AGRICULTURAL LAND CLASSIFICATION

AND

STATEMENT OF PHYSICAL CHARACTERISTICS

STAR FARM, NETHERTON, WEST YORKSHIRE

MAFF
Leeds Regional Office

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lds.AL3.Star.frm

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1. AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED OPENCAST COAL SITE AT STAR FARM, NETHERTON, WEST YORKSHIRE

Introduction

This 22.1 hectare site is located about 1 km south east of Netherton in West Yorkshire around National Grid Reference of SE 280154. Survey work was carried out in March 1991 when soils were examined by hand auger borings at 22 points predetermined by the National Grid. In addition two soil profile pits were dug to collect data on soil morphology.

Climate and Relief

Salient climatic parameters are as follows:-

Average Annual Rainfall (mm)		669
Accumulated Temperature Above 0°C (Jan-June)		1347
Field Capacity Days		168
Moisture Deficit (mm)	Wheat	98
	Potatoes	86

The rainfall and temperature figures indicate that there is no overall climatic limitation on ALC grade.

Altitude ranges from 137 m near Stocksmoor Farm to 61 m along Blacker Beck. Slopes range from 2° to 11°, generally with an easterly aspect.

Geology, Soils and Drainage

Soils are all derived from weathering Carboniferous Coal Measures, mostly shales with small localised areas of sandstone. An area towards the centre of the site has been restored after previous opencast workings.

Across much of the site topsoils consist of medium to heavy clay loam or silty clay loam over a clayey, slowly permeable subsoil (Wetness Class IV). Where those soils have been restored subsoils exhibit poor structural development. Soils developed over sandstone which are found in a small area in the northern part of the site tend to be shallow, freely drained and stony, usually with sandy loam or sandy clay loam top and subsoil.

AGRICULTURAL LAND CLASSIFICATION

Subgrade 3a (1.7 hectares, 7.5% of total area)

This small area in the east contains medium clay loam or sandy clay loam topsoils and upper subsoils over a clayey slowly permeable subsoil (Wetness Class III). Soil wetness and workability are the principal limiting factors.

Subgrade 3b (20.4 hectares, 92.5% of total area)

Included within the subgrade 3b area are soils with a medium or heavy clay loam topsoil and a clayey, slowly permeable subsoil (Wetness Class IV). This includes both restored and natural profiles. These soils have a significant soil wetness and workability limitation. Also included within this subgrade is a small area in the north containing light textured stony soils with a droughtiness and stoniness limitation.

2. STATEMENT OF PHYSICAL CHARACTERISTICS

Soils on the site are all derived from Coal Measure Deposits and only one soil type is present. Topsoil and subsoil resources are shown on the accompanying maps, along with soil depth and volume information.

1. Heavy Textured Soil Derived From Coal Measure Shales

This soil type covers the whole site and shows little variation. A small area of lighter textured soil too small to separate is also included within the unit. Also included within this area is a heavy textured restored soil (see map). Soil textures here are similar although subsoils are more compacted.

Topsoils are medium to heavy often with rusty root mottles and a few shale fragments. They have a medium to coarse angular blocky structure. This unit corresponds with T1 on the accompanying soil resource map.

Subsoils are again heavy textured and mottled with a few angular shale fragments. Structures are generally coarse prismatic except in the restored area where structure is massive.

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3. SOIL PROFILE DESCRIPTIONS

Profile Pit A: Restores Soil

Slope: 3° SE
Land Use: Grass
Recent Weather: Mild and Wet

Horizon depth
(cm)

0-25 Dark grey (10YR 4/1) heavy silty clay loam, common distinct light yellowish brown (10YR 6/4) mottles, very slightly stony with a few angular shale fragments; wet; weakly developed coarse angular blocky structure; few pores and fissures; moderately firm soil strength; many fine fibrous roots; clear wavy boundary.

25-45 Dark grey (2.5Y 4/0) silty clay; many distinct brownish yellow (10YR 6/6) and grey (10YR 6/1) mottles; common small and medium angular shale fragments; moist; weakly developed coarse platy structure; very few fine pores and fissures; deformable; few fine fibrous roots; clear smooth boundary.

45-100 Dark grey (5Y 4/1) clay with common distinct brownish yellow (10YR 6/6) mottles; many medium and small angular shale fragments; moist; massive; very few fine pores and fissures; deformable; very few fine fibrous roots.

Profile Pit B: Undisturbed Soil

Slope: 5° SSE
Land Use: Grass
Recent Weather: Mild and Wet

Horizon depth (cm)	
0-23	Dark greyish brown (2.5Y 4/2) with few faint reddish yellow (7.5YR 6/8) root mottles; heavy silty clay loam; very slightly stony with a few small subrounded sandstones and small angular shale fragments; wet; moderately developed medium angular blocky structure; few fine pores and fissures; moderately firm soil strength; many fine fibrous roots; abrupt wavy boundary.
23-100	Light grey (2.5Y 7/2) with many distinct yellow (10YR 7/6) mottles; silty clay; very slightly stony with few small and medium angular sandstones; moist; well developed coarse prismatic; few very fine pores and fissures; moderately firm soil strength; few fine fibrous roots.