

**DIMMER WASTE DISPOSAL SITE, CASTLE CARY, SOMERSET
AGRICULTURAL LAND CLASSIFICATION**

REPORT OF SURVEY

1. Introduction

In June, 1989, a detailed Agricultural Land Classification (ALC) survey was carried out over 90 hectares at Dimmer near Castle Cary in Somerset in connection with an informal consultation by the County Council concerning a proposed extension to Dimmer Waste Disposal Site.

The site occupies the flat, lowlying floodplain land of the River Brue and the River Cary to the west of Castle Cary and is underlain by alluvium and Jurassic Clays.

The fieldwork was conducted by members of the Resource Planning Group at an approximate auger sampling density of one boring per hectare. A total of 65 borings and 3 soil pits were examined.

The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture. The distribution of grades for the site is detailed below and illustrated on the ALC map at a scale of 1:10,000. The information is accurate at the scale shown, but any enlargement of the map would be misleading.

Table 1: Distribution of Grades

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3B	81	90	100%
Woodland	9	10	
	90 ha	100%	

2. Climate

Estimates of important climatic variables were obtained by interpolation from a 5km grid database in order to assess any overall climatic limitation. The results are detailed in Table 2 below.

Table 2: Climatic Interpolations

Accumulated Temperature (°days)	:	1533
Average Annual Rainfall (mm)	:	749
Field Capacity Days	:	163
Moisture Deficit, Wheat (mm)	:	110
Moisture Deficit, Potatoes (mm)	:	104
Height (m)	:	30

Accumulated temperature is a measure of the relative warmth of a locality and average annual rainfall is a measure of overall wetness. Together, these interpolations reveal that there is no overall climatic limitation affecting the site.

3. Agricultural Land Classification

The whole of the agricultural land has been classified as sub-grade 3B. Similar soils with similar limitations occur throughout the site. Typically, the profiles reveal shallow heavy clay loam topsoils with distinct evidence of wetness from the surface which change abruptly into heavy clay subsoils which exhibit a prominent wetness limitation. The subsoil clay extends to at least one metre and acts as a slowly permeable layer. Its shallow occurrence places the soils in wetness class IV which, in combination with the topsoil texture and prevailing field capacity day value, results in an ALC grade of 3B.

In some areas the clay occurs at the surface, but this has no additional effect on the grade.

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

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 and horticultural crops can usually be grown but on some land in 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. Where 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 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.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: 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: golf courses, 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. A distinction may be made as necessary between farm and non-farm 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 land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Soil Profile Descriptions: Explanatory Note

Soil texture classes are denoted by the following abbreviations:

Sand S; Loamy Sand LS; Sandy Loam SL; Sand Silt Loam SZL; Silt Loam ZL;
Medium Silty Clay Loam MZCL; Medium Clay Loam MCL; Sandy Clay Loam SCL;
Heavy Silty Clay Loam HZCL; Heavy Clay Loam HCL; Sandy Clay SC;
Silty Clay ZC; Clay C

For the sand, loamy sand, sandy loam and sandy silt loam classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

F fine (more than $\frac{2}{3}$ of sand less than 0.2 mm)
C coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:-

M medium (less than 27% clay); H heavy (27-35% clay)

Other possible texture classes include:

Peat P; Sandy Peat SP; Loamy Peat LP; Peaty Loam PL;
Peaty Sand PS; Marine Light Silts MZ

The prefix "Calc" is used to identify naturally calcareous soils containing more than 1% Calcium Carbonate.

For organic mineral soils, the texture of the mineral fraction is prefixed by "org".

Other notation:

st	stones (6 cm)
sst	small stones (2 cm - 6 cm)
vsst	very small stones (2 mm - 2 cm)
Mn	manganese
cdom/cfom	common distinct/feint ochreous mottles
mpom	many prominent ochreous mottles (VMPOM = very many ..)
Few = 1-5%; common = 6-15%; many = 16-35%; very many = +35%	

DIMMER WASTE DISPOSAL SITE

SOIL PIT DESCRIPTIONS

Pit No 1

Topsoil: 0-12 cm
HCL/C
10YR41
Strong Rusty Root Mottling; cdom

Subsoil: 12-50 + cm
C
10YR52/53; towards 2.5Y52 at depth
vmdom; common Mn
pale ped faces; 2.5Y62
Structure below 35 cm = Coarse to Very Coarse Prismatic
Porosity <0.5% (>0.5 mm)

Augered to 120 cm .10YR51 from 90 cm
Gleyed <40 cm
SPL from 35 cm
Wetness Class IV
ALC Grade 3B

Pit No 2

Topsoil: 0-18 cm
HCL/C
10YR52
Strong Rusty Root Mottling: cdom

Subsoil: 18-50 + cm
C
2.5Y52; pale ped faces (2.5Y62)
vmdom; common Mn
Structure below 35 cm = Coarse Prismatic
Porosity <0.5% (>0.5 mm)

Augered to 120 cm 10YR51 from 100 cm
Gleyed <40 cm
SPL from 35 cm
Wetness Class IV
ALC Grade 3B

Pit No 3

Topsoil: 0-13 cm
C
10YR41
Rusty roots; cdom

Subsoil: 13-50+ cm
C
2.5Y52; pale ped faces (2.5Y62)
vmdom; common Mn
Porosity <0.5% (>0.5 mm)
Structure below 35 cm = Coarse to Very Coarse Prismatic

Augered to 120 cm .10YR51 from 90 cm
Gleyed <40 cm
SPL from 35 cm
Wetness Class IV
ALC Grade 3B

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