AGRICULTURAL LAND CLASSIFICATION

PASTURES ROAD, MEXBOROUGH

MAFF
Leeds Regional Office

July 1991
File Ref: 2FCS 5284
Project No: 020/91

lds.AL4.Pstrs.Rd

CONTENTS

AGRICULTURAL LAND CLASSIFICATION REPORT
ON LAND AT PASTURES ROAD, MEXBOROUGH

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:-	SE 490010.
Location Details:-	The site is located 9 km west of Doncaster between the northern outskirts of Mexborough and the River Dearne.
Site Size:-	93 hectares.

1.2 Survey Methods

Date Surveyed:-	9 May 1991.
Boring Density and Spacing Basis:-	1 boring per hectare at 100 m intervals based on the National Grid.
Sampling Method:-	By hand auger to a depth of 1 m.
Number of Borings:-	95.

All land quality assessments were made using the methods described in "Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988)".

1.3	**Land Use:-**	Agricultural land is almost entirely in arable use. There are also areas of disturbed derelict land on the south eastern edge of the site.

1.4 **Climate and Relief**

Average Annual Rainfall (AAR):-	593 mm
Accumulated Temperature above 0°C (January-June):-	1405 day °C
Field Capacity Days:-	125 days
Altitude average:-	20 m a.o.d.
maximum:-	35 m a.o.d.
minimum:-	15 m a.o.d.
Climatic limitation (based on interaction of rainfall and temperature values:-	None.

Relief:-	Flat towards the River Dearne. Gently and moderately undulating in the south.
Slopes (°):-	0° in the north, 1-6° in the south.
Gradient Limitations:-	None.

1.5 Geology and Soil

Solid Strata:-	Coal Measure sandstones and shales.
Depth of solid rock from surface:-	Sandstone occurs at < 1 m depth on some of the higher southern parts of the site.
Drift types:-	River alluvium.
Thickness of drift and distribution:-	More than 1 m on the floodplain adjoining the River Dearne.
Soil Types and Distribution:-	Heavy poorly drained alluvial soils in the north, light well drained, sometimes shallow soils in the central and south western parts of the site and medium to heavy textured imperfectly to poorly drained soils in the east.

Soil Textures (topsoils and subsoils):-	Sandy loam topsoils over similar or lighter subsoils in the central and south western areas. Medium or heavy clay loam topsoils and heavy clay loam or clay subsoils on the alluvium and on the Coal Measure shales in the east.
Soil Series/Associations:-	
On 1/250000 map:-	Rivington and Conway.
Soil Limitations and type:-	Heavy texture will give workability problems on the alluvial soils. Light shallow soils over sandstone are likely to suffer from varying degrees of droughtiness.

1.6 Drainage

Soil type and Wetness Class:-

Sandstone soils:-	Wetness Class I.
Coal Measure shales:-	Wetness Classes II and III.
Alluvial soils:-	Wetness Class III.

	Drainage Limitations:-		Slowly permeable subsoil horizons causing surface wetness, especially on the alluvial and clayey soils in Wetness Class III.
1.7	Other Limitations:-	Flood Risk:-	Recent drainage improvements are likely to have reduced the risk of flooding on the Dearne floodplain in the north. According to the NRA the North Ings area is now likely to flood only occasionally, that is about 1 in 14 years. Soil factors are thus now more limiting than flood risk.

2.0 Agricultural Land Classification Grades

The ALC grades occurring on the site are as follows:-

Grade/Subgrade	Hectares	Percentage of Agricultural Area	Percentage of Total Area
2	24.86	28.8	26.5
3a	29.68	34.3	31.7
3b	31.20	36.1	33.4
4	0.68	0.8	0.7
Non Agricultural	7.2		7.7
Total	93.62	100	100

Grade 2

Distribution on site:-	Common on the higher ground above the Dearne floodplain.
Soil Type(s) and Texture(s):-	Well drained soils formed on sandstone consisting of medium sandy loam topsoils over similar or sometimes heavier subsoils.
Depth to Slowly Permeable Layers:-	More than 80 cm in most profiles. Some profiles with heavy clay loam lower subsoils are slowly permeable between 60-80 cm depth.
Wetness and Drainage Class:-	Wetness Classes I and II, well drained to moderately well drained.
Stone Percentage and Type:-	Up to 10% of sandstone in the topsoil in a few places.
Grade Limiting Factors:-	Soil droughtiness.

Subgrade 3a

Distribution on site:-	Mainly on the higher ground above the Dearne floodplain in the central and south eastern parts of the site. A small area also occurs on the alluvial soils in the north west.
Soil Type(s) and Texture(s):-	Medium clay loam topsoils over similar upper subsoils passing to slowly permeable clay or heavy clay loam lower subsoils on profiles formed on Coal Measures derived material. Heavier topsoil textures occur on the alluvial soils in the north west.
Depth to Slowly Permeable Layers:-	About 35 cm on the Coal Measure soils and 65 cm on the alluvial soils.
Wetness and Drainage Class:-	Coal Measure soils:- Wetness Class III, imperfectly drained. Alluvial soils:- Wetness Class II.
Stone Percentage and Type:-	About 5% sandstone in topsoils on the Coal Measure soils. Alluvial soils are stoneless.
Grade Limiting Factors:-	Wetness and workability problems.

Subgrade 3b

Distribution on site:-	Widespread on the Dearne floodplain and on the highest ground near the playing field.
Soil Type(s) and Texture(s):-	Mainly heavy clay loam topsoils over similar subsoils on the alluvium on the Dearne floodplain. Medium sandy loam topsoils and upper subsoils over sandstone on the highest ground, and heavy clay loam over silty clay on the Coal Measures in the east.
Depth to Slowly Permeable Layers:-	Generally between 35-60 cm on both the alluvium and Coal Measures. No slowly permeable horizons on the sandstone soils.
Wetness and Drainage Class:-	Wetness Class I on the sandstone. Wetness Class III on the heavy land. See comments at 1.7 on flood risk on the Dearne floodplain.
Stone Percentage and Type:-	Up to 15% sandstone on the light shallow soils. The alluvial soils are usually stoneless.
Grade Limiting Factors:-	Droughtiness on the light soils over sandstone. Wetness and workability problems on the heavier land.

Other Limiting Factor(s):-	Restored land:-	The subgrade 3b area south of the path in the western part of the site contains some soils formed on restored and disturbed land. Profiles on land of this type are limited to subgrade 3b by soil compaction problems, and by the occurrence of overburden within 50-60 cm of the surface.

Grade 4

Distribution on site:-	Small waterlogged areas on the Dearne floodplain.
Soil Type(s) and Texture(s):-	Alluvial soils consisting of heavy clay loam topsoils over similar subsoils.
Depth to Slowly Permeable Layers:-	35 cm.
Wetness and Drainage Class:-	Probably Wetness Class V because of the enclosed receiving situation of these areas. Recent drainage improvements do not appear to have made any significant changes to the area on the northern boundary, which is likely to remain waterlogged for long periods of the year.
Stone Percentage and Type:-	Stoneless.
Grade Limiting Factors:-	Severe wetness problems.
Other Limiting Factor(s):-	

Non Agricultural

Type and location of land included:- Derelict disturbed and tipped areas on the eastern boundary.

Resource Planning Group
Leeds Regional Office
July 1991

MAP(S)