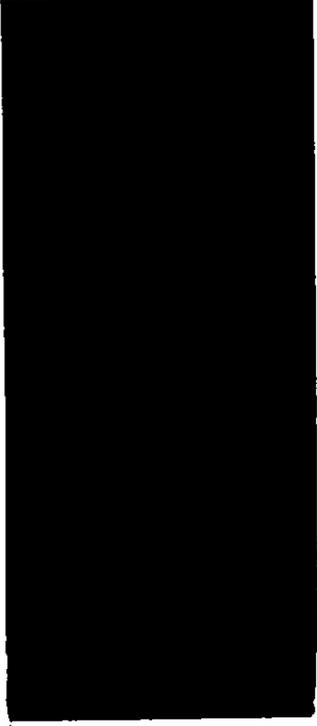


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Ministry of
Agriculture
Fisheries
and Food

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SITE 089
TEST VALLEY LOCAL PLAN
LAND NORTH OF CHARLTON,
ANDOVER, HAMPSHIRE
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
AUGUST, 1993.

**SITE 089 : TEST VALLEY LOCAL PLAN
LAND NORTH OF CHARLTON, ANDOVER, HAMPSHIRE
AGRICULTURAL LAND CLASSIFICATION REPORT**

1.0 Summary

1.1 In August, 1993, a detailed Agricultural Land Classification (ALC) was made on approximately 4 hectares of land north of Pthe village of Charlton on the north-western edge of Andover in Hampshire.

1.2 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by the non-inclusion of this area in the Test Valley Local Plan.

1.3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land. 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.

1.4 The fieldwork was carried out with an observation density of approximately one per hectare. A total of 5 borings and 2 soil pits was examined.

1.5 The table below provides the details of the grades found across the site. The majority of the land is classified as Grade 2 with a smaller area of Sub-grade 3a. The key limitation is soil droughtiness related to the amount of water available in the profile for extraction by crops. The degree of subsoil stoniness or the depth to any Chalk parent material is significant.

Table 1 : Distribution of Grades and Sub-grades

Grade	Area (ha)	%of Site
2	2.0	69.0
3A	<u>0.9</u>	<u>31.0</u>
TOTAL	2.9	100%

1.6 The distribution of the ALC grades is shown on the attached map. The information is presented at a scale of 1:5,000; it is accurate at this level but any enlargement would be misleading. This map supercedes any previous ALC information for this site.

1.7 At the time of survey the land use on the site was cereals.

1.8 A general description of the grades and sub-grades is provided as an appendix. 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.

2.0 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 the overall climatic limitation are annual average 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. The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

2.4 No local climatic factors such as exposure or frost risk affect the site.

Table 2 : Climatic Interpolations

Grid Reference :	SU351473
Altitude (m) :	75
Accumulated Temperature (days) :	1457
Average Annual Rainfall (mm) :	772
Field Capacity (days) :	169
Moisture Deficit, Wheat (mm) :	103
Moisture Deficit, Potatoes (mm) :	93
Overall Climatic Grade :	1

3.0 Relief

3.1 A small dry valley feature runs north-east/south-east through the site. the site includes the valley floor and the gently sloping valley sides together with the flatter crest slopes on the south-eastern side.

4.0 Geology and Soil

4.1 The relevant geological sheet for the site shows the underlying geology to be River and Valley Gravel in the west and Upper Chalk in the East.

4.2 Shallow chalky soils occupy the flatter crest slopes on the south-eastern side whilst light textured soils with stony subsoils occupy the rest of the site. During augering, the stony soils could not be penetrated by the auger.

5.0 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 is shown on the attached sample point map.

5.3 **Grade 2** : Pit 1 is typical of the soils mapped as this grade with soil droughtiness as the main limitation. Medium Clay Loam topsoils overlie upper and lower subsoils of similar texture. The soils show no evidence of wetness in the profile. The upper subsoil contains approximately 10% stone increasing to 40% in the lower subsoil. Roots were able to penetrate this stony subsoil but, given the high

percentage of stone, the pit was not dug beyond 80 cm and the lower subsoil has only been assumed to extend to 100 cm with similar characteristics. This creates a slight droughtiness limitation; there is a restriction in the amount of water that can be extracted by crops and this reduces the range of crops that can tolerate such conditions.

5.4 Sub-Grade 3A : Pit 2 is typical of the soils in this grade. Medium Clay Loam topsoils overlie subsoils of similar texture with approximately 35% stone contents. Chalk is encountered within 40 cm. Limited rooting takes place in the Chalk, restricted to weathered fissures. General rooting does not extend beyond 25 cm into the Chalk. A significant droughtiness limitation results.

ADAS REFERENCE : 1512/124/93
MAFF REFERENCE : EL 6015

Resource Planning Team
Guildford Statutory Group

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 on the 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.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, 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.

Sub-grade 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.

Sub-grade 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 very 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 : 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 re-claimed 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/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial 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

REFERENCES

- * 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.
- * British Geological Survey (1975), Sheet No.238, Andover, 1:50,000

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

APPENDIX IV

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 database. This has commonly used notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF** : national 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 **HRT** : Horticultural Crops **PGR** : Permanent Pasture **LEY** : Ley Grass **RGR** : Rough Grazing
SCR : Scrub **CFW** : Coniferous Woodland **DCW** : Deciduous Woodland **HTH** : Heathland **BOG** : Bog or Marsh
FLW : Fallow **PLO** : Ploughed **SAS** : Set aside **OTH** : Other

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

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

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

6. **MB (WHEAT/POTS)** : Moisture Balance.

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

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

MREL : Microrelief limitation **FLOOD** : Flood risk **EROSN** : Soil erosion risk **EXP** : Exposure limitation **FROST** : Frost
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** : Soil Erosion Risk **WD** : Combined 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
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 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

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

6. **STONE LITH** : One of the following is used.

HR : all hard rocks and stones **MSST** : soft, medium or coarse grained sandstone

SI : soft weathered igneous or metamorphic **SLST** : soft oolitic or dolimitic limestone

FSST : soft, fine grained sandstone **ZR** : soft, argillaceous, or silty rocks **CH** : chalk

GH : gravel with non-porous (hard) stones **GS** : gravel with porous (soft) stones

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

7. **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

8. **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

9. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness.

G : good **M** : moderate **P** : poor

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

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

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

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

14. 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 : TEST VALLEY LP -SITE 089 Pit Number : 1P

Grid Reference: SU Average Annual Rainfall : 772 mm
 Accumulated Temperature : 1475 degree days
 Field Capacity Level : 169 days
 Land Use :
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	75YR32 00	0	2		
30- 55	MCL	75YR34 00	0	10		
55-100	MCL	75YR33 00	0	40		

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

Drought Grade : 2 APW : 114mm MBW : 12 mm
 APP : 104mm MBP : 11 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : TEST VALLEY LP -SITE 089 Pit Number : 2P

Grid Reference: SU Average Annual Rainfall : 772 mm
Accumulated Temperature : 1475 degree days
Field Capacity Level : 169 days
Land Use :
Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 26	MCL	10YR53 00	2	4		
26- 38	MCL	10YR64 00	0	35		
38- 63	CH	10YR82 00	0	0		

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

Drought Grade : 3A APW : 083mm MBW : -19 mm
APP : 087mm MBP : -6 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
					SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	SU	STB E	02	000	1	1	000	0	000	0						DR 2	IMPEN 50
1P	SU	STB		000	1	1	114	12	104	11	2					DR 2	PIT 70
2	SU	STB W	02	000	1	1	103	1	102	9	3A					DR 3A	IMPEN 50
2P	SU	STB W	02	000	1	1	083	-19	087	-6	3A					DR 3A	PIT 90
3	SU	CER		000	1	1	056	-46	056	-37	3B					DR 3A	IMPX3QDR
4	SU	CER		000	1	1	081	-21	081	-12	3B					DR 3B	POSS 3A
5	SU	CER		000	1	1	071	-31	071	-22	3B					DR 3A	IMPQDR

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----		PED COL.	----STONES----			STRUCT/ CONSIST	SUBS						
				COL	ABUN		CONT	GLEYS	>2		>6	LITH	TOT	STR	POR	IMP	SPL
1	0-28	mc1	10YR33 00				0	0	HR	4							
	28-45	mc1	10YR34 00				0	0	HR	4							M
	45-50	hc1	10YR34 00				0	0	HR	20							M
	50-120	hc1	00Z200 00				0	0	HR	40							M
1P	0-30	mc1	75YR32 00				0	0	HR	2							
	30-55	mc1	75YR34 00				0	0	HR	10							M
	55-100	mc1	75YR33 00				0	0	HR	40							M
2	0-20	mc1	10YR43 00				0	0	HR	2							
	20-50	mc1	10YR53 00				0	0	CH	10							M
	50-80	ch	10YR82 00				0	0		0							M
2P	0-26	mc1	10YR53 00				2	0	HR	4							
	26-38	mc1	10YR64 00				0	0	CH	35							M
	38-63	ch	10YR82 00				0	0		0							M
3	0-30	mzc1	10YR43 00				0	0	HR	2							
4	0-25	mc1	10YR52 00				0	0	HR	2							
	25-50	mc1	10YR64 00				0	0	CH	20							M
5	0-25	mzc1	10YR43 00				0	0	HR	2							
	25-40	mzc1	10YR44 00				0	0	HR	5							M