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WILTSHIRE MINERALS LOCAL PLAN  
S72 BLACKBURR FARM, MARSTON MEYSEY

**AGRICULTURAL LAND CLASSIFICATION  
REPORT OF SURVEY**

Resource Planning Team  
Taunton Statutory Unit

November 1992

**ADAS** 

WILTSHIRE MINERALS LOCAL PLAN  
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AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. SUMMARY

Thirty nine hectares of land at Blackburr Farm were graded using the Agricultural Land Classification (ALC) System in November 1992. The survey was carried out on behalf of MAFF as part of its statutory role in the preparation of the Wiltshire Minerals Local Plan.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at this scale but any enlargement would be misleading. A total of 37 auger borings and 2 soil profile pits were examined.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

Distribution of ALC grades: Blackburr Farm

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
3a	33.9	87.4	90.5	
3b	3.6	9.3	<u>9.5</u>	
Urban	0.6	1.5	100%	(37.5 ha)
Non Agric	<u>0.7</u>	<u>1.8</u>		
TOTAL	38.8	100%		

There are no climatic or site limitations for the survey area. The main limitation in the survey area is wetness, downgrading the land to Subgrade 3a. Parts of the site also experience droughtiness limitations. A small area beside the River Thames suffers from flooding and can be graded no better than Subgrade 3b.

## 2. INTRODUCTION

Thirty eight hectares of land at Blackburr Farm were graded using the Agricultural Land Classification (ALC) System in November 1992. The survey was carried out on behalf of MAFF as part of its statutory role in the preparation of the Wiltshire Minerals Local Plan.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at this scale but any enlargement would be misleading. A total of 37 auger borings and 2 soil profile pits were examined.

The published Provisional 1" to the mile ALC map of this area (MAFF 1973) shows the site to be Grade 2 in the north and Grade 3 in the south. The area was surveyed in 1979 at a scale of 1:25,000 as part of the Cotswold Water Park ALC survey which mapped the site as Subgrade 3a with some 3b in the west and along the river. The recent survey supersedes these maps having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988).

The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in Appendix 2.

At the time of survey most of the site was under grass except for the northern most field which had crop residue.

## 3. CLIMATE

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

Estimates of climatic variables were obtained for the site by interpolation from the 5km grid Meteorological Office Database (Meteorological Office 1989) and are shown in Table 1.

The parameters used for assessing overall climatic limitation are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The values shown in Table 1 reveal that there is no overall climatic limitation.

No locally limiting climatic factors such as exposure were noted in the survey area. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in Section 6.

Table 1 Climatic Interpolations: Blackburr Farm

Grid Reference	SU 144 965
Height (m)	80
Accumulated Temperature (day deg)	1435
Average Annual Rainfall (mm)	690
Overall Climatic Grade	1
Field Capacity (Days)	155
Moisture Deficit,	
Wheat (mm)	105
Potatoes (mm)	96

#### 4. RELIEF

The site is virtually flat with only a slight rise away from the river. None of the fields have microrelief limitations. The site is at 80m AOD.

#### 5. GEOLOGY AND SOILS

The published one inch scale solid and drift geology map, sheet 252 (Geological Survey of England and Wales 1974) shows the majority of the site to be of First Terrace River deposits. There are two small areas of Alluvial deposits in the south and east.

The Soil Survey of England and Wales mapped the soils of the area in 1983, at a reconnaissance scale of 1:250,000. This map shows the soils at the site to be of two associations. South of the road is the Thames Association. This soil is poorly drained. The rest of the site is of the Badsey 2 Association, described as mainly well drained fine loamy soils over calcareous gravel.

The soils found in the recent survey show evidence of high water tables for part of the year. Many of the soils are also stony and this imposes a limitation on the available water for crop growth.

## 6. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading.

Table 2 Distribution of ALC grades: Blackburr Farm

<b>Grade</b>	<b>Area (ha)</b>	<b>% of Survey Area</b>	<b>% of Agricultural Land</b>	
3a	33.9	87.4	90.5	
3b	3.6	9.3	<u>9.5</u>	
Urban	0.6	1.5	100%	(37.5 ha)
Non Agric	<u>0.7</u>	<u>1.8</u>		
<b>TOTAL</b>	<b>38.8</b>	<b>100%</b>		

### Subgrade 3a

The majority of the site has been mapped as Subgrade 3a. The soils show evidence of high water tables for part of the year in the form of gleying, or by a high water table at the time of survey. At the time of survey the water table was observed as shallow as 30cm, but generally between 50-60cm. The soils are Wetness Class II according to the definition in Appendix 3. Many of these soils also have stony subsoils, which in some cases also downgrades the soils to Subgrade 3a. In two soil profile pits the stone content below 50cm was measured as 11% and 30% by sieving and displacement in water. The soils have heavy clay loam and heavy silty clay loam topsoils as confirmed by Particle Size Distribution analysis.

### Subgrade 3b

A small area of more poorly drained soils were found adjacent to the River Thames. Here the drainage is impeded by the presence of a slowly permeable layer. The soils are Wetness Class IV. This area and a little further from the river is affected by flooding. The flooding occurs frequently in winter and lasts for between 2 and 4 days. The risk associated with this means that the land has reduced versatility and is downgraded to Subgrade 3b.

## Urban and Agricultural Buildings

A small area of the site is covered by buildings associated with the farm and there is a road running through the middle of the site.

## APPENDIX 1

### REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1974) Solid and drift edition. Sheet 252 Swindon, 1:63,360 scale

MAFF (1973) Agricultural Land Classification Map sheet 157 Provisional 1:63,360 scale

MAFF (1988) Agricultural Land Classification of England and Wales (Revised guidelines and criteria for grading the quality of agricultural land) Alnwick

METEOROLOGICAL OFFICE (1989) Published climatic data extracted from the agroclimatic dataset, compiled by the Meteorological Office

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

SITE NAME Blackburr Farm		PROFILE NUMBER Pit 2		SLOPE AND ASPECT 0		LAND USE Permanent grazing		Av Rainfall :- 690 ATO :- 1435 FC Days :- 155 Climatic grade :- 1		PARENT MATERIAL First Terrace River Deposits			
JOB NO 70/92		DATE November 1992		GRID REFERENCE SU 139 965		DESCRIBED BY GMS							

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	26	10YR42	HCL	1% HR	None	Mod. dev. CSAB	>0.5	-	Friable	Many fine	No	-	Smooth, abrupt
2	33	10YR53	HCL	C	Common 10YR58	MCSAB	>0.5	Mod.	Friable	Many fine	Yes	-	Smooth, clear
3	50+	10YR64	LCS	30% hard rock sieved/displ.	Common 10YR58	WMSAB	>0.5	Mod.	Very friable	-	Yes		

Profile Gleyed From:- 26cm Depth to Slowly Permeable Horizon:- None Wetness Class :- II Wetness Grade :- 3A	Available Water Wheat :- 90 Potatoes :- 74 Moisture Deficit Wheat :- 105 Potatoes :- 96 Moisture Balance Wheat :- -15) Potatoes :- -21) Droughtiness Grade :- 3A)	Final ALC Grade :- 3A Main Limiting Factor(s) :- Droughtiness/wetness Remarks :- Water table at 45cm. H2 too well developed to be SPL; also porosity too high.
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SITE NAME Blackburr Farm		PROFILE NUMBER Pit 1	SLOPE AND ASPECT 0		LAND USE Permanent grazing	Av Rainfall :- 690 ATO :- 1435 FC Days :- 155 Climatic grade :- 1			PARENT MATERIAL First Terrace River Deposits				
JOB NO 70/92		DATE November 1992	GRID REFERENCE SU 143 962		DESCRIBED BY GMS								

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	24	10YR43	HCL	1% <2cm	None	Mod. dev. CSAB	>0.5	-	Friable	Fine Common	No	-	Clear wavy
2	36	10YR56	HCL	9% HR sieved/disl.	None	Mod. dev. CSAB	>0.5	Good	Very friable	Fine Common	No	-	Gradual wavy
3	55+	10YR74	LMS	11% HR sieved/disl.	Common ochreous	Weakly dev. MSAB	>0.5	Mod.	Very friable	Few fine	Yes	-	

Profile Gleyed From:- Not  
Depth to Slowly Permeable Horizon:- None  
Wetness Class :- I  
Wetness Grade :- 2

Available Water Wheat :- 108  
Potatoes :- 90  
Moisture Deficit Wheat :- 105  
Potatoes :- 96  
Moisture Balance Wheat :- +3 )  
Potatoes :- -6 ) LMS with 11% hard rock assumed to  
) 120 cm  
Droughtiness Grade :- 3a)

Final ALC Grade :- 3A  
Main Limiting Factor(s) :- Droughtiness

Remarks :-  
Water table at 55cm - pit dug to 55cm