

8FCs 4795

57/92

PROPOSED LANDFILL SITE AT RUST BRIDGE, KENN, CLEVEDON

AGRICULTURAL LAND CLASSIFICATION AND STATEMENT OF SITE  
PHYSICAL CHARACTERISTICS

Report of survey

1. INTRODUCTION

Just under three hectares of land at Rust Bridge, Kenn were graded under the Agricultural Land Classification (ALC) System and an assessment made of site physical characteristics in September 1992. The work was carried out for MAFF as part of its statutory role in response to an ad hoc planning application to Avon County Council, covered by the Town and Country Planning Act 1990.

The fieldwork was carried out by ADAS's Resource Planning Team (Wessex Region) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at the scale shown but any enlargement would be misleading. This survey supercedes the previous survey of this area at 1" being at a more detailed level and carried out under the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1989). A total of 4 borings and 1 soil pit were examined. The area is adjacent to the M5 Motorway and may have been disturbed during construction, however this was over five years ago and so the soil will have had adequate opportunity to settle down. The findings of this survey correlate well with a survey carried out on land to the west of the M5.

The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in the appendix.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

Table 1 Distribution of ALC grades: Rust Bridge

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
4	2.8	100	100

## 2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to lower grades despite other favourable conditions.

To assess any overall climatic limitation, estimates of important climatic variables were obtained for the site by interpolation from the 5km grid Met Office/Maff Database (Met Office/MAFF/SSLRC 1989). The parameters used for assessing climate are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The results shown in Table 2 reveal that there is no overall climatic limitation across the survey area.

No local climatic factors such as exposure were noted in the survey area. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. This data is used in assessing the soil wetness and droughtiness limitations referred to in Section 5.

Table 2 Climatic Interpolations: Rust Bridge

Grid Reference	ST 410 687
Height (m)	6
Accumulated Temperature ( ° days)	1548
Average Annual Rainfall (mm)	828
Overall Climatic Grade	1
Field Capacity (Days)	186
Moisture Deficit, Wheat (mm)	101
Potatoes (mm)	93

## 3. RELIEF

The survey area is flat and low lying at a height of 6m above sea level. It is surrounded by manmade features of the M5 and a dismantled railway.

## 4. GEOLOGY AND SOILS

The survey area lies over esturine alluvial deposits as indicated by BGS sheet 264.

The soils in the survey area are poorly drained and have heavy silty clay loam topsoils. The subsoils quickly become clays which are slowly permeable. The soils are stone free.

## 5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area are detailed in Section 1 and shown on the accompanying ALC

map. The information is correct at the scale shown but any enlargement would be misleading.

#### Grade 4

All of the site has been classified as Grade 4. The soils are poorly drained and show evidence of this in the form of gleying which is present from the surface. The topsoils are only around 15-20cm thick and are heavy silty clay loams. These become heavy clay loams which by 40cm are clays. The clays are slowly permeable. The presence of a slowly permeable layer was confirmed by examining the soil structure and condition in a soil pit. The clays continue to depth.

#### 6. SOIL RESOURCES

The units referred to can be found on the accompanying Soil Resources Map.

##### Soil Resources: Topsoil

"Topsoil" is defined as the organic rich surface horizon. Only one topsoil unit exists in the survey area. The depth varies very little across the site and a working depth of 20cm is taken.

Unit I: 20cm heavy silty clay loam, 10YR5/2

Moderately developed, coarse sub-angular blocky with friable consistence

Abundant roots

Worms were common

No stones were present in this horizon

A total topsoil resource of 5600cu m is available as shown in Table 3 and on the accompanying soil resources map.

Table 3 Topsoil Resources: Rust Bridge

Map Unit	Depth	Area(ha)	Soils	Volumes
I	20cm	2.8	HZCL	5600

##### Soil Resources: Subsoil

"Subsoil" is defined as the less organic rich lower horizons.

There is only one subsoil unit. Across the site there is soils to depth of 120cm. The subsoil textures vary at different depths which are described below.

Unit I: 20-40cm heavy clay loam, 10YR63,62,52:  
 Moderately developed, coarse angular blocky with friable consistence  
 Common roots  
 Few worms  
 No stones were present in this horizon  
 40-120cm clay, 10YR62,51  
 Strongly developed coarse angular blocky with firm consistence  
 Few roots and worms, low porosity  
 Slowly permeable layer

The depths at which the horizons occur are quite uniform across the site.

A total subsoil resource of 28000cu m is available, the distribution of which is shown in Table 4.

Table 4 Subsoil resources: Rust Bridge

Map Unit	Depth	Area (ha)	Soils	Volume
I	20-40	2.8	HCL	5600
I	40-120	2.8	C	<u>22400</u>
TOTAL				<u>28000</u>

## 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 include 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: 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.

### 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.