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37/95

SOUTHBROOK, ROCKBEARE

AGRICULTURAL LAND CLASSIFICATION

CONTENTS

SOUTHBROOK, ROCKBEARE

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the East Devon Local Plan. The fieldwork at Southbrook, Rockbeare was completed in June 1995 at a scale of 1:10,000. Data on climate, soils, geology and previous ALC Surveys was used and is presented in the report. The distribution of grades is detailed below and illustrated on the accompanying ALC map and is summarised below. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Southbrook, Rockbeare

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (269.3ha)
2	4.3	1.4	1.6
3a	200.8	65.2	74.6
3b	64.2	20.9	23.8
Urban	20.5	6.7	
Non Agricultural	5.6	1.8	
Agricultural Buildings	12.3	4.0	
Water	0.2	0.1	
TOTAL	307.9		

76% of the agricultural land was found to be best and most versatile, mainly Subgrade 3a, limited mainly by a moderate wetness limitation. However, at the time of survey, several auger borings proved impenetrable and the grading at these points depends to some extent on interpolation from neighbouring observations.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in June 1995 at Southbrook, Rockbeare on behalf of MAFF as part of its statutory role in the preparation of the East Devon Local Plan. The fieldwork covering 307.9 ha of land was conducted by ADAS at semi detailed density for mapping a scale of 1:10,000 (approximately one boring per 2 hectares of agricultural land). A total of 141 auger borings were examined and 8 soil profile pits used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF 1960) shows the grades of the site at a reconnaissance scale as mainly Grade 3.

The recent survey supersedes this map having been carried out at a more detailed level and using the 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 agricultural use. The grading takes account of the top 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

Although there are no previous surveys for this site, an adjoining area at Rockbeare (ADAS 1994) has been surveyed recently and the findings of both surveys have been considered in drawing up this report and map.

2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). The parameters used for assessing overall climate are accumulated temperature, a measure of the relative warmth of a locality, and average annual rainfall, a measure of overall wetness. The results shown in Table 1 indicate there is no overall climatic limitation.

Table 1: Climatic Interpolations: Southbrook, Rockbeare

Grid Reference		SY 021952	SY 035965
Altitude (m)		30	60
Accumulated Temperature (day °)		1562	1527
Average Annual Rainfall (mm)		786	821
Overall Climatic Grade		1	1
Field Capacity Days		167	173
Moisture deficit (mm):	Wheat	113	108
	Potatoes	107	101

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections.

3. RELIEF AND LANDCOVER

Altitude ranges from 30 to 60m AOD, with mainly gentle to moderate slopes which are not limiting. At the time of survey landcover was mainly grass with some cereals including maize.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale geology map, sheet 325 Institute of Geological Sciences 1986. This shows mainly Lower Marls with occasional Lower Sandstone, and patchy alluvium, not necessarily confined to drainage lines, spreading over much of the area in the east of the site. The current survey found stony parent material, possibly of alluvial origin, distributed to varying depth over much of the site.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000 showing mainly Whimple 3 Association with a large area of Brockhurst 1 Association in the east and a small area of Compton Association in the south.

Whimple 3 Association is described as reddish, fine loamy or fine silty over clayey soils with slowly permeable subsoils and slight seasonal water logging.

Brockhurst 1 Association is described as slowly permeable, seasonally waterlogged reddish fine loamy over clayey soils with some similar soils having slowly permeable subsoils and slight seasonal water logging.

Compton Association is described as stoneless mostly reddish, clayey soils affected by ground water, occurring on flat land, often with risk of flooding.

The soils found during the recent survey mainly fitted the descriptions of Whimple 3 and Brockhurst 1 Associations, although stoniness was more evident than the descriptions would indicate. Stoneless soils fitting the description for Compton Association were not found to be extensive.

5. AGRICULTURAL LAND CLASSIFICATION

At the time of survey, soils in the area were dry and hard, and frequently found to be impenetrable to the soil auger. Under these circumstances the fact that the boring was impenetrable is not necessary a reliable indication of a high stone content as would be the case at other times of the year when the soil is moist. Assessment of actual stone content by sieving of impenetrable horizons at soil profile pits revealed stone contents in some cases as low as 10 or 15 %.

Where auger borings were found to be impenetrable and therefore failed to reveal conclusive evidence as to the Wetness Class at that point, this aspect of classification had to be inferred from soil profile pits and from neighbouring borings which were successfully augered to significant depths. The soils data which accompanies this report gives actual data from all borings and pits, whether impenetrable or not.

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map. The information could be misleading if shown at a larger scale.

Table 2: Distribution of ALC grades: Southbrook, Rockbeare

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (269.3ha)
2	4.3	1.4	1.6
3a	200.8	65.2	74.6
3b	64.2	20.9	23.8
Urban	20.5	6.7	
Non Agricultural	5.6	1.8	
Agricultural Buildings	12.3	4.0	
Water	0.2	0.1	
TOTAL	307.9		

Grade 2

The area shown as Grade 2 is a continuation of that shown on a neighbouring survey at Rockbeare (ADAS 1994), where this grade was found to be mainly Wetness Class II with medium clay loam and sandy clay loam topsoils, a slight limitation due to wetness or occasionally due to droughtiness. This grade has proved not to extend far into the current survey area, although a few scattered single borings elsewhere in the area where also found to be Grade 2 with similar characteristics.

Subgrade 3a

Much of the survey area has been assessed as Subgrade 3a, typically Wetness Class III with medium clay loam topsoils. Profiles commonly show evidence of gleying for 15-20 cm above a slowly permeable horizon which starts at 40-60 cm depth. In some cases this slowly permeable horizon is found to be slightly to moderately stony with up to 37% stones accessed by sieving. This mapping unit may include scattered Subgrade 3b profiles as described below.

However since the stone content is of alluvial origin, it was found to be highly variable and at one soil profile pit a moderate limitation due to droughtiness was observed. However this was considered to be of local occurrence and of relatively minor importance.

Subgrade 3b

Subgrade 3b was found to occur where the very slightly stony red marl occurs closer to the surface giving rise to Wetness Class IV with medium clay loam topsoil, a more serious moderate limitation due to wetness. This may also occur where auger survey points were found to be impenetrable due to slight stoniness in the upper subsoil. The distribution of this subgrade was considered to be somewhat irregular, not necessarily reflecting topography, indicating a borderline distribution of grades between Subgrade 3a and Subgrade 3b.

Other land

Apart from urban land, which includes roads and domestic properties, other land includes small areas of non-agricultural land, mainly woodland. Farm buildings include one major horticultural nursery, now partly disused, and other horticultural buildings.

Resource Planning Team
Taunton Statutory Unit
10 June 1994

APPENDIX 1

REFERENCES

ADAS Resource Planning Team, Report of Survey for East Devon Local Plan, Job Reference 84.94 ADAS Bristol.

INSTITUTE OF GEOLOGICAL SCIENCES (1986) Drift Edition, Sheet 325, Exeter, 1:50,000 scale.

MAFF (1960) Agricultural Land Classification Map, Sheet 176, Provisional 1:63,360 scale.

MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land), Alnwick.

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5, Soils of South West England, 1:250,000 scale.

APPENDIX 2

DESCRIPTION OF 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 include 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 and horticultural crops can usually be grown but on some land in 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. Where 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 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 most 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.

Descriptions of other land categories used on ALC maps

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 park land, 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.

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 landcover types, eg buildings in large grounds, and where may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land), Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

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

Wetness Class 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 not wet within 40 cm depth for more than 30 days in most years.

Wetness Class 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 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 and 90 days in most years.

Wetness Class IV

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

Wetness Class V

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

Wetness Class VI

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

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

Source: Hodgson, J M (in preparation), Soil Survey Field Handbook (revised edition).

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 1 (ASP 96)	0°	PGR	Av Rainfall: 821 mm ATO: 1527 day °C FC Days: 173 Climatic Grade: 1 Exposure Grade: 1	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
37.95	14.6.95	SY 029958	PB/HLJ		PB290

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	18	MCL	10YR44	1% >2cm 1% <2cm 2% HR(S&D)	RRCh	F	-	-	_	G	MF,VF	-	Clear Smooth
2	35	MCL	75YR43	4% >2cm 8% <2cm 12% HR(S&D)	FFFGM (75YR63)	F	MCSAB	Fr	M	G	CF,VF	-	Clear wavy
3	60	C	75YR53	22% >2cm 15% <2cm 37% HR(S&D)	MDMG,OM (10YR74) (75YR58)	M*	WCSAB	VFm	P	G*	FVF	-	Ab wavy
4	90+	C	5YR54	10% HR(Vis)	MDMO,GM (75YR58) (5YR74)	C	WAdCSAB	Fm	P	P	FVF	-	

Profile Gleyed From: 35cm

Depth to Slowly Permeable Horizon: 60cm

Wetness Class: III

Wetness Grade: 3a

Available Water	Wheat:	111 mm
	Potatoes:	89 mm
Moisture Deficit	Wheat:	110 mm
	Potatoes:	104 mm
Moisture Balance	Wheat:	+1 mm
	Potatoes:	-15 mm
Droughtiness Grade:		3a (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks:

Top H3 compact and cemented with stone and concretions.
H3 Porosity variable but just permeable overall
H4 Augered to 120cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 2 (ASP 85)	1° North	Maize	Av Rainfall: 821 mm ATO: 1527 day °C	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 173 Climatic Grade: 1 Exposure Grade: 1	SOIL SAMPLE REFERENCES
37/95	14/6/95	SY 034959	PB/HLJ		PB291

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	20	MCL	10YR43	1% HR>2cm (S) 1% HR<2cm (S&D) 2%HR TOTAL	NONE	NONE	-	-	-	-	MF	_	Clear Wavy
2	28	MCL	10YR43	12% HR>2mm(S) 19% HR<2m(S&D) 31% HR TOTAL	NONE	NONE	WCSAB	Friable	Moderate	Good	CF+VF	_	Gradual Smooth
3	50	SCL	75YR64	12% HR>2cm(S) 19% HR<2m(S&D) 31% HR TOTAL	MDFD+G	Common	WCAB	Friable	Good	Good	FF+VF	-	Clear Smooth
4	77	MSL	75YR63	30%HR>2cm(S) 32%HR<2cm(S&D) 62%HR TOTAL	CDMO (75YR58)	Common	Too stony	-	Good	Good (water moving around stones	FVF	-	Abrupt Smooth
5	90+	SCL	25YR44	45%HR>2m(S) 25%HR<2cm(S&D) 70%HR TOTAL	NONE	Common	Too stony	-	Good	Good (water moving arou nd stones	None	-	-

Profile Gleyed From: 28cm

Depth to Slowly Permeable Horizon: (72cm) see remarks

Wetness Class: II

Wetness Grade: 2

Available Water	Wheat:	108 mm
	Potatoes:	88 mm
Moisture Deficit	Wheat:	110 mm
	Potatoes:	104 mm
Moisture Balance	Wheat:	-2 mm
	Potatoes:	-16 mm
Droughtiness Grade:		3a (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Draghtiness

Remarks:
SC patches in H3
Discontinuous cemented Manganese pan at boundary of H4+H5 which is effectively impermeable. Water sitting on top of it.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 3 (ASP 15)	0°	Maize	Av Rainfall: 821 mm ATO: 1527 day °C FC Days: 173 Climatic Grade: 1 Exposure Grade: 1	Lower marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
37.95	14.6.95	SY 029958	PB/HLJ		PB292

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size,Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	MCL	22	75YR44	1%HR>2cm(S) 1%HR<2cm(S&D) 2%HR TOTAL	None	Few	-	-	-	Good	CF +VF	-	Gradual Smooth
2	HCL	42	75YR53	2% HR TOTAL (VIS)	FDVFO+G (75YR56) (10YR74)	Few	WCSAB	Friable	Moderate	Poor	FVF	-	Gradual Smooth
3	C	60	75YR53	30% HR TOTAL (VIS)	CDVFO+G (75YR56) (10YR74)	Common	WCSAB	Friable	Moderate	Poor	NONE	-	Gradual Smooth
4	C	80+	25YR46 (25YR54)	10% HR TOTAL (VIS)	CDFO (75YR56,66)	Few	WCSAB	Firm	Moderate	Poor	NONE	-	-

Profile Gleyed From: 42cm

Depth to Slowly Permeable Horizon: 42cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 129 mm

Potatoes: 105 mm

Moisture Deficit Wheat: 110 mm

Potatoes: 104 mm

Moisture Balance Wheat: +19 mm

Potatoes: +1 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Wetness

Remarks:

H2 almost meets definition of SPL but the evidence of the profile shows water passes through to accummulate below it. Profile is borderline WC IV.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 4 (Asp116)	3°N	Ley	Av Rainfall: 786 mm ATO: 1562 day °C	Lower marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 167 Climatic Grade: 1	SOIL SAMPLE REFERENCES
37.95	15.6.95	SY037957	HWJ/PB	Exposure Grade: 1	PB293

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	22	MCL	75YR43	5% HR(vis)	0	F	-	-	-	G	MF,VF	-	Clear Smooth
2	36	MCL	75YR54	3% 72cm 15%42cm 18% HR (S&D)	FFFGM (75YR64)	C	MC+MSAB	Fr	M	P(in ped)	CF,VF	-	Grad Smooth
3	52	C	10YR64	10%HR (Vis)	CDFOM (75YR58)	C	MCSAB	Fm	M	P	FF,VF	-	Grad Smooth
4	80+	C	5YR54 (5YR64)	0	MDFO,GM (75YR58)	0	MCPr	Fm	P	P	FVF (ex ped)		

Profile Gleyed From: 36cm

Depth to Slowly Permeable Horizon: 52cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 126 mm

Potatoes: 103 mm

Moisture Deficit Wheat: 110 mm

Potatoes: 104 mm

Moisture Balance Wheat: +16 mm

Potatoes: -1 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks:

H2 stones includes Mn concretions from base of H2

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 5 (Asp 134)	1° N	Ley	Av Rainfall: 786 mm ATO: 1562 day °C FC Days: 167 Climatic Grade: 1 Exposure Grade: 1	Lower marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
37.95	16.6.95	SY 023953	HLJ/PB		PB294

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size,Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	24	MCL	75YR43	1%>2cm 4%≤2cm 5% HR (S&D)	FDVFOM (75YR56)	F	-	-	-	G	MF,VF-	-	Clear Smooth
2	48	MCL	75YR54	8%>2cm 8%≤2cm 16% HR(S&D)	CFFOM (75YR56)	C	WCSAB	Fm	P	G	CVF	-	Clear Smooth
3	90+	C	5YR54 (5YR54)	10% HR(Vis)	MFFOM (5YR58)	F	MCPr	Fm	P	P	CVF	-	

Profile Gleyed From: 24 to 48 cm

Depth to Slowly Permeable Horizon: 48cm

Wetness Class: III

Wetness Grade: 3a

Available Water	Wheat:	117 mm
	Potatoes:	94 mm
Moisture Deficit	Wheat:	110 mm
	Potatoes:	104 mm
Moisture Balance	Wheat:	+7 mm
	Potatoes:	-10 mm
Droughtiness Grade:		2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks:

Pit augered to 120cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook	Pit 6(ASP 139)	2° North	PGR	Av Rainfall: 786 mm ATO: 1562 day °C FC Days: 167 Climatic Grade: 1 Exposure Grade: 1	Lower marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
37/95	15/6/95	SY 030953	PB/HLJ		PB295

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size,Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	15	MCL	754YR53	2%HR TOTAL (Vis)	MRRC (75YR58) MDMG 10YR64	None	-	-	-	G	MF+VF	-	Gradual Smooth
2	35	HCL	75YR64	10%HR TOTAL (Vis)	MDFG +O (75YR58,74)	Common	MCSAB	Firm	M	G	CVF	-	Gradual Smooth
3	70+	C	25YR46 (25YR54)	0% HR (Vis)	MDFO+G (75YR56,64)	Few	MCPr	Very firm	P	P	FVF (ex ped)	-	-

Profile Gleyed From: 0cm

Depth to Slowly Permeable Horizon: 35cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 124 mm

Potatoes: 101 mm

Moisture Deficit Wheat: 110 mm

Potatoes: 104 mm

Moisture Balance Wheat: +14 mm

Potatoes: -3 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks:

Dense mat of turf.
Topsoil HCL 0-25cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook Rockbeare	Pit 7 (ASP 118)	1° North	PGR	Av Rainfall: 786 mm ATO: 1562 day °C FC Days: 167 Climatic Grade: 1 Exposure Grade: 1	Lower Marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
37/95	20.6.95	SY017954	PB/HLJ		PB296

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size,Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	22	MCL	75YR54	1% >2cm 3%<2cm 4% HR(S&D)	FDVFOM (75YR56)	0	-	-	-	G	MF,VF	-	Clear Smooth
2	40	HCL	5YR53	1% > 2cm 3%< 2cm 4% HR(S&D)	CDFOM (75YR58)	C	WCSAB	Fm	P	G	CVF	-	Clear Smooth
3	58	C	5YR54 (5YR53)	3% > 2cm 5%< 2cm 8% HR(S&D)	CDMOM (5YR58)	M	WCAB	Fm	P	P*	FVF	-	Ab smooth
4	90+	C	25YR54 (25YR54)	4% HR(Vis)	CDMOM (25YR58)	M	WAdCSAB	Fm	P	P		–	

Profile Gleyed From: 22cm

Depth to Slowly Permeable Horizon: 40cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 118 mm

Potatoes: 96 mm

Moisture Deficit Wheat: 110 mm

Potatoes: 104 mm

Moisture Balance Wheat: +8 mm

Potatoes: -8 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): We

Remarks:

H3 porosity variable, therefore borderline WC IV/III

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Southbrook Rockbeare	Pit 8 (ASP 44)	2° South	PGR	Av Rainfall: 821 mm ATO: 1527 day °C	Lower Marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 173 Climatic Grade: 1	SOIL SAMPLE REFERENCES
37/95	20/6/95	SY 021 962	PB/HLJ	Exposure Grade: 1	PB 297

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	24	MCL	75YR54	1% HR> 2cm (s) 9% HR< 2cm(S&D) 10%HR TOTAL	None	Few	-	-	-	Good	MF + VF	-	Clear Smooth
2	50	C	75YR43	6% HR> 2cm (s) 9% HR< 2cm(S&D) 15%HR TOTAL	CDFG + 0 (75YR56) (75YR64)	Common (Large concretions)	WCSAB (tending to prismatic)	Firm	Moderate	Good	CVF	-	Gradual Smooth
3	80	C	05YR54 (05YR53)	10% HR TOTAL (Vis)	CDVFO (75YR56)	Common	WCPr	Very Firm	Poor	Poor	FVF	-	Gradual Smooth
4	85+	C	25YR46	2% HR TOTAL (Vis)	None	Common	-	-	-	-	None	-	-

Profile Gleyed From: 24cm

Depth to Slowly Permeable Horizon: 50cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 125 mm

Potatoes: 98 mm

Moisture Deficit Wheat: 110 mm

Potatoes: 104 mm

Moisture Balance Wheat: +15 mm

Potatoes: -6 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Wetness

Remarks:

Augered to 120 cm but H4 not investigated as no effect on grade.