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BRIDGWATER SOUTH

AGRICULTURAL LAND CLASSIFICATION SURVEY

CONTENTS

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INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 692.7 ha of land at Bridgwater South Field survey was based on 329 auger borings and 22 soil profile pits, and was completed in November 1997 During the survey 15 samples were analysed for particle size distribution (PSD).

2. The survey was conducted by the Resource Planning Team of FRCA Western Region on behalf of MAFF in its statutory role in the preparation of Sedgemoor District Local Plan.

3. Information on climate, geology and soils, and from previous ALC surveys was considered and is presented in the relevant section. The published regional ALC map (MAFF, 1977), shows the site at a reconnaissance scale as mainly Grade 3 through the centre and north of the site with Grades 1 and 2 on the ridge around North Petherton. The site had not been surveyed previously and current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF, 1988) and therefore supersedes any previous ALC survey. Grade descriptions are summarised in Appendix I.

4. Several sites adjacent to the current site had been surveyed previously. These are at Wembdon to the north of the site (ADAS 1994), Hampbrook and Rhode Lane Farm (both ADAS 1994) and at Daws Farm (ADAS 1992) to the north east of the current site. These all found a mixture of Subgrades 3a and 3b with some Grade 2, all limited to varying degree by wetness. An unpublished survey at Branchflower Farm (ADAS 1990) to the south of the current site found Grade 1 with no significant limitations.

5. At the time of survey land cover was mainly grass and winter cereals. Other land which was not surveyed was mainly residential land, farm buildings and roads with some allotments, a cemetery, a recreation field and a large rugby ground. There was very little woodland or other rough ground.

SUMMARY

6. The distribution of ALC grades is shown on the accompanying 1: 20 000 scale ALC map. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas. Areas are summarised in the Table 1.

7. This shows that 68% of the area was found to be best and most versatile. This was mainly Subgrade 3a limited by wetness with smaller areas of Grade 2 on the ridge around North Petherton limited also by droughtiness. The small area at the south end of the site was found to be Grade 1 with no significant limitation and the remainder of the site was found to be mainly Subgrade 3b with a more serious limitation due to wetness.

Table 1: Distribution of ALC grades: Bridgwater South

Grade	Area (ha)	% Surveyed Area (636.4 ha)
1	38.1	6
2	58.7	9
3a	334.8	53
3b	195.8	31
4	8.9	1
~~5 Other~~	56.3	
Total site area	692.7	

CLIMATE

8. Estimates of climatic variables for this site were derived from the published agricultural climate dataset "Climatological Data for Agricultural Land Classification" (Meteorological Office, 1989) using standard interpolation procedures. Data for key points around the site are given in Table 2 below.

9. Since the ALC grade of land is determined by the most limiting factor present, overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions. Parameters used for assessing overall climate are accumulated temperature, a measure of relative warmth and average annual rainfall, a measure of overall wetness. The results shown in Table 2 indicate that there is no overall climatic limitation.

10. Climatic variables also affect ALC grade through interactions with soil conditions. The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes, which are compared with the moisture available in each profile in assessing soil droughtiness limitations. These are described in later sections.

Table 2: Climatic Interpolations: Bridgwater South

Grid Reference		ST 290319	ST 297364
Altitude (m)		40	8
Accumulated Temperature (day °C)		1539	1563
Average Annual Rainfall (mm)		776	758
Overall Climatic Grade		1	1
Field Capacity Days		167	164
Moisture deficit (mm):	Wheat	105	111
	Potatoes	97	105

RELIEF

11. Altitude ranges from 40 metres at the south end of the site to 5 metres at the north end with mainly gentle and moderate slopes which are not limiting.

12. The area of moor known as The Meads in the north of the site is reported to suffer regular winter flooding although this may be little more than surface ponding. A small area around ASP 88 was also observed to suffer prolonged surface ponding, although not true flooding. In neither case was the flooding assessed as causing a limitation more serious than to Subgrade 3b. The area known as Stock Moor in the centre of the site was reported to suffer no significant flooding since the installation of pumped arterial drainage to replace a tidal flap.

GEOLOGY AND SOILS

13. The underlying geology of the site is shown on the published geology map (IGS) 1975) as mainly Keuper Marl with small areas of Burtle Beds on small areas of the higher ground and more extensive areas of alluvium on the lower lying moors. A small area of Upper Sandstone is shown in the extreme south of the site. This was largely borne out by the current survey although the areas of river gravel shown as Burtle Beds were found to be more extensive and sporadic than indicated, giving rise to gravel in the subsoil overlying areas shown as Keuper Marl.

14. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW, 1983) as mainly Whimple 1 and Whimple 3 associations on the Keuper Marl with Compton association on the alluvium. Bromsgrove and Hodnet associations are shown on the Upper Sandstone deposits with an area of Newnham Association south of Daws Farm.

15. Whimple 1 and Whimple 3 associations are described as reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Whimple 1 association is distinguished by being associated with similar well drained soils, some over gravel. Compton association is described as stoneless mostly reddish clayey soils affected by groundwater on flat land with a risk of flooding. Hodnet association is described as reddish fine and coarse loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Bromsgrove Association is described as well drained reddish coarse loamy soils mainly over soft sandstone, but deep in places. Newnham association is described as well drained reddish coarse and fine loamy soils over gravel, locally deep.

16. Although this description and distribution were largely borne out by the current survey, the area of Bromsgrove association shown south of Bells Farm was found to be less extensive than indicated and rather more similar to the description of Hodnet Association, whereas in the extreme south of the site, the area shown as Bromsgrove association was found to be more extensive south than indicated.

AGRICULTURAL LAND CLASSIFICATION

17. The distribution of ALC grades found by the current survey is shown on the accompanying 1: 20 000 scale map and areas are summarised in Table 1. The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas.

Grade 1

18. The larger area of Grade 1 in the south of the site is found to be virtually stoneless fine sandy loam becoming loamy sand and sand in the lower subsoil and although red clay may be found at around 100 cm in some profiles in the north of the area, there is no evidence of wetness and profiles were assessed as Wetness Class I. (See Apepndix II). This is illustrated by Pit 14. Topsoil textures were confirmed to be fine sandy loam by laboratory analysis.

19. Within the area shown as Subgrade 3a there are occasional scattered borings with medium clay loam topsoil at Wetness Class I. These are illustrated by Pit 7 in the north of the site where three such borings are found together, sufficient to make a small mapping unit.

Grade 2

20. The main areas of Grade 2 are found to the south of Daws Farm although the area around Staffland Farm is sufficiently similar to be considered together. These are mainly medium clay loam topsoil at Wetness Class I or II where a slowly permeable layer is found in the lower subsoil and with gravel contents of up to 25% in the profile, mainly above 100 cm. This gives a droughtiness limitation also to Grade 2. These conditions are illustrated by Pits 13 and 15. The other small area of Grade 2 south of Bells Farm is rather different and is illustrated by Pit 17. This found a fine sandy loam topsoil over sandy clay loam subsoil and clay parent material with no evidence of wetness, Wetness Class I, but also a droughtiness limitation to Grade 2.

Subgrade 3a

21. The area shown as Subgrade 3a is by far the largest on the site but includes a variety or profile types including scattered borings of other grades.

22. Perhaps the most commonly occurring type of profile in the area has a medium clay loam topsoil at Wetness Class III with a slowly permeable layer at 50 - 60 cm and with gleying evident in the upper subsoil. This is illustrated by Pits 6, 8 and 21.

23. Where gravel is found in the subsoil soil and parent material, this frequently gives rise to a Grade 2 droughtiness limitation but it can also conceal a slowly permeable layer in the middle or lower subsoil, Wetness Class III or occasionally II. With medium clay loam topsoil and Wetness Class III such as at Pits 5, 11, 12 and 16 or with heavy clay loam topsoil at Wetness Class II as at Pit 10, this gives rise to Subgrade 3a limited mainly by wetness.

24. Within the area shown as Subgrade 3a there are small areas where the raw Keuper Marl lies close to the surface with little overlying drift or weathered material. This generally gives rise to a slowly permeable layer at the top of the red marl. Frequently such profiles show no gleying with only manganese or a few ochreous mottles as evidence of wetness. Typically such profiles were assessed as Wetness Class III or IV and were mainly found to have heavy clay loam topsoil textures, indicating Subgrade 3b. These are illustrated by Pits 2, 12, 20 and 22. Such profiles were found mainly on small convex slopes and banks and as the areas involved were too small to be mapped at semi detailed intensity, they have been included within the Subgrade 3a mapping unit.

25. The area shown as Subgrade 3a also includes several auger borings assessed as Grade 2, generally with medium clay loam topsoil at Wetness Class II with a slowly permeable layer in the lower subsoil. These are illustrated by Pit 1 but nowhere do the borings form a robust mapping unit which can be shown in its own right.

Subgrade 3b

26. This mapping unit includes several borings north of Rhode Farm with heavy silty clay loam topsoil at Wetness Class III with a slowly permeable layer in the red marl as described in the previous paragraph, but in this case sufficient similar borings are found in the upland area to be included in a Subgrade 3b mapping unit. This is illustrated by Pit 4. Other scattered borings with heavy silty clay loam topsoil at Wetness Class III as described at Pit 9 are also found within the area shown as Subgrade 3a.

27. However the main part of the Subgrade 3b mapping unit is found on the low lying alluvial land with a range of clay loam and clay topsoil textures at Wetness Class III or IV such as are illustrated by Pits 3 and 19. A large area around Pit 19 on Stock Moor was found to have a variable depth of peat under a clay cap of around 40 cm.

27. Two areas of motorway spoil were found, both of which have been reclaimed with topsoil but also with compaction in the subsoil. One around Asp 233 - 249 is shown as Subgrade 3b but one at Asp 328 was too small to be mapped.

Grade 4

28. Two small areas of Grade 4 are shown, one around ASP 5 limited by pronounced ridge and furrow micro relief and another around ASP 88 where extreme wetness and prolonged surface ponding indicated Wetness Class V.

P Barnett
Resource Planning Team
FRCA Bristol
December 1997

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 1 (ASP 111 - 126)	1° E	Ley	Av Rainfall: 774 mm ATO: 1568 day °C FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	Drift over Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
71/97	6/11/97	ST 2928 3464	SK & PW		TS 0-25 cm H/MZCL (S19:Z54:C27%)

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	25	HZCL/ MZCL	7.5YR44	1% HR	-	0	-	-	-	-	MF	-	Abrupt Smooth
2	36	C	7.5YR46	10% HR (vis)	Few 75YR5/6	Common	MDCSAB	FR	M	G	CF	-	Clear Smooth
3	61	C	7.5YR46	0	Few 75YR5/6	Common	MDCSAB	FR	M	G	FF	-	Clear Smooth
4	85	C	5YR44	30-35% HR&ZR (vis)	0	0	Too stony	FM	M	G	-	-	-

Profile Gleyed From: -

Slowly Permeable Horizon From: -

Wetness Class: I

Wetness Grade: 2

Available Water Wheat: 123 mm

Potatoes: 110 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 17 mm

Potatoes: 12 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): WK, DR

Remarks: Horizons 2 & 3 clearly not spl

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 2 (ASP 85)	1° N	Ley	Av Rainfall: 774 mm ATO: 1568 day °C FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
71/97	6/11/97	ST 2811 3522	PW & SK		TS 0-25 cm HCL (S21: Z50: C29%)

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	25	HCL	10YR44	0			-	-		-		-	Clear Smooth
2	41	HCL	7.5YR54 (7.5YR52)	0	7.5YR58 Many	Few	MDCPR	FR	M	G	CF	-	Abrupt Smooth
3	85+	C	5YR44	0	7.5YR58 Common locally	Com	WKCPR	FM	M	P	Comm Ex Ped	-	-

Profile Gleyed From: 25 cm

Slowly Permeable Horizon From: 41 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 144 mm

Potatoes: 120 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 38 mm

Potatoes: 22 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): WE

Remarks: Part augered to 120 cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 3 (ASP 46)	0°	PGR	Av Rainfall: 758 mm ATO: 1563 day °C	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	6/11/97	ST 2868 3578	PW & SK		TS 0-25 cm MCL (S28:Z48: C24%)

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	23	MCL	75YR44	0	Comm 7.5YR46 and CRRC	0	-	-	M	-	MF	-	Abrupt Smooth
2	34	C	10YR53	0	Many 10YR56	0	MDMSAB	FR	M	G	FF	-	Abrupt Smooth
3	83+	C	2.5Y61 (10YR63)	0	Many 10YR58	0	MDM & CAB	FM	M	P	FF	-	-

Profile Gleyed From: 23 cm

Slowly Permeable Horizon From: 34 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: 143 mm

Potatoes: 119 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 37 mm

Potatoes: 21 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): WE

Remarks: Water in pit at 60 cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 4 (Nr ASP 137)	3°	CER	Av Rainfall: 774 mm ATO: 1568 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	7/11/97	ST 2727 3464	PW & SK		TS 0-25 cm HZCL (S17: Z55: C28%)

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	27	HZCL	75YR44	2% HR	0	Few	-	-	M	-	CF	-	Clear Smooth
2	47	C	25YR34 (25YR53)	0	75YR46 Common	Few	MDCSAB Tending to AB/PR	FM	M	G	FF	-	Clear Smooth
3	80+	C	25YR34 (25YR53)	0	0	Common	MDCPR Breaking to AB	FM	M	P	FF	-	-

Profile Gleyed From: 27 cm

Slowly Permeable Horizon From: 47 cm

Wetness Class: III

Wetness Grade: 3b

Available Water Wheat: 140 mm

Potatoes: 116 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +34 mm

Potatoes: +18 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): WE

Remarks: Borderline to WCIV 3b (ie: SPL 47) Clay becomes SPL where identificaiton of Mn is common.
Augered to 100 cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 5 (ASP 18)	5° N	Permanent Grass	Av Rainfall: 774 mm ATO: 1568 day °C	Burtle Beds
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	11/11/97	ST 2792 3604	PRW & SH		None

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	7.5YR44	3% HR (vis)	-	-	-	FR	M	-	MF,CVF	-	Abrupt Smooth
2	36	HCL	5YR44	20%> 2 cm 32%< 2 cm (s+d) 52% Total HR	-	-	MDMSAB	FM	M	G	CF,VF	-	Clear Smooth
3	48	C	75YR54	20%> 2 cm 28%< 2 cm (s + d) 48% Total HR	-	-	MDMSAB	FM	M	G	CF,VF	-	Abrupt Smooth
4	67	C	25YR34 (25YR43)	1% HR (vis)	-	C - M	MDCPR	VM	M	P	CVF	-	Clear Smooth
5	100	C	25YR34	-	-	F	MDMSAB	FM	M	G	FVF	-	-

Profile Gleyed From: Not gleyed

Slowly Permeable Horizon From: 48 - 67 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 121 mm

Potatoes: 97 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 15 mm

Potatoes: -1 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: Describes Asp 17,18, 27, 28, 39

SITE NAME	PROFILE NO:	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 6(ASP 42)	1° E	PGR	Av Rainfall: 758 mm ATO: 1563 day °C	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	11/11/97	ST 2818 3576	PW/SH		None

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	0	-	-	-	-	-	-	CF,VF	-	Clear Smooth
2	31	MCL	10YR42	0	-	-	MDMSAB	FR	-	G	CF,VF	-	Clear Smooth
3	41	HCL	10YR53	0	CDMO 10YR56	-	MDCSAB	FM	-	G	CF,VF	-	Abrupt Smooth
4	59	C	25Y52-53	0	CDMO 10YR56	-	MDCSAB	FM	-	G	FF,VF	-	Clear Smooth
5	80	C	5YR44 (7.5YR53)	0	CDMO 7.5YR56	Few fine	MDCPR	FM	-	P	FVF	-	-

Profile Gleyed From: 31cm

Slowly Permeable Horizon From: 59 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 139 mm

Potatoes: 115 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 33 mm

Potatoes: 17 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: H4 appears to be SPL in auger boring but is highly porous

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater	Pit 7 (ASP 30)	3° N	Permanent Grass	Av Rainfall: 774 mm ATO: 1568 day °C	Drift over Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	12/11/97	ST 2814 3589	PRW/SH		None

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	23	MCL	7.5YR44	1% HR (vis)	None	None	-	-	-	-	Many Fine	-	Clear Smooth
2	46	MCL	7.5YR44	1% HR (vis)	None	None	MDCSAB	Friable	Moderate	G	Common Fine	-	Grad Smooth
3	90	HCL	7.5YR44,46 (7.5YR43)	1% HR (vis)		Common	MDCSAB with prismatic tendency	Friable	Moderate	G biopores all less than 1mm	Common Fine	-	-

Profile Gleyed From: -

Slowly Permeable Horizon From: No spl;

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	153 mm
	Potatoes:	116 mm
Moisture Deficit	Wheat:	106 mm
	Potatoes:	98 mm
Moisture Balance	Wheat:	47 mm
	Potatoes:	18 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s): None

Remarks: Water at 85 cm
H3 too porous to be SPL, also the SAB structure was moderate and more dominant than the prismatic.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 8 (ASP 216)	1° W	PGR	Av Rainfall: 774 mm ATO: 1568 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	13/11/97	ST 2785 3414	PW/SH		None

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	23	MCL	7.5YR43	1% HR	None	None	-	-	-	-	MF,VF	-	Clear Smooth
2	37	HCL	75YR54 (7.5YR53)	1% HR	None	None	MDCSAB	FR	M	G	CF,VF	-	Abrupt Smooth
3	50	C	5YR46	0	None	None	STCPR breaking readily to CSAB	FM	M	G	CF, VF	-	Clear Smooth
4	80+	C	5YR44.46 (5YR53)	0	CFFO 5 YR56 within peds	Few on ped faces	STCPR will break to CSAB	VM	M	P	FF, VF	-	

Profile Gleyed From: 50 cm

Slowly Permeable Horizon From: 50 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 140 mm

Potatoes: 116 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 34 mm

Potatoes: 18 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: Upper 15 cm of clay (H3) is not SPL due to high porosity but this is not detectable in auger borings. 50 cm could be taken as the approximate boundary for the SPL to begin regardless of the depth of clay overlying this for this area.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 9 (ASP 159)	1° S	PGR	Av Rainfall: 774 mm ATO: 1568 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171	PSD SAMPLES TAKEN
71/97	18/11/97	ST 2779 3451	SH/PB	Climatic Grade: 1 Exposure Grade: 1	TS 0-25 cm HZCL (S15: Z56: C29%)

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	25	HZCL	7.5YR43	3% HR	None	None		-	-	G	MF,VF	-	Clear Smooth
2	50	HZCL	7.5YR53	8% HR	Common distinct fine 75YR58	Common	MDCSAB	FM	M	G	CVF	-	Gradual Smooth
3	63	HZCL	7.5YR44 (10YR53)	3% HR	Common distinct fine 75YR58	Common	MDCSAB	FM	M	G	FVF	-	Gradual Smooth
4	85+	C	5YR44 (75YR53)	1% HR	Common distinct fine 75YR58	Many	MDCAB with some CPR	VM	P	P	FVF	-	

Profile Gleyed From: 25 cm

Slowly Permeable Horizon From: 63 cm

Wetness Class: III

Wetness Grade: 3b

Available Water Wheat: 133 mm

Potatoes: 111 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +27 mm

Potatoes: +13 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): We

Remarks: .

RPT97DJ

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 10 (ASP 91)	level	Fallow	Av Rainfall: 774 mm ATO: 1568 day °C	Drift over river gravel
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	18/11/97	ST 2729 3505	SH/PB		TS 0-25 cm H/MCL (S23:Z50: C27%)

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	H/MCL	7.5YR44-46	5% TOTAL HR	-	-	-	-	-	-	CF,VF	-	Clear Smooth
2	40	HZCL	7.5YR44	5% TOTAL ZR	None	None	MDCSAB	FR	M	Good	CVF	-	Abrupt Wavy
3	55	HZCL	10YR64	20% TOTAL, HR ZR	Common distinct fine 75YR56-8	None	MDCSAB	FR	M	Good	FVF	-	Gradual Smooth
4	70	HZCL	5YR44-46 (7.5YR54)	2% ZR	Many distinct medium 75YR58 + 25YR63*1	Many	MDCSAB with some VCSAB and some tendencey towards CPR	FR	M	Variable moderate to low	FVF	-	Sharp Wavy
5	90+	C	25YR34	58% HR, ZR TOTAL (s+d))	0	C(A at top of horizon)	Too Stony	FM	(P)	POOR	FVF	-	

Profile Gleyed From: 40 cm

Slowly Permeable Horizon From: 70 cm

Wetness Class: II

Wetness Grade: 3a

Available Water Wheat: 118 mm

Potatoes: 113 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 12 mm

Potatoes: 15 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: *1 Patches of bleached material 25YR6/3 W borderline II/III (Gleying c 40 cm)

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 11 (ASP 146-129))	1° S	Ley	Av Rainfall: 755 mm ATO: 1567 day °C	Drift over river gravel
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	19/11/97	ST 2864 3473	PB/PRW		TS 0-25 cm MCL (S26: Z51:C23%)

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	25	MCL	75YR44	5% HR (vis)	None	None	-	-	-	-	CF,VF	-	Abrupt Smooth
2	67	HCL	5YR44 (5YR63)	5% HR (vis)	None	Common	MDCSAB	FR	M	M	FF,VF	-	Gradual Smooth
3	90	C	25YR44 (5YR53)	20% HR (vis)	None	Common	WKCSAB	FR	M	P	FF,VF	-	Gradual Smooth
4	95+	C	25YR44-	60% HR (vis)	None	Common	Too stony	-	M	P	None Seen	-	-

Profile Gleyed From: 25 cm

Slowly Permeable Horizon From: 67 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 123 mm

Potatoes: 111 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +12 mm

Potatoes: +13 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: Water in bottom of pit

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 12 (Nr ASP 247)	Level	Permanent Grass	Av Rainfall: 771 mm ATO: 1546 day °C	Burtle Beds
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 166 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	19/11/97	ST 3000 3397	PB/PRW		TS 0 - 25 cm MCL (S27: Z49: C24%)

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	39	MCL	75YR44	5% HR (vis)	None	None	-	-	-	G	MF,VF	-	Gradual Smooth
2	57	HCL	10YR53	5% HR (vis)	10YR56 CDFO	Common	MDMSAB	FR	G	G	FF	-	Clear Smooth
3	90	C	75YR63	30% HR +ZR (vis)	10YR56 MDFO	None	WKCSAB	FR	M	P	FF	-	-

Profile Gleyed From: 39 cm

Slowly Permeable Horizon From: 57 cm

Wetness Class: III

Wetness Grade: 3a

Available Water	Wheat:	134 mm
	Potatoes:	118 mm
Moisture Deficit	Wheat:	106 mm
	Potatoes:	98 mm
Moisture Balance	Wheat:	+28 mm
	Potatoes:	+20 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: Depth of SPL is locally variable. Also gravel content locally variable. Water in pit.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 13 (ASP 229)	1° W	Ley	Av Rainfall: 771 mm ATO: 1546 day °C	Head over Keuper Marl (Burtle beds)
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 166 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	20/11/97	ST 2972 3409	SK/PB		TS 0-25 cm MCL (S32: Z45: C23%)

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	7.5YR43	22% HR (s+d)	0	0	-	-	-	-	MF,VF	-	Gradual Smooth
2	43	HCL	7.5YR43	20% HR (vis)	0	0	MDCSAB	FR	M	G	CF	-	Gradual Smooth
3	53	MCL	7.5YR53 (7.5YR62)	10% HR (vis)	FFMO	F	WKCSAB	FR	M	G	CF	-	Clear Smooth
4	73	C	5YR54 (10YR63)	0	CDMO	F/C	MDCSAB	FR	M	G	FF	-	Abrupt Smooth
5	90	C	2.5YR46	32% HR (s+d)	FFFO	C	WKCSAB	FM	P	P	FVF	-	Clear Smooth
6	95+	C	2.5YR46	16% HR (vis)	FFFO	C	WKCSAB	FM	P	P	FVF	-	Clear Smooth

Profile Gleyed From: 43 - 73 cm

Slowly Permeable Horizon From: 73 cm

Wetness Class: II

Wetness Grade: 2

Available Water Wheat: 114 mm

Potatoes: 100 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +8 mm

Potatoes: +2 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): We

Remarks: F/C

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 14 (ASP 336)	1° N	PGR	Av Rainfall: 776 mm ATO: 1529 day °C	Lower Sandstone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 167 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	26/11/97	ST 2930 3203	HLJ/PB		TS 0-25 cm FSL (S55: Z28: C12%)

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	30	FSL	5YR43	0	0	0	-	-	-	-	-	-	Clear Smooth
2	70	FSL	2.5YR43	0	0	0	WKCSAB	FR	G	G	FVF	-	Gradual Smooth
3	100	LFS	2.5YR44	0	0	0	WKCSAB	VR	M	G	FVF	-	Abrupt Smooth
4	120	C	10R34	0	0	0	WKCSAB	FM	M	G	FVF	-	-

Profile Gleyed From: -

Slowly Permeable Horizon From: -

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	187 mm
	Potatoes:	142 mm
Moisture Deficit	Wheat:	106 mm
	Potatoes:	98 mm
Moisture Balance	Wheat:	+81 mm
	Potatoes:	+44 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s): -

Remarks: Pit dug to 120 cm

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 15 (ASP 322)	1° South	Permanent Grass	Av Rainfall: 776 mm ATO: 1529 day °C	Drift over Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 167 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	26/11/97	ST 2943 3245	HLJ/PB		TS 0-25 cm MSL (S33: Z42: C25%)

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	25	MCL	05YR44	1% HR (vis)	None	None	-	-	-	Good	MF + VF	-	Abrupt Smooth
2	62	M/HCL	05YR54	1% HR (vis)	None	Few	MDCSAB	Friable	Moderate	Good	CF+VF	-	Gradual Wavy
3	80	C	05YR53,64	25% HR (vis)	FDFO (10YR56)	Common	WKCPR	Friable	Moderate	Good *2	CVF	-	
4	105	C	-	25% HR (vis)	FDFO	Many	-	-	-	-	-	-	-
5	115	C	-	0% (vis)	CDFO	Few	-	-	-	Poor	-	-	-

Profile Gleyed From: 62 cm

Slowly Permeable Horizon From: No spl

Wetness Class: I

Wetness Grade: 1

Available Water Wheat: 132 mm

Potatoes: 113 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 26 mm

Potatoes: 15 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Drought

Remarks: *1 Mn appearing higher up (45 cm)
*2 Many small, just >0.5 mm.
Pit dug to 80 cm Augered to 115 cm
Borderline WCII Grade 2.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 16 (ASP 259)	LEVEL	Permanent Grass	Av Rainfall: 771 mm ATO: 1546 day °C	Burtle Beds
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 166 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/92	26/11/97	ST 2955 3385	HLJ/PB		None

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	75YR43	1%> 2cm (vis) 11% < 2 cm (s+d) 12% HR TOTAL	None	None	-	-	-	Good	MF + VF	-	Clear Smooth
2	35	C	75YR54	1% > 2 cm (vis) 16% < 2 cm (s+d) 17% HR TOTAL	None	Few	MDCSAB	Friable	Moderate	Good	CF+VF	-	Gradual Smooth
3	60	C	05YR64	25% HR TOTAL (vis)	CDMO+G (75YR56) (10YR73)	Common	WKCSAB	Friable	Moderate	Good	CF +VF	-	Gradual Wavy
4	105	C	2.5YR54	1%> 2 cm (vis) 55% < 2 cm (s+d) 56% HR TOTAL	CDMO +G (05YR56) 75YR73)	Many*1	WKCSAB	Friable	Moderate	Poor	None	-	-
5	120	C	2.5YR44	0% (vis)	None	Common	-	-	-	Poor	None	-	-

Profile Gleyed From: 35-105 cm

Slowly Permeable Horizon From: 60 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 101 mm

Potatoes: 86 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: -5 mm

Potatoes: 12 mm

Droughtiness Grade: 3a (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Wetness

Remarks: Pit dug to 95, augered to 120
*1 at top of horizon
Spl is dense

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 17 (ASP 290)	3° N	Cereals	Av Rainfall: 774 mm ATO: 1568 day °C	Upper Sandstone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	26/11/97	ST 2846 3342	PB/HLJ		TS 0 -25 cm FSL (SCL): (S55:Z28: C17%)

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	FSL	75YR43	2% HR(vis)	None	None	-	-	-	Good	CF+VF	-	Sharp Smooth
2	47	SCL	25YR46	2% HR (vis)	None	None	MDCSAB	Friable	Moderate	Good	CF+VF	-	Gradual Smooth
3	72	C(SC)	2.5YR44	0% (vis)	None	Few	WKCSAB	Friable	Moderate	Good	FF+VF	-	Gradual Smooth
4	95	C	2.5YR43	0% (vis)	None	None	MDCPR	Firm	Poor	Good	FF +VF	-	-

Profile Gleyed From: Not gleyed

Slowly Permeable Horizon From: No spl

Wetness Class: I

Wetness Grade: 1

Available Water Wheat: 132 mm

Potatoes: 113 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: 26 mm

Potatoes: 15 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Drought

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 18 (ASP 268)	2° N	Pots	Av Rainfall: 755 mm ATO: 1567 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	26/11/97	ST 2888 3367	HLJ/PB		None

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	31	HCL	75YR44	1% HR (vis)	0	0	-	-	-	-	-	-	Clear Smooth
2	70	C	2.5YR46	0	0	F	MDCPR	FM	P	P	FVF	-	Gradual Smooth
3	95+	C	2.5YR46 with TGM 5G71	0	0	0	WKMSAB	VM	P	P	FVF	-	

Profile Gleyed From: -

Slowly Permeable Horizon From: 31- 70 cm

Wetness Class: III

Wetness Grade: 3b

Available Water Wheat: 130 mm

Potatoes: 107 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +24 mm

Potatoes: +9 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): We

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 19 (ASP 152)	Level	Cereal	Av Rainfall: 755 mm ATO: 1567 day °C	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/27	26/11/97	ST 2940 3466	HLJ/PB		None

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	26	C	10YR53	0% (vis)	CDFO (10YR56)	Few	-	-	-	Good	CF+VF	-	Clear Smooth
2	39	C	75YR62	0% (vis)	MDFO (10YR58)	Common	WACAB	Firm	P	Poor	CF + VF	-	Clear Smooth
3	110+	LPT/PT	10YR31	0% (vis)	FDFO (10YR56)	None	-	-	-	-	-	-	-

Profile Gleyed From: Surface

Slowly Permeable Horizon From: 26- 39 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water Wheat: mm

Potatoes: mm

Moisture Deficit Wheat: mm

Potatoes: mm

Moisture Balance Wheat: mm

Potatoes: mm

Droughtiness Grade: (Calculated to cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks: Pit dug to 70 cm augered to 110 cm
*1 becoming peatier with depth
Water at 28 cm.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 20 (ASP 184-5)	2° N	Oil Seed Rape	Av Rainfall: 774 mm ATO: 1568 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 171 *Climatic Grade:* 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	27/11/97	ST 2862 3437	HLJ/PB		None

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	HCL	7.5YR44	1% HR (vis)	None	None	-	-	-	Good	F + VF	-	Sharp Wavy
2	50	C	05YR46 (05YR54) 5G71	0% (vis)	None	Common	MDCPr (breaking to WKMAB)	Firm	Poor	Poor	CF+VF	-	Gradual Smooth
3	90	C	2.5YR44, 46	0% (vis)	None	Few [*1]	WKMSAB	Firm	Moderate	Poor	FVF	-	

Profile Gleyed From: Not gleyed

Slowly Permeable Horizon From: 24- 50 cm

Wetness Class: III

Wetness Grade: 3b

Available Water	Wheat:	133 mm
	Potatoes:	109 mm
Moisture Deficit	Wheat:	106 mm
	Potatoes:	98 mm
Moisture Balance	Wheat:	27 mm
	Potatoes:	11 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks: Water entering pit over top of H2
[1*] at top of horizon

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 21 (ASP 143)	1° E	CER	Av Rainfall: 774 mm ATO: 1568 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 168 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	27/11/97	ST 2817 3465	HLJ/PB		None

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	28	MCL	7.5YR54	0	0	0	-	-	-	-	CF,VF	-	Clear Smooth
2	53	HCL	7.5YR63	20% HR (vis)	CDFO 10YR66	C	MDCSAB	FM	M	G	FF,VF	-	Clear Wavy
3	85+	C	2.5YR44 (7.5YR63)	0	CDMG 75YR63	C	WKCPR	VM	P	P (low)	FVF	-	

Profile Gleyed From: 28 cm

Slowly Permeable Horizon From: 53 cm

Wetness Class: III

Wetness Grade: 3a

Available Water Wheat: 128 mm

Potatoes: 105 mm

Moisture Deficit Wheat: 106 mm

Potatoes: 98 mm

Moisture Balance Wheat: +22 mm

Potatoes: +7 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): We

Remarks: H2 stones mainly in lower part of horizon
H3 Pores mainly few large worm channels

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Bridgwater South	Pit 22 (ASP 252)	3° East	OSR	Av Rainfall: 755 mm ATO: 1567 day °C	Keuper Marl
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 164 Climatic Grade: 1 Exposure Grade: 1	PSD SAMPLES TAKEN
71/97	27/11/97	ST 2857 3384	HLJ/PB		None

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	30	HCL	7.5YR43	2% HR (vis)	None	None	-	-	-	Good	FF + VF	-	Abrupt Wavy
2	40	C	05YR54 (7.5YR64)	5% HR (vis)	CFFO (05YR56)	Common	WKCSAB	Friable	Moderate	Good[*1]	FVF	-	Gradual Smooth
3	80+	C	2.5YR46 (5YR54)	0% HR (vis)	CDFO[*2] (5YR56)	Few	WKCAB	Firm	Poor	Poor	FVF	-	

Profile Gleyed From: 30 cm

Slowly Permeable Horizon From: 40 cm

Wetness Class: IV

Wetness Grade: 3b

Available Water	Wheat:	130 mm
	Potatoes:	107 mm
Moisture Deficit	Wheat:	106 mm
	Potatoes:	98 mm
Moisture Balance	Wheat:	24 mm
	Potatoes:	9 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wetness

Remarks: [1*] borderline with few large which extend into top of H3
[*2] in patches
Water running in below topsoil in trash