MAFF Ministry of Agriculture Fisheries and Food

GROVE FARM, MORLEY
PROPOSED OPEN CAST COAL SITE
VALIDATION OF SOILS AND AGRICULTURAL
LAND CLASSIFICATION REPORT
OCTOBER 1993

ADAS
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GROVE FARM, MORLEY: PROPOSED OCCS

VALIDATION OF SOILS AND AGRICULTURAL LAND CLASSIFICATION AND PHYSICAL CHARACTERISTICS REPORT PREPARED BY M R WALKINTON OF ADAS CONSULTANCY, LEEDS FOR MILLER MINING

1.0 INTRODUCTION

The site lies approximately 5km south-south-east of Leeds city centre and is centred on National Grid Reference SE 283283. It covers a total area of approximately 22ha.

A survey to validate the report prepared by ADAS Consultancy for Miller Mining was carried out in September 1993. Soils were examined by hand auger borings at a density of one boring per two hectares at points predetermined by the National Grid. Extra borings were made where necessary to determine grade boundaries and two soil profile pits were dug to allow full descriptions to be made.

1.1 CLIMATE AND RELIEF

Grid Reference	: SE 283 283
Altitude (m)	: 80
Accumulated Temperature above °C (January to June)	: 1330 day°C
Average Annual Rainfall (mm)	: 685
Climatic Grade	: 1
Field Capacity Days	: 167
Moisture Deficit (mm) Wheat	: 95
Moisture Deficit (mm) Potatoes	: 83

The above figures are slightly different from those in the ADAS Consultancy report, probably as a result of a slightly different site altitude having been used. These differences have no significant effect on the land quality.

Site altitude varies from 95m AOD in the south-west of the site to 70m AOD in the north-east. The site is gently to strongly sloping (typically 2-8°) with an easterly or north-easterly aspect.

1.2 GEOLOGY AND SOILS

The site is underlain by Carboniferous Coal Measures consisting of interbedded sandstones (which occur within one metre of the soil surface in the north-west of the site) and shales. There are no drift deposits (with the exception of locally derived head) and the soils have developed in weathering bedrock.

The validation survey confirms that the distribution of soil types is accurately shown in appendix 4 of the report prepared for Miller Mining. However, it should be noted that no information is provided on the stripping depths for the topsoil, upper subsoil and lower subsoil units. To rectify the absence of this information a description of the soil mapping units (using both the ADAS Consultancy and Validation Survey data) along with maps and soil thickness and volume information is given in Appendix 1 of this report. It should also be noted that Mapping Unit 1 does not uniformly consist of medium clay loam/medium silty clay loam topsoils and upper subsoils overlying heavy clay loam/heavy silty clay loam lower subsoils (as described in page 2 of the report). The validation survey suggests that medium clay loam or medium silty clay loam subsoils extend to depth over much of the north and east of the site. Further evidence of this is to be found in the Soil Auger Boring Classification (Appendix 2) of ADAS's report for Miller Mining.

Despite this, the stripping; storage and replacement recommendations should, if followed, be adequate to ensure restoration to a similar quality as exists at present.

2.0 AGRICULTURAL LAND CLASSIFICATION

The validation survey confirms the general distribution of ALC grades shown in ADAS Consultancy's Appendix 6 with the following minor exceptions:-

1. There appears to be no land of Subgrade 3a quality to the south of Grove Farm nor in the south-western corner of the site. Both of these areas would be more accurately mapped as Subgrade 3b.

2. There is a barrow band of Subgrade 3b land in the north-west which runs along the northern boundary of the site.

The ALC grades and subgrades mapped during the validation survey are shown, along with area information on the map in Appendix 2 of this report.

3. CONCLUSION

The validation survey carried out in September 1993 confirmed that the report prepared for Miller Mining is, in general, a fair representation of the land quality and soil resources occurring at Grove Farm. Minor differences, however, are noted in the texture of the lower subsoil in parts of the site and in the extent/occurrence of Subgrade 3a/Subgrade 3b land.

Resource Planning Team
Leeds Statutory Centre
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APPENDIX 1

A. Soil Properties

Three main soil types occur on the 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:- Shallow medium-textured soils (Unit T1/U1/ Weathering Sandstone bedrock)

This soil, formed over weathering sandstone, occurs in the north-west of the site. It is characterised by light to medium-textured (medium sandy loam or medium clay loam) topsoils and upper subsoils which are slightly stony.

b. Soil Type 2:- Medium-textured topsoils and upper subsoils over heavy-textured lower subsoil (T1/U1/S1B

This soil, formed over weathering shale, occurs over most of the site. It is characterised by very slightly stony medium clay loam topsoils and upper subsoils overlying heavy clay loam or clay lower subsoils.

c. Soil Type 3:- Medium-textured topsoil over heavy-textured subsoil (T1/S1A)

This soil, also formed over weathering shale, occurs in a band across the south of the site and in a smaller area in the north. It is characterised by the slowly permeable heavy clay loam or clay subsoils lying directly below the medium-textured topsoils.

B. Soil Resources

i. Topsoil

Unit T1 occurs across the whole site. It is generally medium-textured (typically medium clay loam) and very slightly to slightly stony. It has a moderately

developed fine to medium subangular blocky structure and a mean thickness of 30cm.

ii. Subsoils

a. Upper Subsoil

Unit U1 occurs over most of the site. It is medium-textured (medium clay loam) and very slightly stony. It has a moderately developed coarse subangular to angular blocky structure and a mean thickness of 40cm.

b. Lower Subsoil

Unit S1A occurs in a band across the south of the site and in a small area in the north. It is heavy-textured (typically heavy clay loam or clay) and has a moderately developed medium to coarse prismatic structure. Mean thickness is 90cm.

Unit S1B occurs over most of the remainder of the site. In terms of both texture and structure it is the same as Unit S1A but it's mean thickness is only 50cm.

APPENDIX 1

SOIL RESOURCE MAPS

APPENDIX 2

AGRICULTURAL LAND CLASSIFICATION MAP