STATEMENT OF PHYSICAL CHARACTERISTICS

AND AGRICULTURAL LAND CLASSIFICATION

STILL HOUSE FARM

BATLEY

WEST YORKSHIRE

AUGUST 1992

Proposed Land Fill Site

ADAS

Leeds Statutory Group

Ref: 65/92

MAFF Ref:-

ALCSTHSF.BAT

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STILL HOUSE FARM, BATLEY, WEST YORKSHIRE

1. STATEMENT OF PHYSICAL CHARACTERISTICS

A. Introduction

The site, which covers an area of approximately 4 ha, is located to the north of Upper Batley around National Grid Reference SE239261 and along the route of a dismantled railway, between the B6123 and the A643.

Survey work was carried out in July 1992, when soils were examined by auger borings to a depth of 1.00 m at 50 m intervals predetermined by the National Grid.

Two detailed soil descriptions were carried out at locations representative of the two main soil types occurring on the site.

All land quality assessments were made using the methods described in Agricultural Land Classification of England and Wales (MAFF 1988).

Land Use

The majority of the site is not under agricultural production and is largely derelict. Two small areas in the north east and south east of the site are currently under pasture.

Climate

Average Annual Rainfall is approximately 763 mm. The accumulated temperature above 0°C (January to June) is 1286 °C and the area is at field capacity for 183 days a year. The rainfall and temperature figures impose an overall climatic limitation of grade 2 on the site.

Geology

The whole of the area is underlain by Carboniferous Coal Measures. Soils are developed on weathered clays and shales which form a superficial layer at least 1m in thickness over the solid strata.

Drainage

The majority of soils are poorly drained (Wetness Class IV) with slowly permeable layers occurring within 50 cm of the surface. In the north of the site a small area contains well drained soils which fall within Wetness Class I.

Relief

The site is moderately to strongly sloping with an overall east facing aspect. Slopes of 8 - 11° are common and place an overall gradient limitation of subgrade 3b on much of the site.

B. Soil Properties

Two main soil types occur on the site:-

1. Medium or Heavy topsoils over Heavy Textured subsoils formed from weathered Coal Measures Clays (Resource Unit T1/S1)

This soil type covers most of the site. Profiles consist typically of medium or heavy clay loam topsoils over subsoils of either heavy clay loam or clay to a depth of more than 1 m. Stone content is relatively high with 10 - 15% of medium soft sandstones and shales. Detailed inspection showed the topsoils to have a sub-angular blocky structure, whilst the heavier subsoils have a medium to coarse prismatic structure.

2. **Medium top soils over Medium Textured subsoils passing to weathering sandstone at depth (Resource Unit T1/S2)**

This soil type occurs in the northern part of the site. Typical profiles consist of medium clay loam topsoils overlying medium clay loam subsoils often passing to weathered sandstone at a depth of about 1 m. Stone content increases down the profile. Structure is subangular blocky throughout.

C. Soil Resources

The topsoil and subsoil resources are shown on the accompanying maps.

1. Topsoils:- Unit T1

This unit is common to both soil types and consists mainly of medium clay loam material with a well developed sub-angular blocky or granular structure. In the south eastern part of the site there are some patches of heavy clay loam, but these are not extensive enough to separate.

The median thickness of unit T1 is 25 cm.

2. Subsoils

Unit S1

This unit underlies most of the site and consists of heavy clay loam or clay with a moderately or well developed coarse prismatic structure. Mean thickness is 75 cm.

Unit S2

This unit occurs in the northern part of the site. It consists of medium clay loam with a moderately developed subangular blocky structure. Sandstone content increases down the profile and fragmented sandstone bedrock is common below a depth of about 1 m.

Mean thickness is 75 cm.

2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades on the site are as follows:-

Grade	Hectares	Percentage of Agricultural Land	Percentage of Total Area
1	-	-	-
2	-	-	-
3a	-	-	-
3b	3.17	100	72.8
Non Agricultural	-	-	-
Urban	1.18		27.2
Total	4.35	100	100

Grade 3b

The whole of the site, apart from the area of urban land described below falls with subgrade 3b. Two main soil types exist within this subgrade. The most widespread consists of medium or heavy clay loam topsoils over heavy clay loam or clay subsoils. Typical profiles are gleyed at less than 40 cm depth, slowly permeable above or at 50 cm, and thus fall within Wetness Class IV. The second soil type which is restricted to the northern part of the site consists of medium clay loam topsoils over ungleyed medium textured subsoils. Profiles are well drained (Wetness Class I) and there are no slowly permeable layers.

Slopes of 8 - 11 ° impose an overall gradient restriction of subgrade 3b on the whole site. The heavy textured poorly drained soil is also limited to subgrade 3b by wetness and workability problems.

Urban

This consists of the derelict railway running through the centre of the site.

4. SOIL PROFILE DESCRIPTIONS - STILL HOUSE FARM

Soil Type 1:- Medium or heavy topsoil over heavy subsoil (Resource Unit T/S1.

Soil Profile Pit 1 (adjacent to auger boring number 14).

Land Use: Ley Grass.

Slope: 09°

Aspect: North East.

ALC Grade: 3b Limiting factor: Wetness and Gradient.

Horizon	(cm)	Description
1	0 - 20	Very dark grey (10YR 3/1) heavy clay loam; with a few yellow (10YR 7/8) subsoil inclusions; slightly stony (medium angular soft sandstones and shales); moist; coarse; weakly developed sub-angular blocky structure; slightly porous (<0.5% fine and medium pores); moderately firm soil strength; moderately sticky and moderately plastic; many fine and medium fibrous roots; non calcareous; abrupt smooth boundary.
2	20 - 45	Light grey (10YR 7/1) clay, with many prominent medium brownish yellow (10YR 6/8) mottles, few medium small angular pieces of soft sandstone, shale and coal; dry; moderately developed medium to

	(cm)	course prismatic structure; slightly porous (<0.5%) fine and medium pores); moderately strong soil strength; moderately sticky; moderately plastic; few fine fibrous roots; non calcareous; gradual irregular boundary.
3	45 - 100	Yellowish brown (10YR 5/8) heavy clay loam; very slightly stony (medium angular pieces of soft sandstone); slightly moist; medium sub-angular blocky structure; moderately porous with 2% fine and medium pores; moderately firm soil strength; slightly sticky and slightly plastic; few fine fibrous roots.

Soil Type 2:- Medium textured soil over sandstone (Resource Unit T1/S2)

Soil Profile Pit 2 (adjacent to auger boring number 3)

Land Use: Ley Grass.

Slope: 09°

Aspect: East.

ALC Grade: 36, Limiting factor: Gradient.

Horizon	(cm)	
1	0 - 20	Dark brown (10YR 3/3) medium clay loam; unmottled; slightly stony (small and large angular pieces of medium soft sandstone); moist; coarse granular structure; moderately porous (>2% fine pores); moderately weak soil strength; slightly sticky; slightly plastic; many fine and medium fleshy roots; non-calcareous; diffuse irregular boundary.
2	20 - 95	Yellowish brown (10YR 5/8) medium clay loam; unmottled; moderately stony (small angular sandstones); dry; coarse sub-angular blocky structure; moderately firm soil strength; moderately porous (>2% fine pores); slightly sticky and slightly plastic; common fine fibrous roots; non calcareous.
3	95 - 100	Fragmented weathering medium soft sandstone.