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**MILTON KEYNES LOCAL PLAN  
Potential Development Area 5, North**

**Agricultural Land Classification  
Semi-Detailed Survey  
ALC Map and Report**

**June 1997**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

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# AGRICULTURAL LAND CLASSIFICATION REPORT

## MILTON KEYNES LOCAL PLAN, POTENTIAL DEVELOPMENT AREA 5, NORTH

### SEMI-DETAILED SURVEY

#### INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 57 ha of land south of Bow Brickhill station and north of the A5, on the south-eastern edge of Milton Keynes in Buckinghamshire. The survey was carried out during June 1997.

2. The work was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with MAFF's statutory input to the Milton Keynes Local Plan. The site had previously been surveyed at a reconnaissance level of detail in March 1991 (FRCA reference 0304/005/91). At that date, the southern section was left unsurveyed due to problems with access. For this current assessment, the southern 'gap' has been surveyed in detail and added to the existing reconnaissance information to produce a semi-detailed ALC map covering the whole site.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey, the land use was a mixture of grassland and arable (mostly oilseed rape). The areas mapped as 'Other' include the agricultural buildings associated with Crossroads Farm, and small areas of scrub and woodland.

#### SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000; it is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

7. The fieldwork was conducted at an average density of 1 boring per 2 hectares. A total of 28 borings and 2 soil pits was described for the whole site.

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<sup>1</sup> FRCA is an executive agency of MAFF and the Welsh Office

**Table 1: Area of grades and other land**

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	13.4	23.9	23.5
3b	40.1	71.6	70.5
4	2.5	4.5	4.4
Other land	0.9	N/A	1.6
Total surveyed area	56.0	100	98.4
Total site area	56.9	-	100

8. The agricultural land along the south-western boundary (the A5) has been classified as Subgrade 3a (good quality) with soil wetness as the main limiting factor. Generally, medium textured topsoils overlie subsoils that become heavier with depth and which may contain poorly structured subsoil horizons which impede the drainage. The soils vary over relatively short distances and in this overall map unit of Subgrade 3a individual borings of Grade 2 or Subgrade 3b do occur.

9. The majority of the site has been classified as Subgrade 3b, again with soil wetness as the most limiting factor. Here, heavier topsoils directly overlie clay subsoils that significantly restrict the drainage. This degree of wetness will restrict the flexibility of this land in terms of the number of days when it is suitable for trafficking, grazing or cultivation without causing structural damage.

10. A small area of Grade 4 (poor quality agricultural land) has been mapped in the field north of Crossroads Farm. This is an area that has been disturbed in the past and now contains anaerobic and poorly structured clay subsoils, giving rise to a wetness/workability limitation that restricts the land use mostly to grass.

## **FACTORS INFLUENCING ALC GRADE**

### **Climate**

11. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

13. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

**Table 2: Climatic and altitude data**

Factor	Units	Values
Grid reference	N/A	SP 896 345
Altitude	m, AOD	75
Accumulated Temperature	day°C (Jan-June)	1406
Average Annual Rainfall	mm	630
Field Capacity Days	days	132
Moisture Deficit, Wheat	mm	108
Moisture Deficit, Potatoes	mm	100
Overall climatic grade	N/A	Grade 1

15. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation affecting the site. The area is, however, relatively warm and dry and, consequently, the soils will need a moderately high available water capacity to avoid drought stress affecting the crops during parts of the growing season. The site is not particularly exposed or prone to increased frost risk and, consequently, there are also no local climatic restrictions to the grading of this land. The site is, therefore, climatically Grade 1.

#### **Site**

16. The site is gently sloping throughout with altitudes in the range 70–75 metres. Nowhere on the site do gradient, microrelief or flooding impose any significant limitation on the agricultural quality of the land.

#### **Geology and soils**

17. The published geology map for the area (BGS, 1992) shows a mixture of geologies, with mostly Oxford Clay in the north with head, alluvium and river terrace deposits in the south.

18. The 1:250,000 scale reconnaissance soil map (SSEW, 1983) for the area shows the site to comprise soils of the Oxpasture association. These soils are described as “fine loamy over clayey and clayey soils with slowly permeable subsoils and slight seasonal waterlogging” (SSEW, 1984). Soils of this general nature were found across the site.

#### **AGRICULTURAL LAND CLASSIFICATION**

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

20. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II.

### **Subgrade 3a**

21. The southern section of the site has been placed in this subgrade, and relates to good quality agricultural land. Soil wetness is the significant limiting factor here, though the soils are actually quite variable over short distances. The pit, for example, 1P, is actually classified as Grade 2 but has a Subgrade 3b boring quite close by in addition to some Subgrade 3a borings. As a result, this area has been conservatively classified as Subgrade 3a. The wetness is related to shallow gleying and the presence of clay subsoil horizons; some of these may be slowly permeable although the pit is described as having a moderately developed coarse sub-angular blocky structure which is non-slowly permeable. The soils fall into Wetness Class II or III. Taking Wetness Class III as the worst scenario, this, in combination with the medium clay loam topsoils and the prevailing field capacity level (132 days), places this land in Subgrade 3a.

### **Subgrade 3b**

22. The majority of the site falls into this sub grade as a result of a more significant soil wetness limitation on what can be described as moderate quality agricultural land. In this area, the soils are generally heavier than in the south, with heavy clay loam topsoils and shallow clay subsoil horizons. The subsoils are slowly permeable in nature, placing this land in Wetness Class IV. These characteristics, again in combination with the field capacity level, limit the land to Subgrade 3b. This degree of wetness places a significant limitation on the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock without causing structural damage. The soils data for this and the Grade 4 unit is contained in the 1991 report.

### **Grade 4**

23. The field to the north of Crossroads Farm has been placed in this grade. Here, the level of the land was raised in 1990 by the removal of the topsoil, the placement of additional soil-forming materials and the replacement of the topsoil. The survey in 1991 found medium clay loam topsoil overlying a grey plastic clay at approximately 25cm. The clay was described as gleyed and anaerobic and possibly very slowly permeable. The land has therefore been assigned to Grade 4 on the basis of a severe wetness/workability limitation.

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## SOURCES OF REFERENCE

ADAS (1991) *Agricultural Land Classification Survey, Bowbrickhill, Bletchley, Bucks.*  
*Unpublished.*

British Geological Survey (1992) *Sheet No. 220, Leighton Buzzard.*  
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Met. Office (1989) *Climatological Data for Agricultural Land Classification.*  
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 4, Eastern England.*  
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Eastern England*  
SSEW: Harpenden

## APPENDIX I

### DESCRIPTIONS OF THE 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 includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

#### **Grade 2: Very Good Quality Agricultural Land**

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this 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 land.

#### **Grade 3: Good to Moderate Quality Land**

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

#### **Subgrade 3a: Good Quality Agricultural Land**

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

#### **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 the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

#### **Grade 5: Very Poor Quality Agricultural Land**

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

**APPENDIX II**

**SOIL DATA**

**Contents:**

**Sample location map**

**Soil abbreviations - explanatory note**

**Soil pit descriptions**

**Soil boring descriptions (boring and horizon levels)**



## SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

### Boring Header Information

1. **GRID REF:** national 100 km grid square and 8 figure grid reference.

2. **USE:** Land use at the time of survey. The following abbreviations are used:

<b>ARA:</b> Arable	<b>WHT:</b> Wheat	<b>BAR:</b> Barley
<b>CER:</b> Cereals	<b>OAT:</b> Oats	<b>MZE:</b> Maize
<b>OSR:</b> Oilseed rape	<b>BEN:</b> Field beans	<b>BRA:</b> Brassicae
<b>POT:</b> Potatoes	<b>SBT:</b> Sugar beet	<b>FCD:</b> Fodder crops
<b>LIN:</b> Linseed	<b>FRT:</b> Soft and top fruit	<b>FLW:</b> Fallow
<b>PGR:</b> Permanent pasture	<b>LEY:</b> Ley grass	<b>RGR:</b> Rough grazing
<b>SCR:</b> Scrub	<b>CFW:</b> Coniferous woodland	<b>OTH:</b> Other
<b>DCW:</b> Deciduous woodland	<b>BOG:</b> Bog or marsh	<b>SAS:</b> Set-Aside
<b>HTH:</b> Heathland	<b>HRT:</b> Horticultural crops	<b>PLO:</b> Ploughed

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

4. **GLEYSPL:** Depth in centimetres (cm) to gleying and/or slowly permeable layers.

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

6. **MB (WHEAT/POTS):** Moisture Balance. (Crop adjusted AP - crop adjusted MD)

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

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

<b>MREL:</b> Microrelief limitation	<b>FLOOD:</b> Flood risk	<b>EROSN:</b> Soil erosion risk
<b>EXP:</b> Exposure limitation	<b>FROST:</b> Frost prone	<b>DIST:</b> Disturbed land
<b>CHEM:</b> Chemical limitation		

9. **LIMIT:** The main limitation to land quality. The following abbreviations are used:

<b>OC:</b> Overall Climate	<b>AE:</b> Aspect	<b>ST:</b> Topsoil Stoniness
<b>FR:</b> Frost Risk	<b>GR:</b> Gradient	<b>MR:</b> Microrelief
<b>FL:</b> Flood Risk	<b>TX:</b> Topsoil Texture	<b>DP:</b> Soil Depth
<b>CH:</b> Chemical	<b>WE:</b> Wetness	<b>WK:</b> Workability
<b>DR:</b> Drought	<b>ER:</b> Erosion Risk	<b>WD:</b> Soil Wetness/Droughtiness
<b>EX:</b> Exposure		

## Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations:

<b>S:</b> Sand	<b>LS:</b> Loamy Sand	<b>SL:</b> Sandy Loam
<b>SZL:</b> Sandy Silt Loam	<b>CL:</b> Clay Loam	<b>ZCL:</b> Silty Clay Loam
<b>ZL:</b> Silt Loam	<b>SCL:</b> Sandy Clay Loam	<b>C:</b> Clay
<b>SC:</b> Sandy Clay	<b>ZC:</b> Silty Clay	<b>OL:</b> Organic Loam
<b>P:</b> Peat	<b>SP:</b> Sandy Peat	<b>LP:</b> Loamy Peat
<b>PL:</b> Peaty Loam	<b>PS:</b> Peaty Sand	<b>MZ:</b> Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

<b>F:</b> Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b> Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b> Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:

**M:** Medium (<27% clay)    **H:** Heavy (27-35% clay)

2. **MOTTLE COL:** Mottle colour using Munsell notation.
3. **MOTTLE ABUN:** Mottle abundance, expressed as a percentage of the matrix or surface described:

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

4. **MOTTLE CONT:** Mottle contrast:

**F:** faint - indistinct mottles, evident only on close inspection  
**D:** distinct - mottles are readily seen  
**P:** prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL:** Ped face colour using Munsell notation.
6. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH:** Stone Lithology - one of the following is used:

<b>HR:</b> all hard rocks and stones	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>CH:</b> chalk
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> soft weathered igneous/metamorphic rock	<b>GH:</b> gravel with non-porous (hard) stones

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

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	<b>WK</b> : weakly developed	<b>MD</b> : moderately developed
	<b>ST</b> : strongly developed	
Ped size	<b>F</b> : fine	<b>M</b> : medium
	<b>C</b> : coarse	
Ped shape	<b>S</b> : single grain	<b>M</b> : massive
	<b>GR</b> : granular	<b>AB</b> : angular blocky
	<b>SAB</b> : sub-angular blocky	<b>PR</b> : prismatic
	<b>PL</b> : platy	

9. **CONSIST**: Soil consistence is described using the following notation:

<b>L</b> : loose	<b>VF</b> : very friable	<b>FR</b> : friable	<b>FM</b> : firm	<b>VM</b> : very firm
<b>EM</b> : extremely firm		<b>EH</b> : extremely hard		

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor
11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.
13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.
14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.
15. Other notations:

<b>APW</b> :	available water capacity (in mm) adjusted for wheat
<b>APP</b> :	available water capacity (in mm) adjusted for potatoes
<b>MBW</b> :	moisture balance, wheat
<b>MBP</b> :	moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : MILTON KEYNES LP AREA 5N Pit Number : 1P

Grid Reference: SP89003390 Average Annual Rainfall : 640 mm  
 Accumulated Temperature : 1413 degree days  
 Field Capacity Level : 135 days  
 Land Use : Ploughed  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 22	MCL	10YR32 00	1	4	HR	C				
22- 55	SC	10YR52 00	0	2	HR	C	MCSAB	FR	M	
55- 85	C	10YR53 00	0	10	HR	M	MCSAB	FR	M	
85-110	SC	10YR53 00	0	33	HR	M			M	

Wetness Grade : 2 Wetness Class : II  
 Gleying : 000 cm  
 SPL : No SPL

Drought Grade : 2 APW : 123mm MBW : 15 mm  
 APP : 108mm MBP : 7 mm

FINAL ALC GRADE : 2

MAIN LIMITATION : Soil Wetness/Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	
1	SP89503470	RGR	035	035	4	3B	000	0	000	0				WE 3B	JUST WC4
1P	SP89003390	PLO	000		2	2	123	15	108	7	2			WD 2	P80-I110
29	SP88903420	PGR	060		1	1	127	19	113	12	2			DR 2	IMPSTONY
37	SP88903410	PGR	040		2	2	149	41	112	11	1			WE 2	WET70CM
38	SP89003410	PGR	030		1	1	094	-14	099	-2	3A			DR 2	IMPQDRWE
39	SP89103410	PGR	030	030	4	3B	086	-22	092	-9	3B			WE 3B	
40	SP89203410	PGR	040	060	2	2	105	-3	112	11	3A			WD 2	GLE40
44	SP89003400	PGR	000	050	3	3A	097	-11	109	8	3A			WE 3A	
45	SP89103400	PGR	050		1	1	088	-20	094	-7	3A			DR 2	SEEPIT1
46	SP89203400	PGR	030	030	4	3B	081	-27	084	-17	3B			WE 3B	SPL
50	SP89103390	PGR	000	040	3	3B	089	-19	094	-7	3A			WE 3B	
51	SP89203390	PGR	000	050	3	3B	095	-13	107	6	3A			WE 3B	
55	SP89203380	PGR	042	042	3	3A	088	-20	094	-7	3A			WE 3A	
56	SP89303380	PGR	000		1	1	096	-12	108	7	3A			DR 2	IMPQDR
59	SP89303370	PGR	000	038	3	3A	089	-19	095	-6	3A			WE 3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS						
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0-25	mc1	10YR43 00						0	0	HR	2						
	25-35	hc1	10YR43 00	10YR58 00	F	00MNO0 00		0	0	HR	2		M					
	35-60	c	25Y 52 53	10YR58 00	M			Y	0	0	HR	5		P			Y	
1P	0-22	mc1	10YR32 00	75YR46 00	C			Y	1	0	HR	4						
	22-55	sc	10YR52 00	75YR46 00	C			Y	0	0	HR	2	MCSAB	FR	M			
	55-85	c	10YR53 00	75YR58 00	M			Y	0	0	HR	10	MCSAB	FR	M			
	85-110	sc	10YR53 00	75YR58 00	M			Y	0	0	HR	33			M			
29	0-30	mc1	10YR42 00						0	0	HR	1						
	30-60	sc1	10YR54 00	000C00 00	F				0	0	HR	1		M				
	60-95	sc	10YR53 00	000C00 00	C			Y	0	0	HR	2		M				
37	0-30	mc1	10YR32 00						0	0	HR	1						
	30-40	c	10YR53 00						0	0	HR	1		M				
	40-50	c	10YR53 00	000C00 00	C			Y	0	0	HR	1		M				
	50-120	sc	10YR53 00	000C00 00	C			Y	0	0	HR	10		M				
38	0-30	mc1	10YR32 00	000C00 00	F				0	0	HR	1						
	30-60	hc1	10YR42 00	000C00 00	C			Y	0	0	HR	5		M				
39	0-30	mc1	10YR43 00	000C00 00	F				0	0	HR	1						
	30-60	c	10YR42 00	000C00 00	C			Y	0	0		0		P	Y		Y	
40	0-30	mc1	10YR42 00						0	0	HR	4						
	30-60	c	10YR53 00	000C00 00	C			Y	0	0	HR	2		M				
	60-80	c	10YR53 00	000C00 00	M			Y	0	0		0		P	Y		Y	
44	0-30	mc1	10YR52 00	000C00 00	C			Y	0	0	HR	4						
	30-50	c	10YR53 00	000C00 00	C			Y	0	0	HR	2		M				
	50-70	c	10YR53 00	000C00 00	C			Y	0	0	HR	2		P	Y		Y	
45	0-30	mc1	10YR43 00	000C00 00	F				0	0	HR	4						
	30-50	c	10YR42 00	000C00 00	F				0	0	HR	4		M				
	50-60	c	10YR53 00	000C00 00	C			Y	0	0	HR	33		M				
46	0-30	hc1	10YR42 00	000C00 00	F				0	0	HR	4						
	30-55	c	10YR53 00	000C00 00	M			Y	0	0		0		P	Y		Y	
50	0-30	hc1	10YR42 00	000C00 00	C			Y	0	0	HR	2						
	30-40	c	10YR53 00	000C00 00	C			Y	0	0	HR	2		M				
	40-60	c	10YR53 00	000C00 00	C			Y	0	0	HR	1		P	Y		Y	
51	0-28	hc1	10YR42 00	000C00 00	C			Y	0	0	HR	4						
	28-50	c	10YR53 00	000C00 00	C			Y	0	0	HR	5		M				
	50-70	c	25Y 63 00	000C00 00	C			Y	0	0	HR	5		P	Y		Y	
55	0-30	mc1	10YR42 00	000C00 00	F				0	0	HR	4						
	30-42	c	10YR53 00						0	0	HR	2		M				
	42-60	c	10YR53 00	000C00 00	C			Y	0	0	HR	1		P	Y		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
56	0-30	mc1	10YR43 00					0	0	HR	1						
	30-40	sc1	10YR42 00					0	0	HR	1						M
	40-65	c	10YR42 00					0	0	HR	1						M
59	0-30	mc1	10YR42 00	000C00	00	C		Y	0	0	HR	1					
	30-38	c	10YR53 00	000C00	00	C		Y	0	0	HR	1					M
	38-60	c	10YR53 00	000C00	00	M		Y	0	0	HR	1			P	Y	Y