

A1
Basingstoke and Deane Borough
Local Plan
Plan 2: South of the M3 (east).
Agricultural Land Classification
Reconnaissance survey
ALC Map and Report
September 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

BASINGSTOKE AND DEANE BOROUGH LOCAL PLAN PLAN 2: SOUTH OF M3 (EAST) RECONNAISSANCE SURVEY

1. Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on agricultural land quality for a number of sites in the Basingstoke District of Hampshire. The work forms part of MAFF's statutory input to the preparation of the Basingstoke and Deane Borough Local Plan.
- 1.2 Plan 2 comprises approximately 240 hectares of land south of the M3 motorway, to the south-east of Basingstoke in Hampshire. An Agricultural Land Classification (ALC), survey was carried out during September 1994. The survey was undertaken at a reconnaissance level of approximately one boring per three hectares of agricultural land surveyed. A total of 68 borings and four 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 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 recently drilled cereals, stubble, permanent grassland and grassland ley. Areas marked as non-agricultural include scrubland, areas of woodland on the site have also been marked. Areas marked as urban include tarmac and hardcore tracks and a private dwelling in the south-eastern corner of the site.
- 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 1:15,000. It is accurate at this scale, but any enlargement would be misleading. The reconnaissance nature of the survey means that grade boundaries are shown as dotted lines, to emphasis the approximate nature of their location.

Table 1: Distribution of Grades and Subgrades.

Grade	Area(ha)	% of Site	% of Agricultural Land
2	26.4	11.0	13.4
3a	170.7	71.1	<u>86.6</u>
Non-Agricultural	0.1	<0.1	100% (197.1 ha.)
Woodland	39.3	16.4	
Urban	<u>3.5</u>	<u>1.5</u>	
Total area of site	240.0	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 majority of the agricultural land on the site has been classified as Subgrade 3a, good quality land, with soil droughtiness as the main limitation. Soil profiles across much of the site tend to be relatively shallow over chalk. The nature of these soils, particularly the comparatively restricted rooting depths into the chalk, means that there is some restriction on profile available water. This will in turn effect crop yields such that a classification of Subgrade 3a is appropriate. Where soils tend to be deeper over the solid chalk as in the south-east of the site, droughtiness is less of a restriction allowing these profiles to be classified as better quality Grade 2 land. Similarly, in dry valley features soil profiles tend to be deeper with variably flinty subsoils. The deeper nature of the subsoils and the general absence of solid chalk means that these profiles show sufficient reserves of available water to be classified as Grade 2. It should be noted that some areas, primarily in the dry valley immediately south of the junction on the M3, have been mapped as Subgrade 3a due to a topsoil stone limitation, arising from the presence of 11-14% total stones greater than 2 cm in size within the topsoils.

2. Climate

- 2.1 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.
- 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, 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 and soil factors do interact to influence soil wetness and droughtiness limitations. The field capacity days for this site are relatively high in a regional context and therefore, the likelihood of soil wetness/workability problems will be increased, and droughtiness limitations decreased.
- 2.5 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 :Climatic Interpolations

Grid Reference	SU 668514	SU 663510	SU 658509
Altitude, (m, AOD)	85	100	110
Accumulated Temperature °days, Jan.-June)	1437	1420	1409
Average Annual Rainfall (mm)	767	783	792
Field Capacity Days	166	170	172
Moisture deficit, wheat (mm)	103	100	98
Moisture deficit, potatoes (mm)	94	90	88
Overall Climatic Grade	1	1	1

3. Relief

- 3.1 The site lies at an altitude of approximately 85-110 metres AOD. The lowest points on the site occur in the base of gently sloping dry valley features on the eastern edge and towards the west of the site. Land rises from these points, the southern central area of the site being the highest altitude. Gradients are generally less than 5°, although occasionally slopes along the eastern boundary approach 6-7°. However, nowhere on the site do gradient or relief pose any limitation in terms of agricultural land quality.

4. Geology and Soils

- 4.1 The published geological information (BGS, 1980), shows the majority of the site to be underlain by Upper Chalk. A very small area of Low Level Terrace Deposits (formerly called Valley Gravel) is mapped in the far south-eastern corner of the site.
- 4.2 The published soils information (SSEW 1983), shows the site to comprise two soil types. The majority of the site is mapped as soils of the Andover 1 association reflecting the chalk geology. These are described as 'shallow well drained calcareous silty soils over chalk, deep in valley bottoms'. Towards the east and west of the site areas have been mapped as comprising soils of the Carstens association. These are described as 'well drained fine silty over clayey and fine silty soils, often very flinty'.
- 4.3 Detailed field examination found the soils over much of the site to be comparatively shallow over chalk at various depths. In the dry valley bottoms soils tend to be non-calcareous, flinty at depth with chalk occasionally encountered deep in the profile.

5. Agricultural Land Classification

- 5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

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

Grade 2

- 5.3 Land of this quality is found in three areas of the site. Two of these comprise dry valley features towards the east and centre of the site, the remainder being on higher ground towards the south of the site. All of the soils within the mapping unit are deeper over chalk than elsewhere, yet the composition of the soils vary.
- 5.4 In the dry valleys, soil profiles tend to be non-calcareous with silty subsoils. Topsoils typically comprise a slightly stony (5-10% total flints) medium silty clay loam, medium clay loam or silt loam. These in turn rest upon subsoils commonly of a similar texture which can become heavier with depth. Stone contents within the subsoils do vary, although slightly stony (5-15% total flints) upper subsoils and moderately stony (20-35% total flints) lower subsoils are common. Dry soil conditions hampered soil observations, at both augerings and a soil inspection pit (no. 2). These frequently proved impenetrable at depths of between 50-80cm due to moderate stone contents. Although within a different mapping unit soil inspection pit no. 4 shows comparable subsoil conditions to the Grade 2 land, although the overriding limitation at this latter location being topsoil stoniness.
- 5.5 The area of Grade 2 land on the higher ground towards the south of the site is characterised by relatively deep soils over chalk which occurs at depths of between 50-60 cm. Soil inspection pit no. 3 is typical of the soil profiles within this group, and gave an opportunity to investigate the depth of rooting into the chalk. The soil profile was found to comprise a slightly stony (5% total flints) medium silty clay loam topsoil extending to 28cm. A slightly stony (5% total flints) clay upper subsoil containing a few manganese concretions rests upon chalk which was encountered at variable depths from 50-60cm. Rooting into the chalk was observed to a depth of 80cm, this has been used as the cut-off point for calculating profile available water for the purpose of assigning a droughtiness grade to these soils.
- 5.6 In all of the Grade 2 mapping units, profiles were found to be well drained and suitably assigned to *Wetness Class I*. However, profiles were found to suffer from a slight droughtiness limitation. This arises from the combination of soil textures, structures, stone contents, rooting depths into the chalk. In combination with the local climatic regime this gives rise to a moisture balance indicative of a slight drought risk. This will in turn have an affect upon the level and consistency of crop yields such that a classification of Grade 2 is appropriate.

Subgrade 3a

- 5.7 The majority of the agricultural land on the site has been classified as Subgrade 3a, good quality land, with soil droughtiness as the main limitation. Soils within this mapping unit tend to be relatively shallow over chalk.
- 5.8 These shallow or chalky soils typically comprise a slightly stony (5-12% total flints) medium silty clay loam, medium clay loam or occasionally a heavy silty clay loam (in the west of the site) topsoils. These tend to overlie medium silty clay loam, silt loam or heavy silty clay loam upper subsoils. Both stone contents and type in the upper subsoil vary across the site. In some cases upper subsoils tend to be slightly stony, containing 5-15% total flints. Although over much of the site, upper subsoils tend to comprise chalky drift which commonly consists of a medium silty clay loam containing between 30-50% total chalk fragments, and rests upon solid chalk. It is evident that soil textures do vary to some degree across the site. Yet all soil profiles tend to be well drained, Wetness Class I, soil droughtiness being the key limitation. The severity of this limitation is governed chiefly by the depths to which plant roots can penetrate into the solid chalk in order to extract moisture. Therefore a soil inspection pit was dug to investigate the extent of rooting within these soil profiles. Within the pit, solid chalk was encountered at a depth of a 40cm, being overlain by a medium silty clay loam upper subsoil containing chalky drift and a slightly stony (5% total flints) medium silty clay loam topsoil. Rooting was observed to a depth of 65cm, the depth which was used as a cut-off point for the purpose of calculating the amount of profile available water. Consequently it is evident that the shallow nature of these soils over chalk means that there is a moderate restriction on profile available water for plant growth. This droughtiness limitation may affect the level and consistency of crop yields such that a classification of Subgrade 3a is appropriate.
- 5.9 Slightly deeper different soils are graded 3a in the dry valley immediately south of the junction on the M3. The topsoils were found to contain between 11-14% flints greater than 2cm in size. This is sufficient to restrict this land to Subgrade 3a due to a topsoil stone limitation. A high topsoil stone content can increase production costs by causing extra wear and tear to implements and tyres. Stones can also impair crop establishment by causing reduced plant populations in precision drilled crops.

ADAS Ref: 1501/201/94
MAFF Ref: EL15/144

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1980), Sheet 284, Basingstoke, 1:50,000. Solid and 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), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Soils and their use in South-East England. Bulletin No.15.

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.

¹The 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 Abbreviations - Explanatory Note

Soil Pit Descriptions

Database Printout - Boring Level Information

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

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

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

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

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

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. **GLEYS** : If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH** : Stone Lithology - One of the following is used.

HR :	all hard rocks and stones	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 **MD** : moderately developed
 ST : strongly developed

ped size **F** : fine **M** : medium
 C : coarse **VC** : very coarse

ped shape **S** : single grain **M** : massive
 GR : granular **AB** : angular blocky
 SAB : sub-angular blocky **PR** : prismatic
 PL : platy

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

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

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

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

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

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

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

15. Other notations

APW : available water capacity (in mm) adjusted for wheat

APP : available water capacity (in mm) adjusted for potatoes

MBW : moisture balance, wheat

MBP : moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP PLAN 2 Pit Number : 1P

Grid Reference: SU66345140 Average Annual Rainfall : 783 mm
 Accumulated Temperature : 1420 degree days
 Field Capacity Level : 166 days
 Land Use :
 Slope and Aspect : 03 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR43 00	2	5	HR					
30- 40	MZCL	10YR54 00	0	50	CH				M	Y
40- 65	CH	05Y 82 00	0	2	HR				M	Y

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 3A APW : 88 mm MBW : -15 mm
 APP : 92 mm MBP : -2 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP PLAN 2 Pit Number : 2P

Grid Reference: SU66875124 Average Annual Rainfall : 783 mm
 Accumulated Temperature : 1420 degree days
 Field Capacity Level : 166 days
 Land Use :
 Slope and Aspect : degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR43 00	5	8	HR					
30- 50	MZCL	10YR44 00	0	50	HR				M	

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 3B APW : 71 mm MBW : -32 mm
 APP : 71 mm MBP : -23 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP PLAN 2 Pit Number : 3P

Grid Reference: SU66525064 Average Annual Rainfall : 783 mm
 Accumulated Temperature : 1420 degree days
 Field Capacity Level : 166 days
 Land Use : Ley
 Slope and Aspect : degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR43 00	2	5	HR					Y
28- 50	C	75YR54 00	0	5	HR	F			M	Y
50- 80	CH	05Y 82 00	0	2	HR				M	Y

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 2 APW : 105mm MBW : 7 mm
 APP : 104mm MBP : 16 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP PLAN 2 Pit Number : 4P

Grid Reference: SU65345103 Average Annual Rainfall : 783 mm
 Accumulated Temperature : 1420 degree days
 Field Capacity Level : 166 days
 Land Use : Cereals
 Slope and Aspect : degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT. STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 23	MZCL	10YR42 00	6	10	HR					
23- 56	ZL	10YR54 00	0	35	HR				M	
56- 80	ZL	10YR54 00	0	25	HR				M	
80-120	HZCL	75YR54 00	0	25	HR	F			M	

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 1 APW : 141mm MBW : 38 mm
 APP : 111mm MBP : 17 mm

FINAL ALC GRADE : 2

MAIN LIMITATION : Topsoil Stoniness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL CLASS	GRADE	AP	MB	AP	MB					
1	SU66005160	PGR W	04	000	1	1	101	-2	108	14	3A		DR	3A	IMPEN 80
1P	SU66345140	STB W	03	000	1	1	88	-15	92	-2	3A		DR	3A	ROOT 65
2	SU66165164	PGR W	01	000	1	1	126	23	140	46	2		DR	2	FLINTS 70
2P	SU66875124	STB W		000	1	1	71	-32	71	-23	3B		DR	3A	SEE 4P
3	SU66205160	PGR W	05	000	1	1	148	45	140	46	1			1	
3P	SU66525064	LEY E		000	1	1	105	7	104	16	2		DR	2	ROOT 80
4	SU66275160	PGR W	03	000	1	1	128	25	129	35	2		DR	2	
4P	SU65345103	CER E		000	1	1	141	38	111	17	1		ST	2	
5		CER SE	01	000	1	1	098	-5	101	7	3A		DR	3A	
6	SU66705160	CER E	03	000	1	1	80	-23	83	-11	3B		DR	3A	SEE 1P
7	SU66905160	CER E	03	000	1	1	107	4	108	14	3A		DR	2	
8	SU66885157	CER E	03	000	1	1	86	-17	91	-3	3A		DR	3A	
9	SU65505140	SAS		000	1	1	120	17	113	19	2		DR	2	
10	SU6570540	PGR		000	1	1	79	-24	82	-12	3B		DR	3A	SEE 1P
11	SU65905140	PGR E	02	000	1	1	97	-6	99	5	3A		DR	3A	
12	SU66105140	PGR W	03	000	1	1	95	-8	101	7	3A		DR	3A	
13	SU66305140	OSR E	01	000	1	1	106	3	112	18	3A		DR	3A	
14	SU66505150	OSR E	03	000	1	1	81	-22	84	-10	3B		DR	3A	ALT ADJUSTED A
15	SU66705150	OSR E	03	000	1	1	86	-17	90	-4	3A		DR	3A	
16	SU66905150	CER E	01	000 000	1	1	81	-22	81	-13	3B		DR	2	SEE 4P
17	SU65305120	STB		000	1	1	65	-38	65	-29	3B		DR	3A	IMP40 GH
18	SU65505120	STB W	03	000	1	1	100	-3	99	5	3A		DR	3A	SEE 1P
19	SU65905120	PGR E		000	1	1	72	-31	72	-22	3B		DR	3B	QDR SEE 4P
20	SU65905130	PGR N	02	000	1	1	125	22	112	18	2		DR	2	IMP 100 FLINTS
21	SU66305120	CER E	02	000	1	1	97	-6	102	8	3A		DR	3A	
22	SU66405120	CER E	03	000	1	1	84	-19	89	-5	3A		DR	3A	
23	SU66505120	CER E	04	000	1	1	89	-14	93	-1	3A		DR	3A	
24	SU66605120	OSR E	01	000	1	1	82	-21	82	-12	3B		DR	2	SEE 4P
25	SU66705120	OSR E	02	000	1	1	53	-50	53	-41	3B		DR	3A	BORDER A/B
26	SU66905120	OSR		000	1	1	83	-20	87	-7	3A		DR	3A	SEE 1P
27	SU64905110	STB R		000	1	1	101	-2	100	6	3A		DR	3A	CH 50
28	SU65105100	LEY E	05	000	1	1	69	-34	69	-25	3B		DR	3A	SEE 4P
29	SU65305100	STB		000	1	1	79	-24	79	-15	3B		DR	3A	SEE 4P
30	SU65505100	STB W	03	000	1	1	94	-9	97	3	3A		DR	3A	CH45
31	SU65905100	PGR E		000	1	1	86	-17	90	-4	3A		DR	3A	CH 35
32	SU66205100	LEY E	03	000	1	1	83	-20	87	-7	3A		DR	3A	
33	SU66305100	LEY E	03	000	1	1	106	3	105	11	3A		DR	3A	BORDER 2
34	SU66505100	CER E	01	000	1	1	132	29	134	40	2			1	
35	SU66705100	ARA E	01	000	1	1	74	-29	74	-20	3B		DR	3A	SEE 4P
36	SU66905100	ARA E	01	000	1	1	95	-8	95	1	3A		DR	3A	QUERY DR SEE4P
37	SU64705080	ARA W	02	000	1	1	101	-2	109	15	3A		DR	3A	
38	SU64905080	STB		028	1	1	89	-14	94	0	3A		DR	3A	

SAMPLE NO.	GRID REF	USE	ASPECT	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
				GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP					
39	SU65105080	STB	E	04	030	1	2	97	-6	112	18	3A		DR	3A	QUERY G2
40	SU65305080	CER			000	1	1	47	-56	47	-47	4		DR	3A	IMP30 SEE 4P
41	SU65505080	CER	W	03	000	1	1	83	-20	88	-6	3A		DR	3A	
42	SU66105080	PLO	E		000	1	1	84	-19	88	-6	3A		DR	3A	
43	SU66245086	LEY	E	05	000	1	1	92	-11	97	3	3A		DR	3A	
44	SU66305080	LEY	E	01	000	1	1	65	-38	65	-29	3B		DR	3A	SEE 4P
45	SU66505080	ARA	E	02	000	1	1	86	-17	86	-8	3A		DR	3A	SEE 4P
46	SU66705080	ARA	E	04	000	1	1	109	6	110	16	2		DR	2	
47	SU66805080	ARA	E	07	000	1	1	106	3	105	11	3A		DR	3A	
48	SU66905080	ARA	E	01	000	1	1	70	-33	70	-24	3B		DR	3A	SEE 4P
49	SU64705060	ARA	W	03	000	1	1	96	-7	102	8	3A		DR	3A	
50	SU64905060	LEY	W	01	000	1	1	78	-25	82	-12	3B		DR	3B	SHALLOW
51	SU65105060	STB	E	04	000	1	1	73	-30	73	-21	3B		DR	3A	IMPEN 45 SEE4P
52	SU65305060	CER			000	1	1	78	-25	78	-16	3B		DR	3A	IMPEN 45 SEE4P
53	SU65905060	PLO			000	1	1	102	-1	109	15	3A		DR	3A	IMPEN 60 Q2DR
54	SU66105060	PLO	E	01	000	1	1	101	-2	114	20	3A		DR	3A	IMPEN 70 Q2DR
55	SU66305060	PLO	W	01	025 045	3	3A	110	7	102	8	2		WE	3A	
56	SU66505060	LEY	E	02	000	1	1	109	6	112	18	2		DR	2	
57	SU66705060	STB	E		000	1	1	103	0	113	19	3A		DR	2	IMPEN 65 SEE3P
58	SU66905060	STB	E	03	000	1	1	74	-29	74	-20	3B		DR	3A	IMPEN 45 SEE4P
59	SU65925046	PLO			000	1	1	102	-1	111	17	3A		DR	3A	IMP 75 Q2DR
60	SU66105040	PLO	W	02	000	1	1	100	-3	99	5	3A		DR	3A	CH 50
61	SU66305040	PLO	W	01	000	1	1	84	-19	88	-6	3A		DR	3A	JUST 3A SEE1P
62	SU66505040	LEY	E		000	1	1	112	9	107	13	2		DR	2	SEE 3P
63	SU66705040	LEY	E	05	000	1	1	102	-1	101	7	3A		DR	3A	NEAR 2
64	SU66775054	PLO	E	03	000	1	1	99	-4	101	7	3A		DR	3A	CH 45
65	SU66535034	LEY	E	03	000	1	1	105	2	104	10	3A		DR	3A	
66	SU66785043	ARA	E	05	000	1	1	85	-18	90	-4	3A		DR	3A	
67	SU66805030	PLO	E	01	000	1	1	89	-14	95	1	3A		DR	3A	IMP60 SEE4P
68	SU65705080	PGR	E		000	1	1	91	-12	97	3	3A		DR	3A	CH 40

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----				STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT		GLEY	>2	>6	LITH		TOT	STR	POR		IMP
1	0-25	mzc1	10YR43 00					0	0	HR	5						
	25-50	mzc1	10YR43 44					0	0	HR	15		M				
	50-80	c	75YR44 00					0	0	HR	20		M				Impen flints
1P	0-30	mzc1	10YR43 00					2	0	HR	5						
	30-40	mzc1	10YR54 00					0	0	CH	50		M				Y
	40-65	ch	05Y 82 00					0	0	HR	2		M				Y
2	0-25	z1	10YR43 00					0	0	HR	5						
	25-70	z1	10YR44 00					0	0	HR	15		M				Impen flints
2P	0-30	mzc1	10YR43 00					5	0	HR	8						
	30-50	mzc1	10YR44 00					0	0	HR	50		M				Difficult to dig see 4P.
3	0-25	z1	10YR43 00					0	0	HR	5						
	25-50	z1	10YR44 00					0	0	HR	5		M				
	50-75	mzc1	10YR44 00					0	0	HR	5		M				Y
	75-100	ch	05Y 82 00					0	0	HR	2		P				Y
3P	0-28	mzc1	10YR43 00					2	0	HR	5						
	28-50	c	75YR54 00	00MN00	00	F		0	0	HR	5		M				Y
	50-80	ch	05Y 82 00					0	0	HR	2		M				Y
4	0-23	z1	10YR42 43					3	0	HR	5						
	23-55	z1	10YR44 00					0	0	HR	10		M				Y
	55-80	ch	05Y 82 00					0	0	HR	2		P				Y
4P	0-23	mzc1	10YR42 00					6	0	HR	10						
	23-56	z1	10YR54 00					0	0	HR	35		M				
	56-80	z1	10YR54 00					0	0	HR	25		M				
	80-120	hzc1	75YR54 00	00MN00	00	F		0	0	HR	25		M				
5	0-30	mzc1	10YR33 00					0	0	HR	2						
	30-45	mzc1	10YR54 00					0	0	CH	50		M				
	45-75	ch	05Y 82 00					0	0	HR	2		M				
6	0-30	mzc1	10YR33 34					2	0	HR	5						
	30-60	ch	05Y 82 00					0	0	HR	5		P				Y
7	0-25	mc1	10YR42 00					3	0	HR	5						
	25-50	mc1	10YR43 00					0	0	CH	20		M				Y
	50-80	mc1	10YR53 00					0	0	CH	30		M				Y
8	0-28	mzc1	10YR42 00					5	1	CH	12						
	28-70	ch	05Y 82 00					0	0	HR	2		P				Y
9	0-30	mzc1	10YR44 00					0	0	CH	3						
	30-65	mzc1	10YR54 64					0	0	CH	30		M				Y
	65-95	ch	05Y 82 00					0	0	HR	2		M				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----				STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT		GLEY	>2	>6	LITH		TOT	STR	POR		
10	0-25	mzc1	10YR43 00					0	0	CH	10						Y
	25-30	mzc1	10YR52 00					0	0	CH	30		M				Y
	30-60	ch	05Y 82 00					0	0	HR	2		M				Y
11	0-25	mzc1	10YR43 00					4	0	HR	6						
	25-35	hzc1	75YR56 00					0	0	HR	5		M				Y
	35-45	mzc1	10YR44 00					0	0	CH	50		M				Y
	45-75	ch	05Y 82 00					0	0	HR	2		M				Y
12	0-25	mzc1	10YR42 00					0	0	HR	5						Y
	25-45	mzc1	10YR44 00					0	0	CH	20		M				Y
	45-70	ch	05Y 82 00					0	0	HR	2		P				Y
13	0-30	mzc1	10YR42 00					0	0	HR	3						Y
	30-45	z1	10YR43 53					0	0	HR	3		M				Y
	45-70	ch	05Y 82 00					0	0	HR	2		P				Y
14	0-30	mzc1	10YR42 43					2	0	HR	3						Y
	30-60	ch	05Y 82 00					0	0	HR	5		P				Y
15	0-30	mzc1	10YR42 43					2	0	HR	2						Y
	30-65	ch	05Y 82 00					0	0	HR	2		P				Y
16	0-25	mc1	10YR42 00					3	0	HR	5						Y
	25-50	mzc1	10YR33 00					0	0	HR	10		M				Y
17	0-25	mzc1	10YR43 00					7	0	HR	11						
	25-35	mzc1	10YR44 00					0	0	HR	5		M				
	35-40	mzc1	10YR44 00					0	0	HR	25		M				Flints 40cm
18	0-25	mzc1	10YR43 00					5	0	HR	10						
	25-50	mzc1	10YR54 00					0	0	CH	35		M				Y
	50-80	ch	05Y 82 00					0	0	HR	2		M				Y
19	0-20	mzc1	10YR43 00					5	0	HR	10						
	20-40	z1	10YR44 00					0	0	HR	15		M				
20	0-25	mzc1	10YR44 00					5	0	HR	8						
	25-45	mzc1	10YR56 00					0	0	HR	10		M				
	45-60	hzc1	75YR54 00					0	0	HR	10		M				
	60-75	c	75YR56 00	75YR58 00	F			0	0	HR	10		M				Y
	75-100	mzc1	10YR64 00					0	0	CH	30		M				Y
21	0-30	mzc1	10YR42 43					3	0	HR	5						Y
	30-38	z1	10YR54 00					0	0	HR	5		M				Y
	38-70	ch	05Y 82 00					0	0	HR	2		P				Y
22	0-30	mzc1	10YR42 52					5	0	CH	10						Y
	30-65	ch	05Y 82 00					0	0	HR	2		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----				STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT		GLY	>2	>6	LITH		TOT	STR	POR	
23	0-30	mzc1	10YR42 43					2	0	HR	3					Y
	30-35	mzc1	10YR44 00					0	0	HR	3		M			Y
	35-65	ch	05Y 82 00					0	0	HR	2		P			Y
24	0-30	mc1	10YR42 43					0	0	HR	2					
	30-50	mzc1	10YR44 00					0	0	HR	15		M			Flints 50+
25	0-28	mzc1	10YR43 00					2	0	HR	4					Y
	28-30	ch	05Y 82 00					0	0	HR	2		P			Y Chalk 30+
26	0-30	mzc1	10YR43 00					1	4	HR	8					
	30-65	ch	05Y 82 00					0	0	HR	2		M			Y
27	0-28	mzc1	10YR43 00					6	0	HR	10					Y
	28-50	mzc1	10YR64 00					0	0	CH	35		M			Y
	50-80	ch	05Y 82 00					0	0	HR	2		M			Y
28	0-25	mzc1	10YR43 00					8	0	HR	10					
	25-45	mzc1	10YR54 00					0	0	HR	25		M			Impen flints
29	0-30	mzc1	10YR43 00					9	0	HR	14					
	30-45	mzc1	10YR54 00					0	0	HR	10		M			
	45-50	mzc1	10YR54 00					0	0	HR	25		M			Impen flints
30	0-26	mzc1	10YR43 00					2	0	HR	6					Y
	26-45	mzc1	10YR44 00					0	0	CH	50		M			Y
	45-75	ch	05YW82 00					0	0	HR	2		M			Y
31	0-30	mzc1	10YR43 44					4	0	HR	6					Y
	30-35	mzc1	10YR64 00					0	0	CH	50		M			Y
	35-65	ch	05Y 82 00					0	0	HR	2		M			Y
32	0-28	mzc1	10YR42 43					3	0	HR	5					Y
	28-65	ch	05Y 82 00					0	0	HR	2		P			Y
33	0-25	mzc1	10YR43 00					3	0	HR	5					Y
	25-50	mzc1	10YR44 00					0	0	HR	5		M			Y
	50-80	ch	05Y 82 00					0	0	HR	2		P			Y
34	0-30	mzc1	10YR42 43					3	0	HR	5					Y
	30-80	z1	10YR44 00					0	0	HR	10		M			
35	0-30	mzc1	10YR42 00					3	0	HR	5					
	30-40	z1	10YR43 00					0	0	HR	10		M			Flints 40+
36	0-25	mzc1	10YR43 00					2	0	HR	5					
	25-50	z1	10YR44 00					0	0	HR	10		M			Y Flints 50+

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----				STRUCT/	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
37	0-28	mzc1	10YR42 43						3	0	HR	5						Y
	28-55	z1	10YR54 64						0	0	CH	50		M			Y	
	55-70	ch	05Y 82 00						0	0	HR	2		P			Y	
38	0-28	mzc1	10YR43 00						6	0	HR	10					Y	
	28-39	c	75YR54 00	00MN00	00	F			0	0	HR	5		M			Y	
	39-69	ch	05Y 82 00					S	0	0	HR	2		M			Y	
39	0-30	hzc1	10YR43 00						4	0	HR	8						
	30-45	c	75YR54 00	00MN00	00	C		S	0	0	HR	5		M				
	45-70	c	75YR54 00	00MN00	00	C		S	0	0	HR	10		M			Impen flints	
40	0-25	mzc1	10YR43 00						9	0	HR	15						
	25-30	mzc1	10YR44 00						0	0	HR	25		M				
41	0-25	mzc1	10YR43 00						3	0	HR	6						
	25-35	mzc1	10YR54 00						0	0	CH	50		M			Y	
	35-65	ch	05Y 82 00						0	0	HR	2		M			Y	
42	0-26	mzc1	10YR43 00						3	0	HR	6						
	26-35	mzc1	10YR44 00						0	0	CH	50		M			Y	
	35-65	ch	05Y 82 00						0	0	HR	2		M			Y	
43	0-28	mzc1	10YR42 43						7	2	HR	10					Y	
	28-40	z1	10YR44 00						0	0	HR	10		M			Y	
	40-65	ch	05Y 82 00						0	0	HR	2		P			Y	
44	0-30	mzc1	10YR43 00						10	3	HR	12						
	30-40	mzc1	10YR44 00						0	0	HR	15		M			Impen flints	
45	0-25	mzc1	10YR43 00						2	1	HR	5						
	25-50	hzc1	10YR44 00						0	0	HR	5		M			Impen flints	
46	0-25	mzc1	10YR43 00						2	0	HR	3						
	25-45	hzc1	10YR44 00						0	0	HR	5		M				
	45-55	hzc1	10YR44 00						0	0	CH	10		M			Y	
	55-80	ch	05Y 82 00						0	0	HR	2		P			Y	
47	0-25	mzc1	10YR43 00						3	1	HR	5						
	25-45	hzc1	10YR44 00						0	0	HR	5		M				
	45-50	hzc1	10YR44 00						0	0	CH	30		M			Y	
	50-80	ch	05Y 82 00						0	0	HR	2		P			Y	
48	0-25	mzc1	10YR43 00						10	2	HR	13						
	25-40	z1	10YR44 00						0	0	HR	15		M			Impen flints	
49	0-28	mzc1	10YR42 00						3	0	HR	5					Y	
	28-40	z1	10YR54 64						0	0	CH	30		M			Y	
	40-70	ch	05Y 82 00						0	0	HR	2		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----				STRUCT/	SUBS			CALC
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	
50	0-23	hzc1	10YR43 00						4	0	HR	7					Y
	23-65	ch	05Y 82 00						0	0	HR	2		P			Y
51	0-25	mzc1	10YR43 00						5	0	HR	8					
	25-35	mzc1	10YR54 00						0	0	HR	5		M			
	35-45	mzc1	10YR54 00						0	0	HR	25		M			
52	0-30	mzc1	10YR43 00						2	0	HR	5					
	30-45	mzc1	10YR54 00						0	0	HR	8		M			
53	0-30	mzc1	10YR43 00						2	0	HR	6					
	30-60	z1	10YR63 00						0	0	CH	30		M		Y	Impen flints
54	0-25	mzc1	10YR43 53						5	0	HR	8					
	25-55	c	75YR54 00						0	0	HR	10		M		Y	
	55-70	z1	10YR63 00						0	0	CH	35		M		Y	Impen flints
55	0-25	mzc1	10YR53 00						5	0	HR	10					
	25-45	c	75YR54 00	00MN00	00	C		S	0	0	HR	15		M			
	45-100	c	75YR53 00	75YR58	00	F	00MN00	00	S	0	0	HR	5		P		Y
56	0-25	mzc1	10YR43 00						3	0	HR	5					
	25-60	hzc1	10YR44 00						0	0	HR	5		M			Y
	60-80	ch	05Y 82 00						0	0	HR	2		P			Y
57	0-25	mzc1	10YR43 00						6	0	HR	10					
	25-45	hzc1	10YR54 00						0	0	HR	5		M			
	45-65	z1	10YR64 00						0	0	CH	25		M		Y	Impen flints
58	0-30	mzc1	10YR43 00						8	0	HR	10					
	30-45	mzc1	10YR44 00						0	0	HR	15		M			Impen flints
59	0-25	mzc1	10YR44 00						5	0	HR	8					
	25-40	hzc1	75YR54 00						0	0	HR	10		M			
	40-60	c	75YR53 00	00MN00	00	F			0	0	HR	10		M			Y
	60-75	mzc1	10YR64 00						0	0	CH	30		M			Y
60	0-30	mzc1	10YR43 00						8	0	HR	12					
	30-50	mzc1	10YR44 00						0	0	CH	40		M			Y
	50-80	ch	05Y 82 00						0	0	HR	2		M			Y
61	0-25	mzc1	10YR43 00						2	0	HR	5					
	25-35	mzc1	10YR44 00						0	0	CH	50		M			Y
	35-65	ch	05Y 82 00						0	0	HR	2		M			Y
62	0-30	mzc1	10YR43 00						4	0	HR	8					
	30-60	mzc1	10YR44 00						0	0	CH	30		M			Y
	60-90	ch	05Y 82 00						0	0	HR	2		M			Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----				STRUCT/		SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL		
63	0-25	mzc1	10YR43 00						4	0	HR	8							
	25-50	mzc1	10YR44 00						0	0	CH	30		M				Y	
	50-80	ch	05Y 82 00						0	0	HR	2		M				Y	
64	0-25	mzc1	10YR43 00						5	0	HR	8							
	25-45	mzc1	10YR64 00						0	0	HR	3		M				Y	
	45-75	ch	05Y 82 00						0	0	HR	2		M				Y	
65	0-30	mzc1	10YR43 00						3	1	HR	5						Y	
	30-50	mzc1	10YR53 63						0	0	CH	30		M				Y	
	50-80	ch	05Y 82 00						0	0	HR	2		P				Y	
66	0-28	mzc1	10YR43 00						3	1	HR	5						Y	
	28-35	mzc1	10YR44 54						0	0	CH	50		M				Y	
	35-65	ch	05Y 82 00						0	0	HR	2		P				Y	
																			Impen flints
67	0-30	mzc1	10YR43 00						8	0	HR	13							
	30-50	mzc1	10YR54 00						0	0	HR	10		M					
	50-60	mzc1	10YR54 00						0	0	HR	20		M					
68	0-21	mzc1	10YR43 00						3	0	HR	6							
	21-30	hzc1	10YR54 00						0	0	HR	5		M				Y	
	30-40	c	75YR56 00						0	0	HR	5		M				Y	
	40-70	ch	05Y 82 00						0	0	HR	2		M				Y	