

AGRICULTURAL LAND CLASSIFICATION
and
STATEMENT OF PHYSICAL CHARACTERISTICS

Jerry Clay Lane, Wrenthorpe
Wakefield, Yorkshire

MAFF
Leeds Regional Office

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1. Agricultural Land Classification Report on the Proposed Opencast Coal Site at Jerry Clay Lane, Wrenthorpe, Wakefield, West Yorkshire.

1.1 Introduction

The site is located at National Grid Reference SE 305230 1 Km South of Junction 41 on the M1. It covers an area of about 21 hectares most of which is in agricultural production with rhubarb dominating. There is a small area of uncultivated land in the south west which has been placed in a non-agricultural category and an area of derelict land surrounding an old colliery site in the north east.

Survey work was carried out in November 1990 when soils were examined by hand auger borings at 21 points pre-determined by the National Grid. In addition a soil pit was dug to collect data on soil morphology and to provide samples for laboratory analysis.

Land quality assessments were made using the revised guidelines published by MAFF in 1988.

1.2 Climate and Relief

Average annual rainfall is approximately 637 mm. The accumulated temperature above 0°C (January to June) is 1343 day°C and the site is at field capacity for a period of around 152 days each year. These factors indicate there is no overall climatic limitation on ALC grade.

Altitude ranges from 85 metres above Ordnance Datum (aod) on the northern edge of the site to about 60 metres aod in the south west with an average of around 78 m aod. Slopes are generally no greater than 7° though the non-agricultural area has gradients of up to 15°.

1.3 Geology and Soils

Soils on the site are formed over Coal Measure shales which weather to form heavy clay soils. These consist of heavy or medium clay loam

topsoils over clay or silty clay to depth. These soils under natural conditions are slowly permeable immediately below the topsoil, usually at a depth of 25-30 cm and fall within Wetness Class IV. On this site, however, topsoil depth has been increased in places by the addition of cinders and other imported material in an attempt to improve drainage and workability for growing rhubarb and other vegetables. Although workability has been improved the distribution of deeper (topsoil of more than 40 cm thickness) better drained soil is patchy and it is possible to separate better quality land in only one part of the site.

1.4 Land Use

All agricultural land is in arable use. Rhubarb and other vegetables cover a large part of the site. The non-agricultural area is covered by scrub woodland and rough grass.

1.5 Agricultural Land Classification Grades

Grade	Area (hectares)	Percentage of total Area
3a	0.7	3.7
3b	14.8	79.2
Urban	1.2	6.4
Non agricultural	<u>2.0</u>	<u>10.7</u>
Total	18.7	100

Subgrade 3a

Land in this sub grade occurs as a thin strip in the north western part of the site where the topsoil is deep due to downslope wash and the cultivation methods used in growing rhubarb and other vegetables. Soils consist of medium clay loam topsoils with slowly permeable clay occurring at a depth of about 50 cm. These soils fall into Wetness Class III and are limited to the subgrade by wetness and workability problems.

Subgrade 3b

Most of the site falls within this subgrade. Soils consist of medium or heavy clay loam topsoils of variable thickness, often containing cinders and other rubble, over strongly gleyed slowly permeable clay subsoils. The clay sometimes passes into weathering shale at about 70-80 cm depth. These soils are poorly drained and fall into Wetness Class IV. They are limited to subgrade 3b by wetness and workability problems which are more restricting than on the area of subgrade 3a land.

Urban

This consists of the old colliery site adjoining Jerry Clay Lane. Much of it consists of colliery shale and more recent fly-tipped rubble.

Non-Agricultural

The scrub and derelict land in the south west near Engine Fold Farm falls within this category.

2. Statement of Physical Characteristics
(Soil Properties and Resources)

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

2.1 Heavy textured soil derived from coal measures

This soil type covers the whole site, except for the derelict colliery area, and varies little other than in the depth of topsoil.

Topsoil

Topsoil textures are generally medium or heavy, usually of medium or heavy clay loam with a mean thickness of 35 cm. Structure is typically moderately developed coarse sub angular blocky. Stone content is usually less than 5%. The topsoil corresponds with unit T1 on the accompanying resource map.

Subsoil

Subsoils are heavy in texture, mainly of silty clay or clay and sometimes with a heavy clay loam horizon immediately below the topsoil. Structure is moderately developed coarse prismatic. The subsoil corresponds with unit S1 on the accompanying resource map.

JERRY CLAY LANE, WRENTHORPE

Soil Profile Description:- Soil Pit A

Heavy Clay Soil (Dale series)

Land Use: Rhubarb

Gradient: 3°SW

Slowly permeable horizon:- 40 cm depth

Wetness Class: IV

Horizons

(cm)

0-40 Very dark greyish brown (10 YR 3/2) heavy clay loam with a few distinct yellowish brown (10 YR 5/0) mottles of subsoil material; very slightly stony with a few angular shale, sandstone and cinder fragments; moist; moderately developed coarse subangular blocky structure; medium packing density but compacted at base; moderately porous with common fine pores and fissures; moderately firm, moderately sticky and very plastic; few very fine fibrous and a few very coarse fleshy (rhubarb) roots; non calcareous; sharp smooth boundary.

40-100 Brown (10 YR 5/3) silty clay with many prominent medium and coarse yellowish brown 10 YR 5/6 and light grey (10 YR 7/1) mottles; stoneless; moist; moderately developed coarse prismatic structure; high packing density; slightly porous with few fine pores; very firm ; very sticky and very plastic; few very fine fibrous roots; non calcareous.