

**LAND AT WHYNDYKE FARM,
BLACKPOOL**

**Agricultural Land Classification
ALC Map and Report
May 1998**

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**RPT Reference: 125/97 & 25/RPT/0834
FRCA Reference: EL 21/11775
LURET Job Number: ME2JWTQ**

AGRICULTURAL LAND CLASSIFICATION REPORT LAND AT WHYNDYKE FARM, BLACKPOOL

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 76.3 ha of land located next to Junction 4 of the M55 on the outskirts of Blackpool. The survey was carried out during April 1998.
2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) in connection with a proposed retail and leisure park. The results of this survey supersede any previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988).
4. At the time of survey the agricultural land on this site was under permanent grass, cereals, oilseed rape or had been recently ploughed.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	14.4	21	19
3b	51.3	75	67
4	3.0	4	4
Other Land	7.6	-	10
Total surveyed area	68.7	100	-
Total site area	76.3	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 78 borings and five soil pits were described.

8. The agricultural land on this site has been classified as Subgrade 3a (good quality), Subgrade 3b (moderate quality) and Grade 4 (poor quality), the key limitations being soil wetness and gradient.

9. The area of good quality land is located on the lower lying land in the north-east of the site. The underlying peat and river alluvium influences these soils which commonly comprise an organic clay loam topsoil over a loamy peat and peat subsoil. At the time of survey the soils were saturated close to the surface which, combined with the field capacity days figures for the site results in a soil wetness limitation.

10. Land of moderate quality is mapped over most of the rest of the site. The soils commonly comprise a medium clay loam topsoil overlying a heavy clay loam upper subsoil, overlying a gleyed and slowly permeable clay subsoil. In the local climate the depths to gleying and the slowly permeable layer place these soils in Subgrade 3b. This limits agricultural land use by affecting plant growth and by imposing restrictions on cultivations or grazing by livestock. Included in this area is a narrow strip where the land rises up sharply from the area of organic soils in the north-east of the site, resulting in gradients sufficient to place the land in Subgrade 3b. In the north east of the site a small area of organic soils has also been mapped within this unit.

11. Land of poor quality is mapped on the steep slopes and an area of wet land in the north of the site. In the wet area soils comprise an organic heavy clay loam topsoil over humified peat on to fibrous peat. These profiles are wet throughout and had standing water in places at the time of the survey. In the local climate the degree of soil wetness, coupled with heavy topsoil textures, is sufficient to place this land in Grade 4. On the steep slope rising up to the west of the wet area the gradient is sufficient to also place this land in Grade 4.

FACTORS INFLUENCING ALC GRADE

Climate

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

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

14. 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.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SD 355 341
Altitude	m, AOD	10
Accumulated Temperature	day°C	1428
Average Annual Rainfall	mm	915
Field Capacity Days	days	205
Moisture Deficit, Wheat	mm	81
Moisture Deficit, Potatoes	mm	67

15. 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 (AT0, January to June), as a measure of the relative warmth of a locality.

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. Local climatic factors, such as exposure and frost risk, are not believed to *significantly affect the site. The site is climatically Grade 1.*

Site

17. The site lies at altitudes in the range 5-15 m AOD and is undulating in character. The land is lowest in the north and east of the site, and then rises along a ridge running roughly north west to south east. Many of the slopes along the ridge are sufficient to restrict agricultural land quality to Subgrade 3b and Grade 4 in places. Beyond the ridge over the rest of the site the land is undulating in character with many small ponds.

Geology and soils

18. The published geological information for the site (BGS sheet 66, Blackpool), shows the majority to be underlain by Kirkham Mudstone. This is overlain by drift deposits of Boulder Clay. However the lower lying land in the east of the site is overlain by River Alluvium and Peat.

19. The most detailed published soils information for the site (SSEW 1984) shows the site to comprise of Altcar, Flint and Salop soils. These are described below (source: J M Ragg *et al.* (1984))

- Altcar soils are described as grass-sedge peat. When undrained these soils are permanently waterlogged almost to the surface, however where well drained they may be Wetness Class I.
- Salop soils are described as reddish fine loamy soils over clayey drift. Surface waterlogging results from the combination of a slowly permeable subsoil and slow surface

runoff, resulting in Wetness Class IV where the field capacity period exceeds 200 days, drained or undrained.

- *Flint soils are described as reddish fine loamy over clayey drift. These soils are similar to Salop series with slowly permeable subsoils, but may be Wetness Class III with good drainage.*

Agricultural Land Classification

20. 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.

21. The location of the auger borings and pits is shown on the attached sample location map.

Subgrade 3a

22. Land of good quality occurs in the north east of the site. The principal limitation in this area is soil wetness.

23. Soils in this area comprise an organic clay loam topsoil over loamy peat and fibrous peat subsoils. No slowly permeable horizon was present within the profile, therefore groundwater is likely to be the main cause of soil wetness. At the time of survey the soils were saturated close to the surface which, when combined with the climatic details for the site results in a soil wetness limitation. In some places the soils were wet at the surface, but this was principally due to the very wet conditions prevalent at the time of survey. Laboratory analyses of soil samples taken from the observation pit 2P showed that the topsoil had an organic matter content of 21.9 % and pH 5.7 (slightly acid). Soil acidity increased slightly with depth, becoming pH 4.9 (moderately acid) in the loamy peat subsoil. Soils of this nature in the prevailing local climate are restricted in terms of agricultural use by soil wetness, such that Subgrade 3a is appropriate overall in this area. Occasional observations with a sandy subsoil were of a slightly better quality, but as they were scattered they have not been mapped as a separate unit.

Subgrade 3b

24. Land of moderate quality has been mapped across most of the remainder of the site. The principal limitations are soil wetness and gradient.

25. Soils in this area commonly comprise a medium clay loam topsoil with few to common stones, overlying a heavy clay loam upper subsoil, overlying a gleyed and slowly permeable clay subsoil. The depths to the gleying and the slowly permeable horizon place these soils in Wetness Class IV, Subgrade 3b. The main limitation to agricultural use is soil wetness, which affects plant growth or imposes restrictions on cultivations and grazing by livestock.

26. Included in this area is a narrow strip where the land rises up sharply from the organic soils in the north-east of the site, resulting in gradients of between 7° and 11°. This would

have a significant impact on mechanised farm operations with an increased risk of soil erosion if cultivated, such that Subgrade 3b is appropriate.

27. In the north east of the site a small area of organic soils has been mapped within this unit. These soils differ to those mapped within the Subgrade 3a unit by having an organic heavy clay loam topsoil overlying fibrous peat within 30 cm of the surface. The land was noticeably wetter at the surface than within the Subgrade 3a area. Laboratory analyses of soil samples taken from the observation pit 4P showed that the topsoils had an organic matter content of 16.5 % and pH 6.1 (slightly acid). Soil acidity increased slightly with depth to pH 5.3 (moderately acid) in the peat subsoil. Soils of this nature in the prevailing local climate are restricted in terms of agricultural use due to a soil wetness limitation, such that Subgrade 3b is appropriate in this area.

Grade 4

28. Land of poor quality has been mapped in the far northern corner of the site and consists of an area of particularly wet land with an adjacent area of steeply sloping land that rises up to the west of it. The principal limitations are soil wetness and gradient.

29. In the wet area the soils commonly comprise an organic heavy clay loam topsoil overlying humified peat within 30 cm of the surface, onto fibrous peat. These soils are similar to those in the area around observation pit 4P, but were considerably wetter and more marshy with standing water present. Soils of this nature in the prevailing local climate are restricted in terms of agricultural use due to a soil wetness limitation, such that Grade 4 is appropriate.

30. Adjacent to this wet area the land rises steeply to the south west. Gradients of between 11° and 18° were noted and would have a significant impact on mechanised farm operations with an increased risk of soil erosion if cultivated, such that Grade 4 is appropriate.

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SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet 66, Blackpool, Solid and Drift Edition. 1:50,000. Scale.*

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