MAFF Ministry of Agriculture Fisheries and Food

STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION PROPOSED OCCS AT COXHOE OLD QUARRINGTON CO DURHAM APRIL 1995

ADAS
Leeds Statutory Group

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SUMMARY

A detailed Statement of Physical Characteristics and Agricultural Land Classification Survey of 37.4 ha of land at Old Quarrington near Coxhoe, County Durham was carried out in mid April 1995.

One soil type covers the whole site. Soils consist of medium clay loam topsoils over heavy textured slowly permeable subsoils developed on boulder clay. A small area to the north is better drained, with permeable upper subsoils.

4.9 ha were Subgrade 3a. Moderate soil wetness restriction being the limiting factor.

30.8 ha of Subgrade 3b were mapped. Severe soil wetness and workability restrictions limit this land to this Subgrade.

The remaining land, 1.7 ha, consists of non-agricultural, urban and farm buildings.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED OCCS AT OLD QUARRINGTON, COXHOE, COUNTRY DURHAM

1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Location and Survey Methods

A detailed survey of 37.4 of land at Old Quarrington (National Grid Reference NZ 315 375) was carried out in mid April 1995. Soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. Two soil profile pits were also dug to describe the soils in greater detail. 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).

1.2 Land Use and Relief

At the time of the survey the land was under cereals, set-aside, ploughed, and in the south west, horticultural. Relief varies from level to gently sloping (0-3°).

Altitude ranges from 90m AOD in the north west to 115m AOD in the north east.

1.3 Climate

Grid Reference	: NZ 315 375
Altitude (m)	: 100
Accumulated Temperature above 0°C (January - June)	: 1258 day °C
Average Annual Rainfall (mm)	: 680
Climatic Grade	: 2
Field Capacity Days	: 173
Moisture Deficit (mm) Wheat	: 89
Moisture Deficit (mm) Potatoes	: 74

1.4 Geology, Soils and Drainage

Solid geology consists of middle coal measures over which lies a layer of boulder clay and undifferentiated drift.

One soil type is found over the site. It consists of a very slightly stony medium clay loam topsoil overlying a gleyed slowly permeable subsoil. These soils are poorly drained falling into Wetness Class IV. A small area to the north has a gleyed permeable heavy clay loam upper subsoil, in turn over slowly permeable clay subsoils. These soils are imperfectly drained falling into Wetness Class III.

These soils correspond to the Dunkeswick Association as mapped by the Soil Survey and Land Research Centre (1984).

1.5 Soil Properties

One main soil type occurs on this site, descriptions of which are given below. Topsoil and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

(a) Soil Type 1:- Medium over heavy textured soils (Unit T1/S1)
(Full Profile Description, Tables 1 and 2).

This soil formed on boulder clay occurs over the whole of the site. It is characterised by medium clay loam topsoils over gleyed slowly permeable coarse prismatic heavy textured subsoils.

1.6 Soil Resources

(i) Topsoils

Unit T1. This unit consists of a very slightly stony (1-2% small to medium hard stones), very dark greyish brown, medium textured soil. It has a moderately developed coarse subangular structure. Mean unit thickness is 25cm.

(ii) Subsoils

Unit S1. This unit is found below topsoil T1. It is heavy textured and greyish brown with common brownish yellow mottling. It is very slightly stony (1-2% medium soft sandstones) and has a weakly developed coarse prismatic structure. Mean unit thickness is 95cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 Medium over heavy-textured soils T1/S1

Profile Pit 1 (Near Auger boring 5)

Slope:- 3°W
Land Use:- Set-aside
Weather:- Cold, snow

Depth cm	**Horizon Description**
0-25	Dark brown (10YR 3/3) medium clay loam; unmottled; very slightly stony (1-2%) small and medium subrounded hard stones; moderately developed coarse subangular blocky structure; firm; common fine fibrous roots; slightly sticky; slightly plastic; non calcareous; smooth abrupt boundary.
25-55	Grey (10YR 5/1) heavy clay loam; common distinct brownish yellow (10YR 6/8) mottles; stoneless; few fine fibrous roots; moderately developed coarse subangular blocky; firm; moderately sticky; moderately plastic; non calcareous; smooth clear boundary.
55-120	Dark grey (25YR 4/0) clay; common distinct strong brown (75YR 5/6) mottles; stoneless; no roots; very slightly porous; very firm; moderately developed medium and coarse prismatic; moderately sticky; moderately plastic; non calcareous.

Table 2 Medium over heavy textured soil T1/S1

Profile Pit 2 (Near auger boring 26)

Slope:- 2° S
Land Use:- Set-aside
Weather:- Cold, snow

Depth cm	**Horizon Description**
0-25	Very dark greyish brown (10YR 3/2) medium clay loam; unmottled; very slightly stony (2% small rounded hard stones and coal fragments); moderately developed coarse subangular blocky; firm; common fine fibrous roots; slightly sticky; slightly plastic, non calcareous; smooth abrupt boundary.
25-120	Greyish brown (10YR 5/2) clay; many distinct brownish yellow (10YR 6/8) mottles; stoneless; few fine fibrous roots; weakly developed coarse prismatic; very slightly porous; very firm; moderately sticky; moderately plastic; non calcareous.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2		
3a	4.9	13.1
3b	30.8	82.3
4		
5		
(Sub total)	(35.7)	(95.4)
Urban	0.3	0.8
Non Agricultural	1.3	3.5
Woodland - Farm		
- Commercial		
Agricultural Buildings	0.1	0.3
Open Water		
Land not surveyed		
(Sub total)	(1.7)	(4.6)
TOTAL	37.4	100

3.1 Subgrade 3a

Soils within the subgrade consist of very slightly stony medium clay loam topsoils over gleyed permeable heavy clay loam upper subsoils, in turn over gleyed slowly permeable subsoils. The slowly permeable layer occurs at 55cm. These soils are imperfectly drained falling into Wetness Class III and are limited to Subgrade 3a by moderate soil wetness and workability restrictions.

3.2 Subgrade 3b

The remaining soils fall within this Subgrade. Soils consist of very slightly stony medium clay loam topsoils over gleyed slowly permeable clay subsoils. Slowly permeable layers occur within 40cm depth. These soils are poorly drained falling into Wetness Class IV and are limited by severe wetness and workability restrictions.

3.3 Non-Agricultural

Non-agricultural consists of a strip of trees and shrubs running north to south through the site.

3.4 Urban

Urban land consists of a small area of hard standing in the far south west for car parking, and a small farm shop.

3.5 Agricultural Buildings

These consist of a chicken run and polytunnel for propagation.

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MAPS