcl	10YR43 00						8	4	HR	15					Y		+ 5% CHALK STONES
	28-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
21	0-32	mzcl	10YR43 00						8	4	HR	20					Y		+ 2% CHALK STONES
	32-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
22	0-28	zl	10YR43 00						6	2	HR	20					Y		+ 2% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
23	0-27	mzcl	10YR43 00						6	2	HR	20					Y		+ 2% CHALK STONES
	27-65	ch	10YR81 00						0	0	HR	2		P			Y		
24	0-25	zl	10YR43 00						13	3	HR	25					Y		+ 2% CHALK STONES
	25-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK

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	
25	0-25	mzcl	10YR43 00						8	2	HR	15					Y		+ 2% CHALK STONES
	25-40	mzcl	10YR54 00						0	0	CH	50		G			Y		+ 5% FLINTS
	40-70	ch	10YR81 00						0	0	HR	2		P			Y		
26	0-25	mzcl	10YR43 00						6	1	HR	15					Y		+ 1% CHALK STONES
	25-40	mzcl	10YR44 00						0	0	HR	15		M			Y		
	40-55	mzcl	10YR64 00						0	0	CH	50		M			Y		
	55-75	ch	10YR81 00						0	0	HR	2		P			Y		
27	0-25	mzcl	10YR43 00						6	1	HR	15					Y		+ 2% CHALK STONES
	25-65	ch	10YR81 00						0	0	HR	2		P			Y		
28	0-25	mzcl	10YR43 00						6	1	HR	10					Y		+ 10% CHALK STONES
	25-40	mzcl	10YR44 00						0	0	HR	10		M			Y		+ 10% CHALK STONES
	40-75	ch	10YR81 00						0	0	HR	2		P			Y		
29	0-25	mzcl	10YR43 00						6	1	HR	10					Y		+ 15% CHALK STONES
	25-45	mzcl	10YR44 00						0	0	CH	10		M			Y		+ 5% FLINTS
	45-75	ch	10YR81 00						0	0	HR	2		P			Y		
30	0-28	mzcl	10YR43 00						4	0	HR	10					Y		+ 10% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
31	0-30	mzcl	10YR43 00						2	0	HR	6					Y		+ 1% CHALK STONES
32	0-25	mzcl	10YR43 00						18	9	HR	25					Y		+ 1% CHALK STONES
33	0-25	mzcl	10YR43 00						17	9	HR	25					Y		+ 1% CHALK STONES
34	0-25	mzcl	10YR43 42						4	0	HR	15					Y		+ 2% CHALK STONES
	25-35	mzcl	10YR44 00						0	0	HR	15		M			Y		+ 2% CHALK STONES
	35-50	mzcl	10YR44 54						0	0	CH	50		M			Y		+ 5% FLINTS
35	0-25	mzcl	10YR43 00						4	0	HR	15					Y		+ 2% CHALK STONES
	25-40	mzcl	10YR44 00						0	0	CH	50		G			Y		
	40-65	ch	10YR81 00						0	0	HR	2		P			Y		
36	0-28	hzcl	10YR44 00						3	0	HR	10					Y		+ 2% CHALK STONES
	28-48	hzcl	10YR44 54						0	0	CH	35		M			Y		
	48-70	ch	10YR81 00						0	0	HR	2		P			Y		
37	0-25	mzcl	10YR43 00						8	2	HR	15					Y		+ 1% CHALK STONES
	25-40	mzcl	10YR44 46						0	0	HR	15		M			Y		
38	0-25	zl	10YR43 42						14	11	HR	25					Y		
	25-45	mzcl	10YR66 00						0	0	CH	35		M			Y		+ 10% FLINTS
39	0-27	mzcl	10YR43 00						7	5	HR	15					Y		+ 2% CHALK STONES
	27-70	mzcl	10YR66 00						0	0	CH	30		M			Y		
	70-90	mzcl	10YR64 00						0	0	CH	50		M			Y		

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	
40	0-22	mzcl	10YR43 00						12	6	HR	20					Y		+ 5% CHALK STONES
	22-32	mzcl	10YR43 00						0	0	CH	40		G			Y		+ 5% FLINTS
	32-65	ch	10YR81 00						0	0	HR	2		P			Y		
41	0-25	zl	10YR43 00						4	0	HR	10					Y		
	25-47	mzcl	75YR46 00						0	0	HR	10		M			Y		
	47-60	mzcl	10YR66 00						0	0	CH	35		M			Y		
42	0-30	mzcl	10YR43 53						5	2	HR	12							
	30-45	mzcl	10YR54 00						0	0	HR	25		M					
43	0-25	mzcl	10YQ43 53						3	1	HR	10							
	25-38	mzcl	10YR54 00						0	0	HR	20		M					
44	0-25	mzcl	10YR43 00						5	1	HR	10					Y		
	25-40	mzcl	10YR54 00						0	0	HR	15		M			Y		+ 20% CHALK STONES
	40-70	ch	10YR81 00						0	0	HR	2		P			Y		
45	0-28	mzcl	10YR43 00						5	2	HR	10					Y		+ 5% CHALK STONES
	28-38	ch	10YR81 64						0	0	HR	2		P			Y		
	38-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
46	0-28	mzcl	10YR43 44						4	1	HR	8					Y		+ 5% CHALK STONES
	28-35	mzcl	10YR64 00						0	0	HR	10		G			Y		+ 10% CHALK STONES
	35-65	ch	10YR81 00						0	0	HR	2		P			Y		
47	0-28	mzcl	10YR43 44						5	1	HR	10					Y		+ 15% CHALK STONES
	28-40	mzcl	10YR54 56						0	0	HR	10		M			Y		+ 10% CHALK STONES
	40-65	ch	10YR81 00						0	0	HR	2		P			Y		
48	0-30	mzcl	10YR43 44						5	1	HR	15							
	30-45	mzcl	10YR44 54						0	0	HR	30		M					
49	0-30	mzcl	10YR44 00						4	1	HR	10							
	30-42	mzcl	75YR54 00						0	0	HR	20		M					
	42-45	mzcl	75YR54 00						0	0	HR	30		M					
50	0-25	mzcl	10YR43 00						17	5	HR	25							
	25-30	mzcl	10YR54 00						0	0	HR	30		M					
51	0-30	mzcl	10YR43 00						4	1	HR	8					Y		
	30-65	hzcl	10YR54 44						0	0	HR	10		M			Y		
	65-70	mzcl	10YR74 81						0	0	CH	50		M			Y		
52	0-28	mzcl	10YR43 00						3	0	HR	6					Y		
	28-35	mzcl	10YR54 64						0	0	CH	25		G			Y		+ 5% FLINTS
	35-55	mzcl	10YR74 81						0	0	CH	50		M			Y		+ 5% FLINTS
	55-75	ch	10YR81 00						0	0	HR	2		P			Y		

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	
53	0-27	mzcl	10YR43 00						4	1	HR	8						Y	
	27-35	mzcl	10YR54 81						0	0	CH	35		M				Y	+ 5% FLINTS
	35-48	mzcl	10YR74 81						0	0	CH	50		M				Y	
	48-75	ch	10YR81 64						0	0	HR	2		P				Y	
54	0-25	mzcl	10YR42 00						7	3	HR	15							
	25-50	mzcl	10YR44 00						0	0	HR	15		M				Y	
	50-70	ch	10YR81 00						0	0	HR	2		P				Y	
55	0-28	mzcl	10YR42 43						16	11	HR	22							
	28-40	mzcl	10YR54 00						0	0	HR	25		M					
56	0-25	mzcl	10YR42 00						12	8	HR	20							
	25-40	hzcl	10YR44 00						0	0	HR	10		M					
	40-65	ch	10YR81 00						0	0	HR	2		P					
57	0-25	mzcl	10YR43 00						16	8	HR	22							
	25-40	mzcl	10YR64 00						0	0	HR	15		G				Y	+ 15% CHALK STONES
	40-65	ch	10YR81 00						0	0	HR	2		P				Y	
58	0-25	mzcl	10YR42 43						12	8	HR	25						Y	+ 10% CHALK STONES
	25-30	mzcl	10YR43 00						0	0	CH	30		G				Y	
	30-65	ch	10YR81 00						0	0	HR	2		P				Y	
59	0-25	zl	10YR43 00						17	7	HR	23							
	25-40	mzcl	10YR44 00						0	0	HR	25		M					
60	0-23	mzcl	10YR43 00						7	3	HR	12							
	23-35	hzcl	10YR44 00						0	0	HR	15		G				Y	+ 2% CHALK STONES
	35-65	ch	10YR81 00						0	0	HR	2		P				Y	
61	0-22	mzcl	10YR42 00						8	3	HR	13						Y	+ 2% CHALK STONES
	22-35	mzcl	10YR46 00						0	0	HR	10		G				Y	+ 10% CHALK STONES
	35-65	ch	10YR81 00						0	0	HR	2		P				Y	
62	0-25	zl	10YR42 43						20	10	HR	25							
	25-40	mzcl	10YR44 00						0	0	HR	25		M					
63	0-25	mzcl	10YR43 00						8	4	HR	15						Y	+ 20% CHALK STONES
	25-65	ch	10YR81 00						0	0	HR	2		P				Y	
64	0-25	mzcl	10YR43 00						12	3	HR	20						Y	
	25-34	mzcl	10YR44 00						0	0	CH	50		G				Y	
	34-65	ch	10YR81 00						0	0	HR	2		P				Y	
65	0-25	zl	10YR43 00						8	6	HR	12							
	25-37	mzcl	10YR44 00						0	0	HR	15		M					
	37-65	ch	10YR81 00						0	0	HR	2		P				Y	

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	
66	0-25	zl	10YR43 00						25	10	HR	30							
	25-40	zl	10YR44 00						0	0	HR	30		M					
67	0-25	mzcl	10YR43 00						12	4	HR	17							
	25-50	mzcl	10YR44 00						0	0	HR	15		M					
68	0-28	mzcl	10YR43 00						12	4	HR	18					Y		
	28-50	mzcl	10YR42 00						0	0	HR	20		M			Y		+ 20% CHALK STONES
	50-70	ch	10YR81 00						0	0	HR	2		P			Y		
69	0-28	mzcl	10YR43 00						12	6	HR	17					Y		
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
70	0-25	mzcl	10YR43 00						8	2	HR	13					Y		+ 10% CHALK STONES
	25-30	mzcl	10YR44 00						0	0	CH	35		G			Y		+ 13% FLINTS
	30-65	ch	10YR81 00						0	0	HR	2		P			Y		
71	0-28	mzcl	10YR43 00						4	1	CH	15					Y		+ 5% FLINTS
	28-55	mzcl	10YR44 00						0	0	CH	35		M			Y		+ 5% FLINTS
	55-70	ch	10YR81 00						0	0	HR	2		P			Y		
72	0-30	mzcl	10YR43 00						10	2	HR	15					Y		+ 1% CHALK STONES
	30-65	ch	10YR81 00						0	0	HR	2		P			Y		
73	0-25	mzcl	10YR43 00						25	10	HR	35							
	25-40	mzcl	10YR44 00						0	0	HR	40		M					
74	0-28	mzcl	10YR43 00						8	1	HR	12					Y		+ 1% CHALK STONES
	28-40	mzcl	10YR54 64						0	0	CH	40		G			Y		
	40-70	ch	10YR81 00						0	0	HR	2		P			Y		+ 12% FLINTS
75	0-27	mzcl	10YR43 00						12	6	HR	17					Y		
	27-37	hzcl	10YR44 46						0	0	HR	10		G			Y		+ 1% CHALK STONES
	37-65	ch	10YR81 00						0	0	HR	2		P			Y		+ 20% CHALK STONES
76	0-28	mzcl	10YR43 00						6	3	HR	12					Y		+ 1% CHALK STONES
	28-40	mzcl	10YR44 46						0	0	CH	20		G			Y		+ 10% FLINTS
	40-70	mzcl	10YR54 64						0	0	CH	50		M			Y		+ 10% FLINTS
	70-100	ch	10YR81 00						0	0	HR	2		P			Y		
77	0-25	mzcl	10YR43 00						11	3	HR	18					Y		+ 2% CHALK STONES
	25-30	mzcl	10YR44 00						0	0	CH	20		G			Y		
	30-65	ch	10YR81 00						0	0	HR	2		P			Y		
78	0-27	mzcl	10YR42 43						5	1	HR	8					Y		+ 2% CHALK STONES
	27-37	mzcl	10YR44 00						0	0	CH	50		G			Y		+ 8% FLINTS
	37-65	ch	10YR81 00						0	0	HR	2		P			Y		

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	
79	0-23	mzcl	10YR42 00						5	1	HR	6							
	23-55	hzcl	10YR44 00						0	0	HR	10		M					
	55-70	hzcl	10YR64 00						0	0	CH	50		M			Y		+ 15% FLINTS
	70-75	ch	10YR81 00						0	0	HR	2		P			Y		
80	0-25	mzcl	10YR42 43						18	4	HR	25							
81	0-23	mzcl	10YR42 43						18	9	HR	25							
	23-40	mzcl	10YR44 00						0	0	HR	25		M					
82	0-26	mzcl	10YR43 00						12	3	HR	17					Y		+ 3% CHALK STONES
	26-40	mzcl	10YR44 46						0	0	CH	40		G			Y		+ 17% FLINTS
	40-65	ch	10YR81 00						0	0	HR	2		P			Y		
83	0-25	mzcl	10YR42 43						12	6	HR	20							
	25-50	mzcl	10YR44 00						0	0	HR	20		M					
84	0-25	mzcl	10YR43 00						8	4	HR	12							
	25-50	hzcl	10YR44 00						0	0	HR	15		M					
	50-70	mzcl	10YR54 64						0	0	CH	40		M			Y		
	70-75	ch	10YR81 00						0	0	HR	2		P			Y		
85	0-28	mzcl	10YR42 43						5	1	HR	8					Y		
	28-45	mzcl	10YR44 64						0	0	CH	50		G			Y		+ 15% FLINTS
	45-70	ch	10YR81 00						0	0	HR	2		P			Y		
86	0-23	mzcl	10YR43 00						8	2	HR	12							
	23-55	hzcl	10YR44 00						0	0	HR	20		M					
87	0-28	mzcl	10YR43 00						10	1	HR	13					Y		+ 7% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
88	0-25	mzcl	10YR42 00						20	8	HR	25							
89	0-27	mzcl	10YR42 00						8	4	HR	12							
	27-40	hzcl	10YR44 64						0	0	CH	50		G			Y		+ 12% FLINTS
	40-65	ch	10YR81 00						0	0	HR	2		P			Y		
90	0-28	mzcl	10YR42 43						8	2	HR	15					Y		+ 1% CHALK STONES
	28-65	ch	10YR81 00						0	0	HR	2		P			Y		
91	0-25	mzcl	10YR42 43						5	0	HR	7							
	25-45	mzcl	10YR44 00						0	0	HR	15		M					
92	0-27	mzcl	10YR42 00						12	6	HR	15							
	27-40	mzcl	10YR44 00						0	0	HR	15		M					
	40-65	ch	10YR81 00						0	0	HR	2		P			Y		

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	
93	0-27	mzcl	10YR42 43						5	0	HR	5							
	27-45	mzcl	10YR44 00						0	0	HR	20		M					
94	0-25	mzcl	10YR43 00						4	0	HR	5					Y		+ 1% CHALK STONES
	25-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
95	0-25	mzcl	10YR43 00						10	2	HR	12					Y		+ 1% CHALK STONES
	25-32	mzcl	10YR44 00						0	0	CH	50		G			Y		
	32-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
96	0-25	mzcl	10YR43 00						10	2	HR	12					Y		+ 1% CHALK STONES
	25-32	mzcl	10YR44 00						0	0	CH	50		G			Y		
	32-60	ch	10YR81 00						0	0	HR	2		P			Y		HARD CHALK
97	0-25	mzcl	10YR42 43						8	2	HR	12					Y		+ 1% CHALK STONES
	25-65	ch	10YR81 00						0	0	HR	2		P			Y		