

**SOUTH TYNESIDE UDP
LAND SOUTH OF
FORMER MONKTON
COKEWORKS
TYNE AND WEAR**

**Agricultural Land Classification
AUGUST 1996**

**Resource Planning Team
Leeds Statutory Group
ADAS Leeds**

**ADAS Reference: 72/96
MAFF Reference: EL 30/07
LUPU Commission: N 2776**

RPT20,055

AGRICULTURAL LAND CLASSIFICATION REPORT
SOUTH TYNESIDE UDP. LAND SOUTH OF FORMER MONKTON
COKEWORKS

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 8.5 ha of land south of the former cokeworks at Monkton, South Tyneside. The survey was carried out during July 1996.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit, Northallerton in connection with South Tyneside UDP.
3. The work was conducted by members of the Resource Planning Team in the Leeds Statutory Group in ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the land on the site was all under grass and had recently been cut for a conservation crop.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5000. It is accurate at this scale but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
3b	8.5	100	100
Other land	-	-	-
Total surveyed area	8.5	100	100
Total site area	8.5	100	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of nine borings and one soil pit were described.
8. All land on the site was Subgrade 3b, moderate quality agricultural land. Soil wetness and workability limit the ALC grade of this land.

Factors Influencing ALC Grade

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	NZ 317 623
Altitude	m, AOD	35
Accumulated Temperature	day°C (Jan-June)	1321
Average Annual Rainfall	mm	642
Field Capacity Days	days	157
Moisture Deficit, Wheat	mm	96
Moisture Deficit, Potatoes	mm	83

11. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean no overall climatic limitation occurs on the site.

Site

14. The site is mostly level although land rises slightly in the extreme north west of the site where Mill Lane crosses the railway line.

Geology and soils

15. Soils on the site are all derived from Pelaw Clay drift deposits. Pelaw Clay is a relatively stoneless flow till commonly found in this area. It forms a thick cover over the underlying Carboniferous Coal Measures below. (British Geological Survey, Sheet 21 Solid and Drift, 1:50 000, Sunderland, 1978)

16. Soils are derived directly from the Pelaw Clay and typically have a medium textured topsoil over a clayey, gleyed, slowly permeable subsoil. Profiles are Soil Wetness Class IV and subject to a significant soil wetness and workability limitation. These soils correspond to the Foggathorpe I association as mapped by the Soil Survey and Land Research Centre.

Agricultural Land Classification

17. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

Subgrade 3b

18. The whole site is Subgrade 3b. Soils on the site have medium textured topsoils over clayey, slowly permeable subsoils. Soils are Wetness Class IV (see Appendix II) and subject to a significant soil wetness and workability limitation. This limitation restricts the ALC grade of the land to Subgrade 3b.

File Ref: RPT 20055
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SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. 21, Sunderland Solid and Drift.*
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 1, Northern England.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England*
SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. ²
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

¹ The number of days is not necessarily a continuous period.

² 'In most years' is defined as more than 10 out of 20 years.