

AGRICULTURAL LAND CLASSIFICATION

CUMBRIAN COAL LOCAL PLAN  
DEAN MOOR, BRANTHWAITE

MAFF LEEDS REGIONAL OFFICE

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Lds.AL2.Dean.Moor

CONTENTS

1. Introduction and Site characteristics
2. Agricultural Land Classification

MAP

1. Agricultural Land Classification

## AGRICULTURAL LAND CLASSIFICATION

CUMBRIAN COAL LOCAL PLAN:- DEAN MOOR, BRANTHWAITE, CUMBRIA

### 1. Introduction and Site Characteristics

Dean Moor is located about 7 km south east of Workington centred around grid reference NY 047230, immediately south of the existing Potato Pot open cast coal site. The eastern, northern and southern boundaries are formed by the minor roads, whilst woodland forms much of the western boundary. It covers a total area of 206.6 hectares, nearly all of which is currently in agricultural use.

ALC survey work was carried out in September 1990 when soils were examined using hand auger borings at points predetermined by the National Grid. The density of borings was one per hectare. In addition small soil examination pits were dug to study soil structure in more detail.

#### 1.1 Relief and Climate

Average altitude is about 140 m a.o.d. but ranges from a minimum of 110 m a.o.d. on the northern boundary to a maximum of 210 m a.o.d. on the southern edge of the site.

Salient climatic parameters at Dean Moor vary according to altitude and are as follows:-

Altitude (m)	110	130	200
Average Annual Rainfall (mm)	1359	1418	1627
Accumulated Temperature above 0°C (Jan-June)	1282	1259	1180
Field Capacity Days	289	297	327
Moisture Deficit (mm) Wheat	53	46	25
Potatoes	30	21	0

The above combinations of rainfall and temperature place an overall climatic limitation of subgrade 3b on land between 110 m and 130 m a.o.d and Grade 4 on land above 130 m a.o.d.

Relief is moderately undulating on the central and northern parts of the site and slopes are rarely steep enough to limit the use of agricultural machinery. The southern part of the site, however, consists of a steeply to very steeply sloping (16-30°) north facing hillside cut by a narrow gill with precipitous slopes exceeding 36°. In much of this area gradient imposes an overall limitation on ALC grade.

### 1.2 Geology, Soils and Drainage

North of the hillside forming the southern part of the site, the underlying Coal Measures are largely hidden by a superficial layer of glacial and post glacial drift. This consists mainly of medium to heavy textured, moderately stony boulder clay. Topsoils tend to be of medium, sometimes peaty clay loam, over a clay loam or sandy clay loam, slowly permeable subsoil (Soil Wetness Class IV or V). Moderate stoniness is common throughout many soil profiles and often makes augering below 80 cm depth difficult.

The steeply sloping escarpment in the south is underlain by Coal Measure shales at the foot of the hillside and by the reddish Whitehaven Sandstone on the higher ground. Soils on the Coal Measure consists of medium or heavy, sometimes humose clay loam topsoils over gleyed, slowly permeable clay or shale subsoils (Wetness Class V). Soils on the sandstone vary from deep peat (Wetness Class VI) to thin peaty soils over sandstone rubble.

### 1.3 Land Use

The northern and eastern lower lying parts of the site, below about 150 m a.o.d, are almost all under productive improved pasture. The high ground in the south consists largely of rough moorland vegetation containing a

few partially improved areas. There is also an area of rough boggy ground in the north west corner of the site and a small patch of newly planted woodland in the central northern area.

#### 1.4 Agricultural Land Classification

##### 1.4.1 Subgrade 3b (41.7 hectares, 20% of total area)

Subgrade 3b land is widespread on the lower lying land in the north. Topsoils consist of medium clay loam or silty clay loam over a similar or heavier textured slowly permeable subsoil (Wetness Class IV). Soil wetness along with the overriding climatic limitation are the principal limiting factors on this land.

##### 1.4.2 Grade 4 (128.7 hectares, 62.5% of total area)

Grade 4 land occurs across the central part of the site below the escarpment and as smaller areas on the high ground adjoining the southern boundary. Soils on the lower lying land are similar to those in the subgrade 3b area, but are limited to Grade 4 by the overall climatic limitation applying to all land above 135 m a.o.d. On the higher ground soils consist generally of thin peaty topsoils over relatively free draining sandy loam or sandstone rubble. These are also restricted to Grade 4 by the overall climatic limitation. The smaller area of Grade 4 land in the north west corner is restricted to this grade by wetness.

##### 1.4.3 Grade 5 (35.1 hectares, 17% of total area)

Land in this Grade occurs mainly on the sandstone area in the south. Soils on the gently and moderately sloping areas consists of deep peat or peaty topsoils over waterlogged gleyed slowly permeable heavy clay loam subsoils. Soils of this type fall within Wetness Class VI and are restricted to the Grade by severe wetness problems which are very

difficult to remedy. On the very steeply sloping ground, especially in Thief Gill, soils are relatively well drained, but are restricted to Grade 5 by slopes in excess of 18°.

1.4.4 Non Agricultural Land (1.1 hectares) 0.5% of total area.

This consists of the area of newly planted woodland in the central northern part of the site.

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