

**LAND AT RYEHILL,  
LONG BUCKBY, NORTHAMPTONSHIRE**

**SOILS  
AND  
AGRICULTURAL  
LAND CLASSIFICATION**

**S G McRae  
Wye  
Ashford  
Kent  
TN25 5BB**

**January 1998**

# LAND AT RYEHILL, LONG BUCKBY, NORTHAMPTONSHIRE

## SOILS AND AGRICULTURAL LAND CLASSIFICATION

### SUMMARY

This 55.7 hectare site has three main soil types linked closely to the geology as shown on the published 1:50,000 geological map. They represent a simplification of the five different soil series shown on the published 1:25,000 Soil Survey of England & Wales soil map covering the site, but agree with that map in terms of their relative distribution. The three soil types are Soil Type A, well drained sandy loams over sand and gravel, Soil Type B, imperfectly and moderately well drained loamy soils and Soil Type C, poorly drained clayey soils in alluvium. The well drained sandy soils (Soil Type A) are found on the higher parts of the two hills along the north-eastern side of the site. They give Grade 2 land, the main limitation being a slight tendency to droughtiness. On the lower slopes there are loamy soils over clay (Soil Type B). These range in drainage status from Wetness Class II to III, broadly equivalent to moderately well drained to imperfectly drained. The ALC grades correspondingly range from Grade 2 (soils in Wetness Class II) to Subgrade 3a (Wetness Class III) except for the field in the extreme south-west corner which is graded 3a/b because of the additional limitation imposed by a marked rig-and-furrow microtopography. The poorest, Subgrade 3b, land is on the poorly drained clayey alluvium (Soil Type C) on the lowest, flattest ground and where there is a gradient limitation on short lengths of steep slopes on the flanks of the eastern hills. Thus there is Grade 2 over most of higher ground, with a zone of 3a on the lower slopes marking a transition to the Subgrade 3b on the clayey alluvial valley floor. There are some steep, 3b grade slopes and, in the south-east corner, land graded 3a/b because of an additional microtopography limitation. The areas and percentages of the grades shown on the accompanying ALC map, are as follows:-

	ha	%
Grade 2	24.5	44.0
Subgrade 3a	7.9	14.1
Subgrade 3a/b	4.5	8.1
Subgrade 3b	17.2	30.9
Buildings, tracks & watercourses	1.6	2.9
	55.7	100.0

} 66% brv.

It is recommended that, if the site is worked for gravel, the soil materials from the three soil types should be kept separate. The topsoil and subsoil materials should be kept separate and, in the case of Soil Types A and B, the more loamy upper subsoil should be kept separate from the poorer quality, often more stony lower subsoil.

# LAND AT RYEHILL, LONG BUCKBY, NORTHAMPTONSHIRE

## SOILS AND AGRICULTURAL LAND CLASSIFICATION

### 1 INTRODUCTION

- 1.1 This report describes the soils and Agricultural Land Classification (ALC) of 55.7 hectares (138 acres) of land at Ryehill, Long Buckby, Northamptonshire.
- 1.2 It is based on a study of published information (see Appendix 1) and a site inspection carried in December 1997 when 60 auger borings were made at the locations shown on SGM 1. Three small inspection pits were also dug. Auger boring descriptions are given in Appendix 2 and a soil map is attached as SGM 2.
- 1.3 Land quality has been assessed using the revised guidelines and criteria for the Agricultural Land Classification system introduced in January 1989. An ALC map is attached as SGM 3.
- 1.4 The rest of this report deals in turn with a general description of the site including its location, land use, topography and climate (Section 2), the geology and soils (Section 3) and the detailed Agricultural Land Classification (Section 4). Section 5 discusses the soil resources for restoration.

### 2 SITE DESCRIPTION

#### Location and Land Use

- 2.1 The site lies between the A5 which forms the south-western boundary and the London to Birmingham railway line which forms the north-eastern boundary. The northern boundaries are field boundaries to further agricultural land. There is also agricultural land to the south, partly the continuation of a large arable field across which part of the southern boundary is an imaginary line.

- 2.2 Ryehill Lodge and associated buildings are located near the north-west corner of the site and an access track runs from the A5 through these and across the railway.
- 2.3 The northern part of the site consists of nine small fields all under permanent grass. The southern half is bisected by a watercourse, to the east of which is a large arable field growing oilseed rape at the time of survey. The land to the west of the watercourse consists of three permanent grass fields, the one at the south-west corner having a marked rig-and-furrow microtopography.

### Topography

- 2.4 There are two hills along the north-eastern boundary, a larger, higher one in the north rising to over 120m AOD and a more subdued one in the south reaching to just over 110m. These grade down to the flat low-lying valley bottom of the watercourse mentioned above at about 100m. The low, flat land extends eastwards to form a break between the two hills. The land rises again slightly in the south-west corner. Most of the gradients are moderate to gentle but there are some places where the slopes are in excess of 7°.

### Climate

- 2.5 The climatic information needed to apply the Agricultural Land Classification system has been obtained from the Met Office's standard 5km grid point data set for a representative point near the middle of the site and is as follows:-

Reference Point:-	SP 605665
Altitude (m):-	105
Average Annual Rainfall AAR (mm):-	680
Accumulated Temperature ATO (day degrees):-	1365
Moisture Deficit for wheat (mm):-	99
Moisture Deficit for potatoes (mm):-	88
Field Capacity Duration (days):-	151

- 2.6 There are no inherent climatic limitations, but the climate verges on the moist side with a relatively long field capacity duration over the winter but, conversely, only a moderate moisture deficit in the summer.

### 3 GEOLOGY AND SOILS

#### Published Information

- 3.1 According to the geological map (Sheet 185) at 1:50,000, the underlying solid geology is the Middle and Lower Lias clays and silts, but these are largely hidden by a covering of superficial drifts, including glacial sand and gravel and alluvium.
- 3.2 The main occurrence of sand and gravel is on the higher ground in the east, and this has been confirmed by a detailed geological survey carried out by Terry Adams Ltd. The lower slopes and the field in the extreme south-west corner are also shown on the published geological map as gravels, but the detailed geological survey records mainly gravelly clay in these areas and the published soil map (see below) also implies that true sand and gravel is largely absent from these areas.
- 3.3 The flat valley bottom is shown on the published geological map as alluvium, though the small area extending eastwards between the two gravel hills is shown as drift free Lower Lias clay rather than alluvium.
- 3.4 A 1:25,000 soil map (Sheet SP66 Long Buckby), covering the site, has been published by the Soil Survey of England and Wales. This shows five main kinds of soils, related to the various drifts described above.
- 3.5 On the sand and gravel hills in the east, the soil map shows the well drained, sandy, Sutton series. The lower slopes of the hills and the field on the slightly rising ground in the extreme south-west are shown as Oxpasture and Rowsham series. These are generally similar and are developed in a relatively thin covering of loamy drift over Lias sediments, implying a lack of gravel in these areas. They differ in their drainage status. The alluvium in the valley bottom is shown mainly as the poorly drained clayey Fladbury series and a slightly better drained analogue, the Wyre series.

### Site Inspection

- 3.6 The site inspection generally *confirmed* the published soil map, particularly in respect of the basic divisions between the relatively light textured and well drained soils over the gravels (Sutton series), the heavy and wet soils on the alluvium (Fladbury and Wyre series) and the intervening areas of loamy over clayey soils (Oxpasture and Rowsham series).
- 3.7 It was felt, however, that the distinctions between the Fladbury and Wyre series and between the Oxpasture and Rowsham series are not worth making. Also, it was debatable as to whether or not any substantial area of the Wyre series actually exists.
- 3.8 Accordingly a simplified soil nomenclature can be adopted for the accompanying detailed soil map of the site (SGM 2). The pit and profile descriptions in Appendix 2 are also arranged according to these soil types:-

Soil Type A - Well drained sandy loams over sand and gravel

Soil Type B - Imperfectly and moderately well drained loamy soils

Soil Type C - Poorly drained clayey soils in alluvium

### Soil Type A

- 3.9 Soil Type A consists of well drained soils (Wetness Class I) developed in a thin covering of relatively light textured loamy material over sand and gravel. A typical profile has a slightly stony, medium sandy loam topsoil over a similarly textured subsoil, becoming sandier and stonier with depth and usually passing into impenetrable gravel within about 60cm of the surface.

### Soil Type B

- 3.10 Soil Type B usually has heavier textures than Soil Type A, consisting of a medium clay loam or sandy clay loam topsoil, becoming more clayey with depth. True Lias Clay was encountered at depth in only a few profiles. Many profiles could not be penetrated to full depth because of stoniness, but this was not thought to indicate underlying gravel.

- 3.11 All the Soil Type B soils have colour mottling in some part of their profile, indicating impeded drainage due to the presence of a slowly permeable layer at depth. Depending on the extent of mottling and the depth to the slowly permeable layer, these soils are in Wetness Class II or III, broadly equivalent to moderately well or imperfectly drained respectively.

#### Soil Type C

- 3.12 These soils, developed in clayey alluvium, have much heavier textures than the other soils on the site. They are almost entirely stoneless and are poorly drained (Wetness Class IV). A typical profile under grass has a thin clayey topsoil over a grey or greyish brown mottled, stiff clay subsoil.

## 4 AGRICULTURAL LAND CLASSIFICATION

### Published Information and Previous Surveys

- 4.1 The published 1:63 360 ALC map (Sheet 133) shows the entire site as undifferentiated Grade 3, although nearby areas of glacial sands and gravels e.g. on the other side of the A5 immediately opposite the site as Grade 2. There is no accompanying report to indicate where within Grade 3 any of the land on the site is considered to lie.
- 4.2 The published soil map is accompanied by an assessment of land quality according to the now obsolete Land Use Capability System (LUCC). The Classes of this system are broadly equivalent in both concept and definition to ALC Grades, except that Class/Grade 3 is not subdivided according to relative quality within that Class/Grade
- 4.3 The LUCC gradings are closely related to the geology and soil pattern described above. These relationships can be summarised as follows:-

Class 2 - Areas of freely drained gravels (Sutton series/Soil Type A) and the better drained of the loamy soils (Oxpasture series/Soil Type B)

Class 3 - The less well drained loamy soils (Rowsham series/Soil Type B)

Grade 4 - The alluvium (Fladbury and Wyre series/Soil Type C)

#### Revised Guidelines and Criteria

- 4.4 Since the published maps were drawn up the ALC system has also been significantly revised, particularly in respect of soil droughtiness and wetness, and the soil-climate interactions affecting these. Many of the revisions are based on concepts originally developed as part of the LUCC system. The Revised Guidelines and Criteria for the Agricultural Land Classification were introduced in January 1989, and the following discussion of the ALC is based on these.
- 4.5 The main limitation of Soil Type A over sand and gravel is droughtiness while the alluvial soils (Soil Type C) and, to a lesser extent, the loamy soils (Soil Type B) are affected mainly by the contrasting limitation of wetness. A few areas have an over-riding gradient limitation.
- 4.6 All the profiles of Soil Type A, the well drained sandy soils over sand and gravel, have a moisture holding capacity which qualifies them for Grade 2. Some of the deepest ones verge on Grade 1. Even those with gravel relatively close to the surface also qualify for Grade 2 although verging on Subgrade 3a. Some of the slopes on the edge of the areas of Soil Type A are downgraded to 3b because of gradients in excess of 7°.
- 4.7 Soil Type B gives either Grade 2 land where drainage is reasonably good (Wetness Class II), but Subgrade 3a where the drainage is poorer (Wetness Class III). Although most of the individual profiles in the field in the extreme south-west would indicate a grading of 3a, there is a marked rig-and-furrow micro-topography. This would, at least initially, make it difficult to convert this land to arable cropping which is implicit in a grading of 3a. Accordingly, and to signify this additional limitation, this area has been graded 3a/b.



4.8 The combination of poor drainage (Wetness Class IV) and heavy textures requires the areas of alluvium (Soil Type C) to be graded no higher than Subgrade 3b.

**Overall ALC**

4.9 Appendix 2 gives the appropriate ALC gradings for each of the auger boring locations and the ALC map (SGM 3) is based on this.

4.10 The picture which emerges is of Grade 2 over most of higher ground, with a zone of 3a on the lower slopes marking a transition to the Subgrade 3b on the clayey alluvial valley floor. There are some steep, 3b grade slopes and, in the south-east corner, land graded 3a/b because of an additional microtopography limitation.

4.11 The areas and percentages of the grades shown on the accompanying ALC map, are as follows:-

	ha	%
Grade 2	24.5	44.0
Subgrade 3a	7.9	14.1
Subgrade 3a/b	4.5	8.1
Subgrade 3b	17.2	30.9
Buildings, tracks & watercourses	<u>1.6</u>	<u>2.9</u>
	55.7	100.0

**5 SOIL RESOURCES FOR RESTORATION**

5.1 The following assumes that all the soils on the site may be disturbed by mineral extraction to a greater or lesser extent, although it is probable that areas of Soil Type B and C, where there is little or no underlying gravel, may remain largely undisturbed.

5.2 The three soil types are sufficiently different that they should be separately handled. The topsoil and subsoil materials should be kept separate and, in the case of Soil Types A and B, the more loamy upper subsoil should be kept separate from the poorer quality, often more stony lower subsoil.

5.3 On the basis of the above, the following topsoil resources can be recognised:-

- T1 Medium sandy loam topsoils from Soil Type A (average thickness 27cm)
- T2 Medium clay loam and sandy clay loam topsoils from Soil Type B (average thickness 26cm)
- T3 Clayey topsoils from Soil Type C (average thickness 16cm on grassland areas, 27cm on arable areas)

5.4 The corresponding subsoil types are as follows:-

- US1 Medium sandy loam and loamy medium sand upper subsoils from Soil Type A (average thickness about 50cm i.e. from 27 to 77cm from the original ground surface)
- LS1 Stony loamy medium sand and sand (occasionally with clayey seams), lower subsoils from Soil Type A (average thickness about 43cm i.e. from 77 to 120cm from the original ground surface)
- US2 Sandy clay loam, medium clay loam and heavy clay loam upper subsoils from Soil Type B (average thickness about 34cm i.e. from 26 to 60cm from the original ground surface)
- LS2 Clayey (clay or sandy clay), usually stony, lower subsoils from Soil Type B (average thickness about 60cm i.e. from 60 to 120cm from the original ground surface)
- S3 Clayey subsoil from areas of Soil Type C (average thickness 104cm on grassland areas, 93cm on arable areas assuming such subsoil material would be stripped to an overall depth of 1.2m)

## APPENDIX 1 - PUBLISHED INFORMATION CONSULTED

Geological Survey, Sheet 185 (Northampton) 1:50,000.

Soil Survey of England and Wales, Soil Survey Record No. 54 Soils in Northamptonshire I, Sheet SP 66 (Long Buckby) 1: 25,000 and accompanying Land Use Capability Classification map.

Agricultural Land Classification, Sheet 133 (Northampton) 1: 63.360.

Agricultural Land Classification of England and Wales. *Revised guidelines and criteria for grading the quality of agricultural land.* October 1988.

The Met. Office. *Climatological data for Agricultural Land Classification.* January 1989.

## APPENDIX 2 - PIT AND AUGER BORING DESCRIPTIONS

### Notes

1. All depths are measured in cm. from the surface.

2. Colours and mottling are abbreviated

B - Brown  
DB - Dark brown  
DGB - Dark greyish brown  
G - Grey  
GB - Greyish brown  
YB - Yellowish brown

fnt - faint  
g - grey  
gb - greyish brown  
rb - reddish brown  
o - ochreous

3. Textures are abbreviated:-

c - clay  
csl - coarse sandy loam  
hcl - heavy clay loam  
lcs - loamy coarse sand  
lms - loamy medium sand  
mcl - medium clay loam  
msl - medium sandy loam  
sc - sandy clay  
scl - sandy clay loam

**SOIL TYPE A - WELL DRAINED SANDY LOAMS OVER SAND & GRAVEL**

**Pit A near auger location 5**

- 0 - 27cm Dark brown; medium sandy loam; about 10-15% hard stones, about 5% > 2cm; moderately developed fine and medium crumb structure; moist (recent rain); friable; occasional worms; common roots (Topsoil)
- 27 - 50cm Brown; medium sandy loam; 10-15% stones as above; weakly developed medium subangular blocky structure; moist; friable; rare worms observed, but common worm channels; occasional roots. (Subsoil)
- 50 - 70cm Brown; sandy clay loam; 10-15% stones as above; weakly to moderately developed medium and coarse subangular blocky structure; slightly moist; friable to firm; no worms observed; rare roots. (Subsoil)
- 70 + cm By auger to 80cm; as above, but 20+ % stones (Transition to Mineral)

Soil Type A; Wetness Class I; ALC Grade 2

Similar Soil Type A profiles are as follows (all Wetness Class I):-

No.	Depth	Colour & Mottles	Texture	% Stones	ALC Grade
2	0 - 25	DB	msl	10	2
	25 - 55	B	msl/csl	10	
	55 - 65	B	csl	10/15	
	65 - 70	B	lcs	10/15	
	70 +	Imp			
3	0 - 24	DB	msl	5	2
	24 - 80	B	msl	5	
	80 +	Imp			
4	0 - 26	DB	msl	5	2
	26 - 40	B	msl	5	
	40 - 50	B	scl	15	
	50 +	Imp			
5	0 - 24	DB	msl	10	2
	24 - 55	B	msl/csl	10	
	55 +	Imp			
6	0 - 23	DB	msl	5/10	2
	23 - 60	B	msl/csl	5/10	
	60 - 65	B	lcs	15	
	65 +	Imp			
7	0 - 27	DB	msl	5	2
	27 - 65	B	msl/scl	5	
	65 - 70	B	scl	gritty	
	70 +	Imp			

No.	Depth	Colour & Mottles	Texture	% Stones	ALC Grade	
<b>Soil Type A - Well drained sandy loams over sand &amp; gravel (continued)</b>						
8	0 - 26	DB	msl	5		
	26 - 75	B	msl	5		
	75 - 80	B	lms	5		
	80 +	Imp			2	
9	0 - 26	DB	msl	<5		
	26 - 55	B	msl	<5		
	55 - 85	B	lms	<5		
	85 - 105	B	lms + clayey	<5		
	105+	B	ms	5	2	
10	0 - 23	DB	msl	5		
	23 - 45	B	msl	5		
	45 - 70	B	scl	5		
	70 - 100	B	mcl	5		
	100+	B	msl	5	2	
11	0 - 25	DB	msl	5		
	25 - 30	B	msl	5		
	30 - 45	B	scl	5		
	45 - 55	B	msl	5		
	55 - 75	B	lms	5		
	75 - 90	B	o	scl	5	
	90 - 95	B	o	csl	10 (small)	
	95 +	Imp				2
15	0 - 25	DB	msl	<5		
	25 - 65	B	msl	<5		
	65 - 90	B	lms	0		
	90 +	B	ms	0	2	
16	0 - 24	DB	msl	5/10		
	24 - 50	B	msl	10		
	50 +	Imp			3b (slope)	
23	0 - 30	DB	msl	5/10		
	30 - 60	B	msl	5/10		
	60 - 70	B	lms	5		
	70 - 95	B	msl	5		
	95 +	B	lms	5	2	
33	0 - 27	DB	msl	5		
	27 - 60	B	msl	5		
	60 - 85	B	lms	5		
	85 - 100	B	o	scl	5	
	100+	B	lms	<5	2	

No.	Depth	Colour & Mottles	Texture	% Stones	ALC Grade
<b>Soil Type A - Well drained sandy loams over sand &amp; gravel (continued)</b>					
34	0 - 30	DB	msl	<5	2
	30 - 45	B	msl	<5	
	45 - 65	B	lms	<5	
	65 - 75	B	msl	<5	
	75 -105	B	lms + clayey	<5	
	105+		lms/lcs	<5	
35	0 - 32	DB	scl	5	2
	32 - 35	B	scl	5	
	35 - 40	B	msl	5	
	40 +	B	ms (calc)	0	
36	0 - 30	DB	msl	<5	2
	30 - 40	B	lms	<5	
	40 +	B	ms	0	
37	0 - 31	DB	msl	5	2
	31 - 80	B	msl + sandy	5	
	80 +	B	lms	<5	
46	0 - 28	DB	msl/scl	5	2
	28 - 60	B	msl/scl	5	
	60 - 100	B	csl/scl	10/15	
	100+	B	lcs	0	
47	0 - 27	DB	scl	5/10	2
	27 - 60	B	scl	5/10	
	60 +	B	csl/scl	5	

### **SOIL TYPE B - IMPERFECTLY & MODERATELY WELL DRAINED LOAMY SOILS**

#### **Pit B near auger location 48**

0 - 31cm	Dark brown; sandy clay loam; less than 5% hard stones; weakly developed fine and medium subangular blocky structure; moist (recent rain); friable to firm; occasional worms; occasional roots (oilseed rape) (Topsoil)
31 - 65cm	Brown; sandy clay loam; about 5-10% hard stones; weakly developed fine and medium subangular blocky structure; moist; firm; occasional worms; rare old roots. (Subsoil)
65 - 95cm	Brown with common distinct small ochreous mottles; sandy clay loam; about 5-10% small hard stones; very weakly developed medium subangular blocky structure; moist; firm to plastic. (Subsoil)
95 + cm	Grey; clay; stoneless; massive; stiff, plastic

Soil Type B; Wetness Class II; ALC Grade 2

Similar Soil Type B profiles are as follows (all Wetness Class I):-

No.	Depth	Colour & Mottles	Texture	Wetness Class	ALC Grade
1	0 - 24 24 - 45 45 +	DGB o GB o & g G rb	hcl hcl c, stiff	IV	3b
(probably a single isolated boring of a different soil type, developed directly in clay, but included as a Soil Type B for convenience)					
12	0 - 26 26 - 55 55 - 60 60 +	DB B GB o Imp	msl scl sc, stony	II	2
13	0 - 24 24 - 45 45 - 55 55 - 60 60 - 80 80 +	DB B B B YB o YB o	msl scl msl scl scl sc	II	2
14	0 - 23 23 - 60 60 - 75 75 - 90 90 +	DB B B GB o YB o	msl msl msl/scl scl sc	II	2
17	0 - 27 27 - 50 50 - 60 60 +	DB B B o Imp	scl scl scl, stony	II	2
18	0 - 25 25 - 35 35 - 60 60 +	DGB GB o & rb GB o & g Imp	mcl hcl hcl	III	3a
19	0 - 25 25 - 55 55 - 75 75 +	DGB o GB o YB o G o	hcl hcl sc c	III	3a
20	0 - 20 20 - 35 35 - 45 45 - 65 65 +	DB B B o B o & g G o	mcl mcl hcl c c	III	3a
21	0 - 26 26 - 50 50 - 70 70 +	DGB B B GB o	mcl mcl hcl sc	II	2
Wet hollow nearby					



No.	Depth	Colour & Mottles	Texture	Wetness Class	ALC Grade
<b>Soil Type B - Imperfectly &amp; moderately well drained loamy soils (continued)</b>					
22	0 - 24	DGB o	mcl		
	24 - 45	B o & g	hcl		
	45 +	GB o	sc	III	3a
In mid-point of a rig and furrow microtopography					
24	0 - 28	DGB	scl		
	28 - 45	B	scl		
	45 - 85	B o & g	scl		
	85 +	YB o & g	c, soft	II	2
26	0 - 27	DGB fnt o	scl		
	27 - 50	GB o	scl		
	50 - 65	GB o	hcl		
	65 - 70	GB o & g	c		
	70 +	Imp		III	3a
27	0 - 25	DGB fnt o	mcl/scl		
	25 - 35	B	mcl		
	35 - 55	GB o	hcl		
	55 - 65	GB o & g	c		
	65 - 70	GB o & g	sc, stony, wet		
	70 +	Imp		III	3a
32	0 - 28	DGB	scl		
	28 - 45	B	scl		
	45 - 55	GB o	scl		
	55 - 90	GB o	sc, soft		
	90 +	G o & rb	c, stiff	III	3a
45	0 - 29	DGB	scl		
	29 - 45	B	scl		
	45 - 80	B o	sc		
	80 +	G o & rb	sc, soft	III	3a
48	0 - 32	DB	scl		
	32 - 40	GB o & g	scl		
	40 +	GB o & g	sc	III	3a
52	0 - 26	DGB	mcl		
	26 - 40	GB o	mcl		
	40 - 70	G o	mcl/scl		
	70 +	G o & rb	c	III	3a/b
On mid-point of a rig & furrow microtopography					
53	0 - 24	DB	msl		
	24 - 35	B	msl		
	35 - 65	B	msl/scl		
	65 - 95	GB o	msl		
	95 +	GB o	msl, v wet	II?	3a/b
On mid-point of a rig & furrow microtopography Could be classed as an isolated wet variant of Soil Type A					

No.	Depth	Colour & Mottles	Texture	Wetness Class	ALC Grade
-----	-------	------------------	---------	---------------	-----------

**Soil Type B - Imperfectly & moderately well drained loamy soils (continued)**

54	0 - 26	DB		msl	III?	3a/b
	26 - 60	B		scl		
	60 - 80	B	o	scl, wet		
	80 - 85	G	o	scl, wet, gravelly		
	85 +	G	o	c, stiff		
On mid-point of a rig & furrow microtopography						
58	0 - 32	DB		msl	II	2
	32 - 60	G	rb	msl		
	60 - 85	G	o	scl		
	85 +	G	o	sc		
Unusually sandy surface horizons						
59	0 - 26	DB		scl	III	3a/b
	26 - 55	GB	o & g	scl		
	55 - 65	G	o	scl, wet, gravelly		
	65 +	G	o & rb	c		
On mid-point of a rig & furrow microtopography						
60	0 - 24	DGB		hcl	IV	3b
	24 - 35	GB	o & g	hcl		
	35 +	G	o	sc/c		
On mid-point of a rig & furrow microtopography						

**SOIL TYPE C - POORLY DRAINED CLAYEY SOILS IN ALLUVIUM**

**Pit C near auger location 51**

0 - 20cm	Dark greyish brown with common distinct medium ochreous mottles; clay; stoneless; well developed fine angular blocky structure; moist; firm; no worms observed; common roots. (Topsoil)
20 - 25cm	Grey with common distinct medium ochreous and grey mottles; clay; stoneless; moderately developed medium angular blocky structure; moist to wet (Seepage of water into pit from base of this horizon; firm; no worms; occasional roots. (Subsoil)
25 + cm	Grey with common distinct large ochreous mottles; clay; stoneless; massive; slightly moist (drier than above); firm to plastic; no worms; no roots (Subsoil)

Soil Type C; Wetness Class IV; ALC Subgrade 3b

- Similar Soil Type C profiles are summarised below, giving topsoil depths overlying a greyish mottled clay

No.	Topsoil (heavy clay loam to clay) DGB with o mottles	Subsoil (clay) GB with o & g mottles becoming greyer with depth; or G with o & gb mottles	Wetness Class	ALC Grade
25	0 - 20	20 +	IV	3b
28	0 - 12	12 +	IV	3b
29	0 - 18	18 +	IV	3b
30	0 - 15	18 +	IV	3b
31	0 - 26	26 +	IV	3b
38	0 - 28	28 + (v wet)	IV	3b
39	0 - 16	16 +	IV	3b
40	0 - 17	17 +	IV	3b
41	0 - 12	12 +	IV	3b
42	0 - 13	13 +	IV	3b
43	0 - 14	14 +	IV	3b
44	0 - 26	26 +	IV	3b
49	0 - 27	27 +	IV	3b
50	0 - 17	17 +	IV	3b
51	0 - 16	16 +	IV	3b
55	0 - 15	18 +	IV	3b
56	0 - 15	18 +	IV	3b
57	0 - 26	26 +	IV	3b