A1
Berkshire Minerals Plan
Omission Sites
Site OS15, Water Oakley, Bray
ALC Map and Report
July 1993

AGRICULTURAL LAND CLASSIFICATION

BERKSHIRE MINERALS PLAN - (OMISSION SITES)

SITE OS 15 - WATER OAKLEY, BRAY

1.0 INTRODUCTION

1.1 An Agricultural Land Classification (ALC) survey was carried out over an area of 26.8 ha of land at Water Oakley, Bray. The land forms an extension to the south of an area that was previously surveyed in detail in April 1991 in connection with the Berkshire Minerals Plan.

1.2 The current survey of the extension area is semi-detailed and a total of 10 auger borings were made over the area.

1.3 At the time of survey the majority of the area was under cereals with grass at the eastern end. The soils were extremely hard and consequently difficult to auger, especially at the eastern end of the site, but due to the narrow width of the site in this area, data from the original survey has been extrapolated to provide information for grading purposes.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

2.1 Climatic information for the area has been interpolated from the 5 km dataset produced by the Meteorological Office (Met. Office, 1989) and is set out in the table below:

Grid Reference	SU 913772
Altitude (m, AOD)	28
Accumulated Temperature (deg)	1485
Average annual rainfall (mm)	664
Field capacity days	139
Moisture deficit, wheat (mm)	116
Moisture deficit, potatoes (mm)	112

2.2 Although the average annual rainfall is relatively low in a national context, there is no overall climatic limitation affecting the land quality of the site. However, climatic factors do affect interactive limitations between soil and climate, namely soil wetness and droughtiness.

Relief

2.3 The site slopes gently towards the south and east and the altitude of the land ranges from approximately 28m AOD in the west to 22m at the eastern end. Relief therefore does not impose any limitation on the agricultural land quality.

Geology and Soils

2.4 The British Geological Survey, Sheet 269 (1981) indicates that the majority of the extension area comprises London Clay with a narrow band of River Terrace deposits, namely Flood Plain Gravels along the boundary with the previously surveyed area.

2.5 The Soil Survey of England and Wales, Sheet 6 (1983) shows the area to comprise soils of the Wickham 4 Association, described as "occurring on gently undulating land in the vales of Berkshire, where the underlying Tertiary clay is thinly covered by loamy drift, giving rise to seasonally waterlogged soils with slowly permeable subsurface horizons". The northern boundary of the site comprises soils of the Sutton 2 Association, which are described as "well drained, often stony, loamy typical argillic brown earths, usually over gravel at moderate depths". (SSEW, 1984).

2.6 The current survey indicated two distinct soil types over the area. The majority of the site comprised fine loamy over clayey soils. These soils have a non-calcareous heavy clay loam topsoil over a clay or heavy clay loam upper subsoil, which in the majority of profiles became clay at depth. Mottling was evident in the majority of subsoils although on the slightly higher ground was confined to the deeper soil layers. These soils are therefore classified as either wetness class II and III dependent on the depth of gleying in the soil profile.

2.7 On the upper slopes towards the western end of the site, better drained soils were encountered. These soils have a medium clay loam topsoil over a similar textured upper subsoil which passes into a gleyed sandy clay loam or sandy clay or clay at depth. These soils have been assigned to wetness class II and are generally slightly stony throughout. At the eastern end of the site around Oak View Farm, where the soils were extremely hard and dry it was not possible to auger into the subsoil and therefore the soils have been included within this soil type as a result of the topsoil texture and by extrapolation from information gained from the previous survey.

3.0 AGRICULTURAL LAND CLASSIFICATION

3.1 The site has been classified in accordance with the guidelines and criteria for grading agricultural land (MAFF, 1988). The following table gives a breakdown of the individual grades in term of area and extent for the site and their distribution is shown on the accompanying map.

Grade	Area (ha)	% of total agricultural land
2	6.5	24.4
3a	4.8	18.1
3b	15.3	57.5
Farm Buildings	0.2	100
Total area of site	26.8	

Grade 2

3.2 The areas mapped as Grade 2 have soils with medium clay loam topsoils over heavy clay loam subsoils which are slightly stony and exhibit ochreous mottling at depth (see para 2.7). They have been assessed as wetness class II and therefore due to the medium clay loam topsoil texture are limited to this grade as a result of minor workability restrictions.

Grade 3a

3.3 One area of land has been mapped as Grade 3a which corresponds with the better drained soils described in paragraph 2.6 above. The main limitation associated with these soils is due to soil wetness and associated workability restrictions. These fine loamy soils have a very slightly calcareous heavy clay loam topsoil and have been assigned to wetness class II. Consequently under the prevailing climatic conditions the land cannot be better than Grade 3a.

Grade 3b

3.4 The soils mapped as Grade 3b are restricted to this grade as a result of a moderately severe wetness and workability limitation. They represent the poorer drained variants described in paragraph 2.6 above and have heavy clay loam topsoils over slowly permeable mottled heavy clay loam or clay subsoils. The soils are assessed as wetness class III, which restricts them to this grade.

Farm Buildings

3.5 An area of farm buildings has been delineated at Oak View Farm.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 on the 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.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, 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.

Sub-grade 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.

Sub-grade 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 (eg. 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture : housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including : private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

REFERENCES

BRITISH GEOLOGICAL SURVEY (1981) Sheet 269 Windsor.

MAFF (1988) Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

METEOROLOGICAL OFFICE (1989) Climatological data for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet No 6. Soils of South East England.

SOIL SURVEY OF ENGLAND AND WALES (1984) Soils and their use in South East England.

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

Site 15

4 0-33 10YR4/3 hCL v sl calc 1-2% flints
33-70 2.5Y6/3 C common dist och mottles few flints
70-90 2.5Y5/3 SC many dist och & reddish & common grey mottles
90-110 7.5YR5/5 SCL
Wetness Class III Grade 3b

7 0-30 10YR4/3 m/hCL sl calc 2-3% flints
30-50 10YR5/4 hCL non calc v few flints
50-110 10YR6/3 c common dist och mottles becoming greyer at depth
Wetness Class II Grade 2/3a

9 0-30 10YR4/3 mCL sl calc 2-3% flints
30-45 10YR5/4 mCL sl calc few stones
45-90 2.5Y5/3 C common dist och mottles
90-110 10YR5/4 SCL common faint och mottles sl stony
110+ 10YR6/3 C few faint brown mottles
Wetness Class II/III Grade 2

11 0-27 10YR4/3 hCL sl calc 2-3% small & med flints
27-45 10YR5/4 hCL v sl calc
45-75 10YR5/3 C common dist och & few grey mottles
75-90 10YR5/4 SC common dist red brown mottles
90-110 2.5Y6/2 C few faint och mottles
Wetness Class II/III Grade 3a

13 0-30 10Yr4/3 mCL non calc few small stones
Impenetrable @ 30 cm

14 0-27 10YR4/3 hCL calc (limed) 3-4% flints
27-50 10YR5/3 hCL(s) common dist och mottles v sl calc 5-10% flints
50-110 10YR5/3 C common dist och mottles plastic common grey patches below 70 cm
Wetness Class III Grade 3b

16 0-27 10YR4/3 hCL v sl calc 2-3% flints
27-60 10YR5/4 C few faint och mottles v sl calc
60-100 10YR5/3 C common faint och mottles & few grey patches
Impenetrable stone @ 100 cm
Wetness Class II Grade 3a

18 0-30 10YR4/3 hCL v sl calc 2-3% flints
30-60 2.5Y5/3 C common dist och mottles few stones
60-110 2.5Y5/3 C common dist och & grey mottles calc
Wetness Class III Grade 3b

20 0-30 10YR3/3 hCL non calc 3-4% flints
30-110 2.5Y5/3 C common dist och mottles less distinct with depth
Wetness Class III Grade 3b

22 0-30 10YR4/3 mCL 2-3% flints non calc
30-45 10YR5/4 mCL sl stony no mottles
Too hard to auger @ 45 cm
Wetness Class ? Grade 2?

24 0-30 10YR4/3 mCL sl stony non calc
30-45 10YR5/4 SCL no mottles sl stony
Too hard to auger below 45 cm
Wetness Class ? Grade 2?