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Test Valley Borough Local Plan
Site 277 Wades Farm Barton Stacey
Agricultural Land Classification
ALC Map And Report
August 1993

TEST VALLEY BOROUGH LOCAL PLAN
SITE 277 WADES FARM BARTON STACEY

AGRICULTURAL LAND CLASSIFICATION REPORT

1 Summary

1 1 In June 1993 a detailed Agricultural Land Classification (ALC) survey was made on approximately 1 5 hectares of land at Wades Farm near Barton Stacey 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 proposals for development in the Test Valley Borough Local Plan

1 3 The classification has been made using 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

1 4 The fieldwork was carried out with an observation density of approximately one per hectare A total of two borings and one soil pit were examined

1 5 The table below provides the details of the grades found across the site The agricultural land is classified as good quality (Subgrade 3a) The key limitation is droughtiness

Table 1 Distribution of Grades and Sub grades

Grade	Area (ha)	% of Site	% of Agricultural Area
3a	0 70	44 9	100
Non Agricultural	0 86	55 1	
Total Area of Site	1 56	100	

1 6 The distribution of the ALC grades is shown on the attached map The information is presented at a scale of 1 5000 it is accurate at this level but any enlargement would be misleading this map supersedes any previous ALC information for this site

1 7 At the time of survey the agricultural land use on the site was permanent grassland being used as grazing by horses The Non agricultural land is a mixture of scrub with established saplings to the northwest and an extension to an adjacent farmyard to the south

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 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 5 km 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 No local climatic factors such as exposure or frost risk affect the site

Table 2 Climatic Interpolation

Grid Reference	SU 434409
Altitude (m)	55
Accumulated Temperature (days)	1481
Average Annual Rainfall (mm)	771
Field Capacity (days)	167
Moisture Deficit Wheat (mm)	106
Moisture Deficit Potatoes (mm)	100
Overall Climatic Grade	1

3 Relief

3 1 The site lies at approximately 55 m AOD at the base of a large wide dry valley feature in an area of chalk downland It falls slightly from the east to the west At no point does altitude or gradient represent a limitation to agricultural land quality

4 Geology and Soil

4 1 The relevant published geological sheet (B G S Sheet 299 Winchester 1977) shows the majority of the site to be underlain by Cretaceous Upper Chalk with an area of Recent period Valley Gravel and sand deposits to the west

4 2 The Soil Survey of England and Wales (SSEW) published soil map for the South East (SSEW Sheet 6 1983) shows the site to be underlain by Andover

Association soil describing it as a well drained calcareous soil which is permeable and well structured This was found to be prevalent across the site

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 is shown on the attached sample point map

5 3 Subgrade 3a

The agricultural area of the site has been entirely mapped as Subgrade 3a This is due to a droughtiness limitation caused by the presence of hard Chalk at moderate (50 70 cm) depth beneath a slightly calcareous medium silty clay loam topsoil and subsoil passing to slightly and moderately stony calcareous heavy silty clay loam above the Chalk Roots were found to penetrate approximately 10 cm into the chalk from the pit observation

The grading at this site is based on the soil moisture requirements for two reference crops winter wheat and potatoes It was found that due to the limited rooting into the Chalk there would be a moderate reduction in the amount of soil moisture available either throughout or at some point during the growing season

5 4 The areas listed as Non agricultural include an area of established saplings and scrub to the west of the agricultural area and an extension to an adjacent farmyard to the south

ADAS Ref 1512/112/93
MAFF Ref EL 6105

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

* British Geological Survey (1975) Sheet No 299 Winchester 1 50 000

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

* Meteorological Office (1989) Climatological Data for Agricultural Land Classification

* Soil Survey of England and Wales (1983) sheet No 6 Soils of South East England 1 250 000

* 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 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

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

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

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 III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and ger boring information collected during ALC fieldwork is held on database This is commonly used otation and bbre iation set out below

Boring Header Information

1 GRID REF nation l grid square and 8 f gure grid reference

2 USE Land se t th time of survey The following abbre iations 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 Fru t HRT Horticultural Crop PGR Permanent Pasture LEY Ley Grass RGR Rough Grazing
SCR Scrub CFW Coniferous Woodland DCW Deciduous Woodland HTH Heathland BOG Bog or Marsh
FLW F llow PLO Ploughed SAS Set ide 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- dj sted ilable w ter capacity

6 MB (WHEAT/POTS) M isture Balance

7 DRT Best grade ccording to soil droughtin

8 If any of the following f ctors are con idered s gnificant an entry f Y will be entered in the rele ant column

MREL Microrelief limitation FLOOD Flood risk EROSN Soil erosion risk EXP Exposure limitation FROST Frost
DIST Disturbed land CHEM Chemical limitation

9 LIMIT Th main limitation to land quality The f llowing bbre iations are sed

OC O erall Climate AE Aspect EX Exposure FR Frost Risk GR Grad t MR Microrelief
FL Flood Risk TX T pso l Texture DP So l Depth CH Chemical WE Wetness WK Work bility
DR Dro ght ER Soil Ero o Risk WD Combined Soil W tness/Droughtin ss ST T psoil Stonin

Soil Pits and Auger Borings

1 TEXTURE soil te ture lasse are denoted by th f llowing bbre iation

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 L ght Silts

For the sand loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by th se f prefixes

F Fine (more than 66% f th sand less th 0 2mm)
M Medium (less than 66% fine sand and less than 33% coarse sand)
C Coarse (more than 33% of th sa d la ger than 0 6mm)

Th clay loam and silty clay loam lasses will be sub-d ided ccording to th lay content

M Medium (< 27% clay) H Hea y (27 35% clay)

2 **MOTTLE COL** Mottle colour

3 **MOTTLE ABUN** Mottle bundance expressed as a percentage of the matrix or surf ce described

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

4 **MOTTLE CONT** Mottle contrast

F faint ndistinct mottles e ident only on close nspection **D** distinct mottles are readily seen
P prominent mottling is co spicuou d on f th outstanding feature of th horizon

5 **PED COL** Ped face colour

6 **STONE LITH** One of the followng is used

HR all hard rocks and stones **MSST** soft medium or coarse grained sandston
SI soft weathered gneous or metamorphic **SLST** soft oolitic or dolimitic limestone
FSST soft fin grained sandston **ZR** soft gillaceous or silty rocks **CH** ch lk
GH gra el with on porous (hard) sto es **GS** gr v l with porous (soft) stones

Stone contents (>2cm >6cm a d total) are g en in percentages (by olume)

7 **STRUCT** the degree of de lopment ize and sh pe of soil peds are described using the followng otation

degree f d el pment **WK** weakly de eloped **MD** moderately dev loped **ST** strongly de eloped

ped size **F** fin **M** medium **C** coarse **VC** ery coarse

ped sh pe **S** single grain **M** mass e **GR** gran lar **AB** angular blocky **SAB** sub-angular blocky **PR** prismatic **PL** platy

8 **CONSIST** So l con istence is described ng th f llowing otation

L loose **VF** ery friabl **FR** friable **FM** firm **VM** ery firm **EM** e trem ly firm **EH** extremely hard

9 **SUBS STR** S bso l structural cond t on rec rded for th purpose of calculating profile droughtiness

G good **M** moderate **P** poo

10 **POR** Soil poro ity If soil horizon h s less than 0 5% biopores >0 5 mm **Y** will ppear in this column

11 **IMP** If the profile is impen trabl **Y** will ppear in this column t th appropiate horizon

12 **SPL** Slowly permeable layer If the so l horizo is lowly perm bl **Y** will appear in this column

13 **CALC** If the soil h rizo is calcareous **Y** will ppear in th column

14 Other otatio s

APW ilable w ter capa ty (in mm) adj sted for wheat
APP ilabl w ter capac ty (in mm) dj ted f potatoe
MBW mo sture bala ce wheat
MBP mo sture balance potatoes

SOIL PIT DESCRIPTION

Site Name 277 WADES FM TEST VAL LP Pit Numbe 1P

G id Ref rence SU43384095 A e age A nu l Rainfall 771 mm
Accumulated Temperature 1481 degree days
Field Capacity Level 167 days
Land Use P rmane t Grass
Slope and Aspect 01 degrees W

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	MOTTLES	STRUCTURE
0 25	MZCL	10YR42 00	0	1		
25- 37	MZCL	10YR43 00	8	16		
37 51	HZCL	10YR43 00	0	2		
51 70	HCL	10YR54 00	10	20		
70 80	CH	00ZZ00 00	0	5		

Wetne s G ade 1 Wetness Cla s I
Gleying 000 cm
SPL No SPL

Drought Grade 3A APW 109mm MBW 3 mm
APP 112mm MBP 12 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtine s

SAMPLE NO	GRID REF	ASPECT USE		GRDNT	GLEY	SPL	WETNESS- CLASS	GRADE	WHEAT AP	WHEAT MB	POTS- AP	POTS- MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT	COMMENTS
1	SU43334093	PGR			000		1	1	108	2	114	14	3A				DR 3A	CH 70
1P	SU43384095	PGR	W	01	000		1	1	109	3	112	12	3A				DR 3A	CH 70
2	SU43424095	PGR	W	02	000		1	1	92	14	95	5	3A				DR 3A	CH 50

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 22	mzcl	10YR31 00						0	0	HR	5						Y
	22 70	hzcl	10YR41 00						0	0	HR	10		M				Y
	70-80	ch	00ZZ00 00						0	0	HR	5		P				Y
1P	0 25	mzcl	10YR42 00						0	0	HR	1						Y
	25-37	mzcl	10YR43 00						8	0	HR	16		M				Y
	37 51	hzcl	10YR43 00						0	0	HR	2		M				Y
	51 70	hcl	10YR54 00						10	0	HR	20		M				Y
	70 80	ch	00ZZ00 00						0	0	HR	5		P				Y
2	0 25	mzcl	10YR42 00						0	0	HR	5						Y
	25 35	mzcl	10YR43 00						0	0	HR	5		M				Y
	35 50	hzcl	10YR54 00						0	0	CH	15		M				Y
	50 60	ch	00ZZ00 00						0	0	HR	5		P				Y