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**AYLESBURY VALE LOCAL PLAN  
Land West of Buckingham  
Agricultural Land Classification**

**September 1996**

**Resource Planning Team  
Guildford Statutory Group  
ADAS Reading**

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## **AGRICULTURAL LAND CLASSIFICATION REPORT**

### **AYLESBURY VALE LOCAL PLAN : LAND WEST OF BUCKINGHAM**

#### **INTRODUCTION**

1. This summary report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 49 ha of land on the western fringe of Buckingham, to the north of Tingewick Road. The survey was carried out in September 1996.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food's (MAFF) Land Use Planning Unit (Reading) in connection with its statutory input to the preparation of the Aylesbury Vale Local Plan. This survey supersedes previous ALC surveys on this land, particularly the 1988 survey. Information from a detailed revised ALC survey (ADAS reference 0301/13/93) on adjacent land to the south east has also been used in grading the land.
3. The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in ADAS. 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 on the site was a mixture of permanent grassland and recently ploughed land. The areas mapped as 'Other' include a disused railway line, allotment gardens, former farm buildings and some storage areas.

#### **SUMMARY**

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000; it is accurate at this scale but any enlargement would be misleading. At the time of survey, the soil conditions were very dry, and this, in combination with the stone contents of many of the soils, meant that it was not possible to regularly examine the subsoils at depth by a soil auger. As a result, some additional extrapolation has been made from the soil pit information to grade parts of the site.
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 hectare. A total of 29 borings and 4 soil pits were described.
8. The land quality on the site ranges from Grade 2 (very good quality agricultural land) to Grade 4 (poor quality agricultural land). The complicated nature of the map units partly reflects the variability of the soil and the complicated geological history.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Agricultural Area
2	9.7	19.8	23.2
3a	24.1	49.0	57.5
3b	7.3	14.8	17.4
4	0.8	1.6	1.9
Other land	7.3	14.8	-
Total agricultural area	41.9	85.2	100
Total site area	49.2	100	-

9. Two areas of Grade 2 land are mapped on the site. The southern unit on the higher, flatter land is variable, containing soils that mostly experience a soil wetness limitation, largely linked to lower clay subsoils that cause some obstruction to soil drainage. The northern unit forms a narrow fringe along a stream, and experiences a slight soil workability limitation related to its heavy topsoil textures; these profiles are usually free-draining.

10. The majority of the agricultural land has been classified as Subgrade 3a with a mixture of main limitations - soil droughtiness (related to very stony and sandy subsoils), soil wetness (related to clay subsoils that obstruct the drainage on heavy, non-calcareous soils) or topsoil stoniness.

11. The areas of Subgrade 3b either reflect areas of steep gradient, in the southern block, or where the topsoil stone contents are limiting on the slopes in the northern block.

12. The one unit of Grade 4 land delineates an area where gradient is the most limiting factor.

## FACTORS INFLUENCING ALC GRADE

### Climate

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

10. 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).

11. 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.

12. 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 684 343	SP 683 336
Altitude	m, AOD	85	105
Accumulated Temperature	days°C	1400	1378
Average Annual Rainfall	mm	679	681
Field Capacity Days	days	145	146
Moisture Deficit, Wheat	mm	105	102
Moisture Deficit, Potatoes	mm	95	92
Overall climatic grade	N/A	Grade 1	Grade 1

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation affecting the site. There are also no local climatic factors that are significant at the site. Climatically, the site may be classified as Grade 1. The fact that the range of FC days is below 150 across the site means that the workability limitation for some calcareous soils will be eased.

#### Site

14. The site occupies quite varied topography and can be spilt into two sections, with the disused railway as the dividing line. Land to the south is higher, occupying a crest top location adjacent to the Tingewick Road; here the altitude is over 100 metres. This land slopes down to the railway line with locally steep gradients that are a significant factor in grading this area. Land to the north is lower, below 85 metres at points, and includes part of the floodplain of the River Great Ouse and a related tributary. Between these two narrow floodplains, the land rises to a minor plateau with stony shoulders on its steeper slopes.

#### Geology and soils

15. The unpublished soils map for this area shows a mixture of Forest Marble and Cornbrash solid geology, but this has been significantly altered by the deposition of a drift deposit of chalky boulder clay (chalky till).

16. The published soils information reveals Elmton 1 Association soils (shallow, well drained, brashy, calcareous, fine loamy soil over limestone) in the north, with Ashley Association soils in the south (fine loamy over clayey soils with slowly permeable subsoils). The complicated geological history of this area has resulted in a more complicated soils pattern than this across the site.

#### AGRICULTURAL LAND CLASSIFICATION

17. The details of the classification of the site are shown on the attached ALC map.

18. The location of the single auger boring is shown on the attached sample location map and the details of the soils data are presented in Appendix III.

## Grade 2

19. The northern map unit of Grade 2, along the fringe of a stream, identifies heavy soils (heavy clay loam topsoils overlying clay subsoils) which show no significant evidence of soil wetness; they are placed in Wetness Class I. Soil droughtiness is therefore the main limiting factor. Although the soils are relatively stone-free and are moderately structured, the combination of textures and structures slightly limits the availability of water for roots in the profile and, consequently, slightly limits the flexibility of this land.

20. The southern area of Grade 2 occurs on a crest top location. Here, the profiles are quite variable, with a mixture of soil droughtiness and soil wetness limitations. The dry soil conditions at the time of survey meant that it was not always possible to examine the subsoils in detail. Soil Pit 2 is located in this map unit and describes a droughty profile with lower subsoils of clay containing approximately 30% stone. Given these stone contents and the dry conditions, the calculation of available water could only be taken down to 63 cm. This technically places this profile into Subgrade 3a, but it is assumed that the soil resource will continue, sufficient to make Grade 2 the appropriate classification (still with soil droughtiness as the main limitation). In parts of this area, the clay subsoils show clear evidence of wetness in the form of gleying and it has been assumed that some of the subsoil structures are slowly permeable. Where this is the case, these soils fall into Wetness Class II or III (depending on the depth to the gleying and the slowly permeable layer) and, given their calcareous nature and the prevailing FC days, are classified as Grade 2.

## Subgrade 3a

21. The majority of the site falls into this grade though, given the dry soil conditions, it may contain elements of better or worse quality. Pit 1 is located in the southern section and was chosen to help investigate the many borings that were impenetrable immediately below the topsoil. It describes a calcareous soil resource that extends to at least 80 cm; the lower subsoil is much sandier than the horizons above (coarse sandy loam, as opposed to medium or heavy clay loam) and contains approximately 40% hard rock. Soil droughtiness is, therefore, the main limitation. The soil resource may continue further but, given the already very sandy conditions and high stone contents, it has not been assumed that such a profile can qualify for anything better than Subgrade 3a.

22. In the northern part of the site, topsoil stoniness becomes an important factor. Stone contents in the top 25 cm vary significantly over short distances. A number of specific topsoil stone measurements were carried out (using a visual assessment of stones left on a sieve with a 2 cm mesh) and show that this area can be classified no better than Subgrade 3a. Pit 4 also shows some soils where the topsoil stone percentages are not as limiting, but where subsoil stone contents are in the order of 50%, which create a significant soil droughtiness limitation. In addition, Pit 3 reveals a very limited are of Grade 1 soil. Given its limited extent and the local variation in topsoil stone contents, this has been subsumed within the wider Subgrade 3a unit.

### **Subgrade 3b**

23. A number of Subgrade 3b map units have been identified across the site. In the north, these highlight the shoulders of a small plateau where stone contents are in the range 15-35%. In the south, these highlight areas where gradients are in the range 7-11 degrees.

### **Grade 4**

24. This map unit identifies a small area of very steeply sloping land in the south of the site where gradients are in the range 11-18 degrees.

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## SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No.270, South London*.  
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales : Revised guidelines and criteria for grading the quality of agricultural land*.  
MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification*.  
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South East England*.  
SSEW: Harpenden.

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

## APPENDIX I

### DESCRIPTION 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 that 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 WETNESS CLASSIFICATION

#### Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

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Wetness Class	Duration of waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
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 only wet within 40 cm depth for 30 days in most years.
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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

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#### Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

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<sup>1</sup> The number of days is not necessarily a continuous period.

<sup>2</sup> 'In most years' is defined as more than 10 out of 20 years.

**APPENDIX III**

**SOIL DATA**

**Contents:**

**Sample location map**

**Soil abbreviations - Explanatory Note**

**Soil Pit Descriptions**

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

**Database Printout - Horizon Level Information**

## 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>DCW:</b> Deciduous Wood		
<b>HTH:</b> Heathland	<b>BOG:</b> Bog or Marsh	<b>FLW:</b> Fallow
<b>PLO:</b> Ploughed	<b>SAS:</b> Set aside	<b>OTH:</b> Other
<b>HRT:</b> Horticultural Crops		

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

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

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

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

degree of development    **WK:** weakly developed        **MD:** moderately developed  
   **ST:** strongly developed

ped size                            **F:** fine    **M:** medium  
   **C:** coarse                                        **VC:** very coarse

ped shape                            **S :** single grain                                **M:** massive  
   **GR:** granular                                    **AB:** angular blocky  
   **SAB:** sub-angular blocky                 **PR:** prismatic  
   **PL:** platy

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

**L:** loose    **VF:** very friable    **FR:** friable    **FM:** firm    **VM:** very firm  
**EM:** extremely firm                            **EH:** 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

**APW:** available water capacity (in mm) adjusted for wheat

**APP:** available water capacity (in mm) adjusted for potatoes

**MBW:** moisture balance, wheat

**MBP:** moisture balance, potatoes

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--			-WHEAT-		-POTS-		M. REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB					
1P	SP68053370	LEY				1	1		097	-8	100	5	3A	DR	3A	IMP80CM
1S	SP68453415	ARA				1	2		000	0	000	0		TS	3A	
2	SP68403430	ARA NE				1	2		094	-11	098	3	3A	DR	2	Q IMP DR
2P	SP68303360	OSR NE	01	047		2	2		093	-12	101	6	3A	WD	2	Q SPL
2S	SP68453420	ARA				1	2		000	0	000	0		TS	3A	
3P	SP68403405	ARA S	01			1	1		000	0	000	0			1	
3S	SP68453425	ARA				1	2		000	0	000	0		TS	3B	
4	SP68303420	ARA		055	055	2	3A		098	-7	111	16	3A	WE	3A	
4P	SP68603420	PGR				1	1		060	-45	060	-35	3B	DR	3B	IMPQDEEP
4S	SP68503398	ARA				1	2		000	0	000	0		TS	2	
5	SP68403420	ARA NE				1	1		090	-15	095	0	3A	DR	3A	IMPQDR
5S	SP68453396	ARA				1	2		000	0	000	0		TS	3A	
6	SP68503420	ARA NE				1	2		127	22	119	24	2	WE	2	NO GLEY
6S	SP68353402	ARA				1	1		000	0	000	0		TS	3B	
8	SP68703420	PGR				1	1		066	-39	066	-29	3B	DR	3A	IMPQDR
9	SP68303410	ARA		060	060	2	3A		120	15	113	18	2	WE	3A	NONCALC
11	SP68503410	ARA NE				1	2		095	-10	103	8	3A	DR	2	Q IMP DR
12	SP68603410	PGR S	03	055	055	2	2		000	0	000	0		DR	2	IMPCALC
14	SP68003400	PGR N	04			1	1		088	-17	095	0	3A	DR	3A	IMPQDR
20	SP68103390	PGR N	02			1	1		051	-54	051	-44	4	DR	3B	IMPX2QDR
25	SP68603390	ARA		055	055	2	3A		102	-3	115	20	3A	WE	3A	Q NONCALC
27	SP68003380	LEY N	04			1	2		051	-54	051	-44	4	DR	3B	IMPQDR
28	SP68103380	PGR N		000	030	4	3B		078	-27	081	-14	3B	WE	3B	
29	SP68203380	PGR SW	06	038		2	3A		102	-3	110	15	3A	WE	3A	IMPNOSPL
30	SP68303380	PGR NE	04			1	1		051	-54	051	-44	4	DR	3B	IMPQDR
36	SP68003370	LEY W	03			1	1		000	0	000	0		DR	3B	IMPQDR
37	SP68103370	LEY NW				1	2		000	0	000	0		DR	3B	IMPQDR
38	SP68203370	PGR NE	04			1	2		057	-48	057	-38	3B	DR	3A	IMPQDR
39	SP68303370	PGR N	03			1	2		065	-40	065	-30	3B	DR	3A	IMPQDR
41	SP68503370	LEY N				1	2		066	-39	066	-29	3B	DR	3A	IMPQDR
42	SP68603370	LEY N				1	2		063	-42	063	-32	3B	DR	3A	IMPQDR
44	SP68003360	OSR W	05	055		2	2		083	-22	085	-10	3B	DR	3A	QIMP55
45	SP68103360	OSR N				1	1		000	0	000	0		DR	2	IMPQDR
46	SP68203360	OSR N		030		2	2		096	-9	108	13	3A	WE	2	IMPQDR
47	SP68303360	ARA NE	01	047	047	3	3A		099	-6	111	16	3A	DR	3A	QWE 2-3A
48	SP68403360	OSR NE	01	027	048	3	2		113	8	111	16	2	WE	2	
49	SP68003350	ARA NW	01	020	035	4	3B		088	-17	094	-1	3A	WE	3B	
50	SP68103350	OSR NE	01	055	055	2	2		101	-4	112	17	3A	DR	3A	
51	SP68203350	ARA NE	01	047	047	3	3A		106	1	111	16	3A	WE	3A	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS.	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		
1P	0-20	mc1	10YR43 00					4	0	HR	14			Y
	20-40	hc1	10YR54 00					0	0	HR	15	M		Y
	40-65	mc1	10YR54 00					0	0	HR	10	M		Y
	65-80	cs1	10YR56 00					0	0	HR	40	M		Y
1S	0-25	hc1	10YR43 00					11	8	HR	20			Y
2	0-30	hzc1	75YR44 00					1	0	HR	2			
	30-55	hzc1	75YR54 00					0	0	HR	2	M		
2P	0-29	hzc1	10YR42 00					2	0	HR	2			Y
	29-47	hc1	25Y 44 00					0	0	HR	2	FR M		Y
	47-63	c	25Y 53 62	10YR58 00 C				Y	0	0	HR	30	MCSAB FR M	
2S	0-25	hc1	10YR43 00					12	8	HR	20			Y
3P	0-30	mc1	10YR44 00					0	0	HR	1			
	30-55	ms1	75YR44 00					0	0	HR	1	MCSAB FR M		
	55-80	ms1	75YR56 00					0	0	HR	1	MCSAB FR M		
	80-120	lms	75YR56 00					0	0		0	M		
3S	0-25	hc1	10YR43 00					18	15	HR	25			Y
4	0-20	hc1	10YR42 00					1	0	HR	2			
	20-55	c	10YR53 00					0	0		0	M		
	55-70	c	10YR53 00	000C00 00 F			00MN00 00 Y	0	0		0	P	Y	Y
4P	0-25	mc1	10YR43 00					5	0	HR	15			Y
	25-50	mc1	10YR44 00					0	0	HR	50	M		Y
4S	0-25	hc1	10YR43 00					9	4	HR	20			Y
5	0-30	mzc1	10YR42 00					2	0	SLST	7			Y
	30-60	hc1	10YR56 00					0	0	SLST	20	M		Y
5S	0-25	hc1	10YR43 00					14	9	HR	20			Y
6	0-30	hzc1	10YR43 00					1	0	HR	2			
	30-80	c	10YR54 00					0	0	HR	2	M		
	80-100	c	75YR54 00					0	0	HR	2	M		
6S	0-25	hc1	10YR43 00					16	11	HR	25			Y
8	0-28	mc1	10YR43 00					2	0	HR	5			
9	0-25	hc1	10YR42 00					1	0	HR	2			
	25-60	c	10YR53 00					0	0		0	M		
	60-100	c	10YR53 00	05YR46 00 M				Y	0	0		0	P	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC	
11	0-30	hzc1	10YR43 00						1	0	HR	2							
	30-60	c	10YR54 00						0	0	HR	2	M						
12	0-25	hc1	10YR43 00						2	0	HR	10						Y	
	25-55	hc1	10YR44 00						0	0	HR	5	M					Y	
	55-70	c	75YR54 00	000C00	00	C		00MN00	00	S	0	0	HR	1	P	Y		Y	Y
14	0-20	mzc1	10YR42 00						2	0	HR	10						Y	
	20-60	c	75YR44 00	000C00	00	F		00MN00	00		0	0	HR	5	M			Y	
20	0-30	mc1	10YR44 00						2	0	HR	5						Y	
25	0-30	hzc1	10YR43 00						1	0	HR	2							
	30-55	c	10YR53 00						0	0	HR	1	M						
	55-70	c	10YR53 00	000C00	00	C		00MN00	00	Y	0	0		0	P	Y		Y	
27	0-30	hc1	10YR43 00						2	0	HR	5							
28	0-30	c	25Y 54 00	000C00	00	C			Y	0	0	SLST	5					Y	
	30-55	c	25Y 52 00	000C00	00	M			Y	0	0	SLST	2	P	Y		Y	Y	
29	0-20	c	10YR42 00						2	0	HR	5						Y	
	20-38	c	75YR44 00					00MN00	00		0	0	HR	5	M			Y	
	38-80	c	10YR53 00	000C00	00	C			Y	0	0	SLST	2	M				Y	
30	0-30	mc1	10YR43 00						2	0	HR	5							
36	0-30	mc1	10YR43 00						2	0	HR	5						Y	
37	0-30	hc1	10YR43 00						1	0	HR	2						Y	
38	0-20	hc1	10YR32 00						2	0	HR	5							
	20-35	hc1	10YR53 00	000C00	00	F			0	0	HR	5	M					Y	
39	0-20	hc1	10YR43 00						2	0	HR	5							
	20-40	c	10YR54 00	000C00	00	F			0	0	HR	5	M					Y	
41	0-25	hc1	10YR42 00						2	0	HR	5						Y	
	25-40	hc1	10YR43 00						0	0	SLST	5	M					Y	
42	0-20	hc1	10YR43 00						2	0	HR	5						Y	
	20-40	sc1	10YR54 00						0	0	SLST	5	M					Y	
44	0-30	mc1	10YR43 00						3	0	HR	5							
	30-55	sc1	75YR42 00						0	0	HR	10	M						
45	0-30	mzc1	10YR43 00						1	0	HR	2						Y	
	30-38	hc1	10YR54 00						0	0	HR	2	M						
	38-60	c	10YR54 00						0	0	SLST	2	M						



SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED	-----STONES-----			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL	CALC
46	0-30	hc1	10YR43 00						1	0	HR	2						Y
	30-65	c	25Y 63 00	000C00	00	C		Y	0	0	CH	5		M				Y
47	0-28	hzc1	10YR43 00						1	1	HR	2						Y
	28-47	c	25Y 54 00						0	0	HR	2		M				Y
	47-70	c	25Y 54 00	10YR58	00	C		Y	0	0	HR	5		P			Y	Y
48	0-27	mzc1	10YR43 00						2	0	HR	2						Y
	27-48	hc1	10YR53 54	10YR58	00	C		Y	0	0	HR	2		M				Y
	48-90	c	10YR53 00	10YR58	00	C		Y	0	0	HR	2		P			Y	Y
49	0-20	hzc1	10YR42 00						1	0	HR	2						
	20-35	c	10YR53 00	000C00	00	M		Y	0	0		0		M				
	35-60	c	10YR53 00	000C00	00	M	00MN00	00	Y	0	0	0		P	Y		Y	
50	0-25	mzc1	10YR42 00						0	0	HR	3						Y
	25-55	hc1	25Y 54 00	10YR58	00	F			0	0	HR	2		M				Y
	55-70	c	25Y 52 00	10YR58	00	C		Y	0	0	HR	2		P			Y	Y
51	0-28	hzc1	10YR43 00						2	0	HR	2						Y
	28-47	c	10YR44 00						0	0	HR	2		M				Y
	47-80	c	25Y 62 00	10YR56	00	C		Y	0	0	HR	2		P			Y	Y

SOIL PIT DESCRIPTION

Site Name : LAND WEST OF BUCKINGHAM Pit Number : 1P

Grid Reference: SP68053370 Average Annual Rainfall : 679 mm  
 Accumulated Temperature : 1400 degree days  
 Field Capacity Level : 145 days  
 Land Use : Ley  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 20	MCL	10YR43 00	4	14	HR					Y
20- 40	HCL	10YR54 00	0	15	HR				M	Y
40- 65	MCL	10YR54 00	0	10	HR				M	Y
65- 80	CSL	10YR56 00	0	40	HR				M	Y

Wetness Grade : 1 Wetness Class : I  
 Gleying : cm  
 SPL : No SPL

Drought Grade : 3A APW : 097mm MBW : -8 mm  
 APP : 100mm MBP : 5 mm

FINAL ALC GRADE : 3A  
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : LAND WEST OF BUCKINGHAM Pit Number : 2P

Grid Reference: SP68303360 Average Annual Rainfall : 679 mm  
 Accumulated Temperature : 1400 degree days  
 Field Capacity Level : 145 days  
 Land Use : Oilseed Rape  
 Slope and Aspect : 01 degrees NE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	HZCL	10YR42 00	2	2	HR					Y
29- 47	HCL	25Y 44 00	0	2	HR			FR	M	Y
47- 63	C	25Y 53 62	0	30	HR	C	MCSAB	FR	M	Y

Wetness Grade : 2  
 Wetness Class : II  
 Gleying : 047 cm  
 SPL : No SPL

Drought Grade : 3A  
 APW : 093mm MBW : -12 mm  
 APP : 101mm MBP : 6 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : LAND WEST OF BUCKINGHAM Pit Number : 3P

Grid Reference: SP68403405 Average Annual Rainfall : 679 mm  
 Accumulated Temperature : 1400 degree days  
 Field Capacity Level : 145 days  
 Land Use : Arable  
 Slope and Aspect : 01 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MCL	10YR44 00	0	1	HR					
30- 55	MSL	75YR44 00	0	1	HR		MCSAB	FR	M	
55- 80	MSL	75YR56 00	0	1	HR		MCSAB	FR	M	
80-120	LMS	75YR56 00	0	0					M	

Wetness Grade : 1 Wetness Class : I  
 Gleying : cm  
 SPL : No SPL

Drought Grade : APW : 000mm MBW : 0 mm  
 APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 1  
 MAIN LIMITATION :

SOIL PIT DESCRIPTION

Site Name : LAND WEST OF BUCKINGHAM Pit Number : 4P

Grid Reference: SP68603420 Average Annual Rainfall : 679 mm  
 Accumulated Temperature : 1400 degree days  
 Field Capacity Level : 145 days  
 Land Use : Permanent Grass  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MCL	10YR43 00	5	15	HR					Y
25- 50	MCL	10YR44 00	0	50	HR				M	Y

Wetness Grade : 1 Wetness Class : I  
 Gleying : cm  
 SPL : No SPL

Drought Grade : 3B APW : 060mm MBW : -45 mm  
 APP : 060mm MBP : -35 mm

FINAL ALC GRADE : 3B  
 MAIN LIMITATION : Droughtiness