REPORT TO ACCOMPANY THE AGRICULTURAL LAND CLASSIFICATION FOR THE PROPOSED WORKING OF SAND & GRAVEL AT CHURCH LAWFORD AIRFIELD, RUGBY

1. BACKGROUND INFORMATION

Introduction

The land at Church Lawford was visited by members of the Resource Planning Group in August and September 1989, in order to undertake a detailed Agricultural Land Classification of the area. Information was collected in sufficient detail to present the maps at a scale of 1:10,000

Climate

This site falls within Agro-Climatic Area 20. The site has an average annual rainfall of 697 mm. Monthly rainfall is fairly evenly distributed throughout the year, although wettest in August and November, and driest between February and April. The length of the growing season is from the end of March to the end of November, and the mean last frost is in early May.

Altitude and Relief

Altitude varies between 107 and 110 metres. The land is almost level. Nowhere does gradient represent a limiting factor in the final grading of the land.

Geology and Soils

The solid geology of the area is Lower Lias Clays of the Jurassic formations. These are overlain by drift deposits of Dunsmore Gravels. These outwash sands and gravels cover the Dunsmore Heath Plateau. They consist of flinty gravels with subordinate beds of sand, and a significant proportion of clay.The associated soils are generally sandy loams overlying loamy sands often with sandy clay loams at depth.

Agricultural Land Use

At the time of survey the majority of the site was under cereal cultivation with a limited area of potatoes, and some rye grass grown in the north-east of the site.

2. AGRICULTURAL LAND CLASSIFICATION

Sub-grade 3a accounts for 63.56 hectares and 81.3% of the site. The soils are typically slightly stony sandy loams overlying moderately stony loamy sands with either sand at depth or a matrix of clay and sandy clay loam with sand inclusions. Droughtiness is the main limitation to the agricultural use of this land.

Whilst there was very little variation in the topsoil, soil pits revealed greater variation in the subsoil, both in terms of stone content which varied between 5% and 20%, and by the presence of weathered sandstone lenses and compacted dry subsoils.

In the south-east of the site a few borings were potentially grade 2 but these occurred in isolated pockets too small to map separately at this scale.

Sub-grade 3b accounts for 1.13 hectares and 1.4% of the site. It is mapped in a single small area to the north of the fishing ponds where clay loams overlie clays, but with loamy sand at depth. The imperfect to poor drainage of these soils presents the main limitation to the agricultural use of this land.

Urban land accounts for 10.65 hectares and 13.7% of the site.

Non-agricultural land accounts for 2.36 hectares and 3.0% of the site.

Water accounts for 0.43 hectares and 0.6% of the site.

Resource Planning Group
Wolverhampton RO
October 1989

PHYSICAL CHARACTERISTICS REPORT FOR THE PROPOSED WORKING OF SAND AND GRAVEL AT CHURCH LAWFORD AIRFIELD, RUGBY.

INTRODUCTION

A detailed survey using a hand held auger was carried out on the site, with 63 borings being taken, to a maximum depth of 100 cm. Due to the dry conditions prevailing during the summer months of 1989, the soils were very dry and compact, and stones were difficult to dislodge when augering. As a result, many borings were to less than 50 cms. However, the problem was partially overcome by digging four soil pits so that details of the physical characteristics of the soils could be observed and recorded.

Three soil units were identified, which have been separated according to their textures, which reflect their different handling characteristics and separate storage needs.

Unit 1

Soils in this unit are typically sandy loams to an average depth of 30 cms; overlying sandy loams or loamy sands to an average depth of 48 cms; overlying sandy clay loams or heavy clay loams with inclusions of loamy sand or sands. These subsoils are naturally variable and it is not feasible to identify separate subsoil units.

Unit 2

Soils in this unit occur in a limited area adjoining the fish ponds where medium clay loams to 25 cms, overlie heavy clay loams or clays to 63 cms, overlying loamy sand to depth.

Unit 3

This represents the runways, which will probably have similar subsoils to Unit 1, although suffering from considerable compaction under the concrete surface.

Details of the soil pits are attached overleaf.

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MINERAL SITE RECORD

Site Name: Church Lawford

SOIL PIT DETAILS

Pit Number: 1

Land use: Grass Ley

Slope: Level

Aspect: -

Depth	Texture	Munsell Colour	Mottles Abundance/ Colour	Structure Grade/Class/Type	Porosity	Stone Abundance/Type	Plant Roots	Comments
0-33	SL	7.5 YR 3/2 Dk brown	None	Moderately developed Medium Sub-angular blocky	0.5-2%	>2cm 5% <2cm 3%	Many fine fibrous	
30-40/44	SL	10 YR 3/2 V dk grey brown	None	Moderately developed Medium Sub-angular blocky	0.5-2%	>2cm 5% <2cm 6%	Common fine fibrous	Wavy boundary
40/44-80+	SCL	10 YR 4/4 Brown (rubbed)	Feint ochreous mottles but not gleyed	Too compacted to accurately assess structure	0.5-2%	>2cm 3% <2cm 5%	None	

Profile Details:

Plant Roots

Soil Fauna: Common worms

General Comments: Compacted material in parts of upper subsoil. Very compacted, hard and dry in lower subsoil following dry summer no SPL, main limitation droughtiness.

MINERAL SITE RECORD

Site Name: Church Lawford

SOIL PIT DETAILS

Pit Number: 2

Land use: Ploughed field

Slope: Level

Aspect: -

Depth	Texture	Munsell Colour	Mottles Abundance/ Colour	Structure Grade/Class/Type	Porosity	Stone Abundance/Type	Plant Roots	Comments
0-27	SL	10 YR 3/3 V dk gr br	None	Moderately developed Medium Sub-angular blocky	0.5-2%	> 2 cm 10% < 2 cm 8%	None (ploughed)	Straw incorporated
27-43	S + SCL matrix	10 YR 5/6 Yellowish brown	few feint ochreous mottles	Weakly Developed Fine sub-angular blocky breaking down to crumb	0.5-2%	> 2 cm 5% < 2 cm 10%	None	
43-80+	SC with S inclusions	10 YR 5/4 Yellowish brown	common feint ochreous mottles	Massive	0.5-2%	occ small pebbles (not sieved)	None	poss. calcareous

Profile Details:

Plant Roots

Soil Fauna:

General Comments: No SPL. Main limitation droughtiness

MINERAL SITE RECORD

Site Name: Church Lawford

SOIL PIT DETAILS

Pit Number: 3

Land use: Ploughed field

Slope: Level

Aspect: -

Depth	Texture	Munsell Colour	Mottles Abundance/ Colour	Structure Grade/Class/Type	Porosity	Stone Abundance/Type	Plant Roots	Comments
0-26	MCL	10 YR 3/2 V dk gr brown	None	Well developed coarse to Medium sub-angular blocky	0.5-2%	Occasional sub-angular + sub-rounded	Few fine fibrous (ploughed)	
26-63	HCL/ZCL	10 YR 4/2 Dr gr brown. 10 YR 4/4 on ped faces	common feint ochreous mottles grey ped faces	Well developed Medium to coarse sub-angular blocky	<0.5%	"	None	
63-80+	LS	10 YR 6/6 Brownish yellow	few feint ochreous mottles	Too compacted to accurately assess structure.	0.5-2%	Too dry and compacted to assess structure	None	occasional clay bands

Profile Details:

Plant Roots

Soil Fauna: None

General Comments: Main limitation wetness.

MINERAL SITE RECORD

Site Name: Church Lawford

SOIL PIT DETAILS

Pit Number: 4

Land use: Bare ground with volunteer crop

Slope: Level

Aspect: -

Depth	Texture	Munsell Colour	Mottles Abundance/ Colour	Structure Grade/Class/Type	Porosity	Stone Abundance/Type	Plant Roots	Comments
0-36	SL	10 YR 3/2 V dk gr brown	None	Moderately developed fine sub-angular blocky	2-5%	> 2cm 5% < 2cm 8%	Common fibrous to 20 cms	
36-56	LS	10 YR 5/4 Yellowish brown	"	Moderately developed medium to fine sub-angular blocky	0.5-2%	> 2 cm 20% < 2 cm 18% rounded and sub-angular	None	
56-100	LS	10 YR 6/6 Brownish yellow	"	crumb	0.5-2%	> 2 cm 20% < 2 cm 20%	None	

Profile Details:

Plant Roots

Soil Fauna:

General Comments: No SPL. Main limitation droughtiness