STATEMENT OF PHYSICAL CHARACTERISTICS

AND

AGRICULTURAL LAND CLASSIFICATION

SHILDON WAGONWORKS, SHILDON
COUNTY DURHAM

Proposed Opencast Coal Site Extension

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SHILDON WAGONWORKS
PROPOSED OPENCAST COAL SITE EXTENSION

(NGR NZ220252)

1. STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 INTRODUCTION AND GENERAL SITE INFORMATION

The site, which is located south-west of Shildon, County Durham covers a total area of approximately 30.6 hectares, of which approximately 16.4 hectares are in agricultural use. The remaining 14.2 hectares consist mainly of active Opencast coal workings and a spoil tip.

Survey work was carried out in May 1989 when soils were examined by hand auger borings to a depth of 1 metre at points pre-determined by the National Grid. This was supplemented by information collected from an earlier survey, when a large area south west of Shildon was investigated in response to previous coal extraction proposals. (See Hill-Top Brusselton, November 1985). In all, 36 borings were made giving a survey density of just over one boring per hectare. Detailed soil descriptions and sampling for laboratory analyses were also made at a representative location (see Soil Profile Pit A). All assessments of agricultural land quality were made using the methods described in: "Agricultural Land Classification of England and Wales: Revised Criteria for the grading of agricultural land", (MAFF 1988). These guidelines make use of data not available at the time of the previous survey and therefore result in some minor changes to the previous agricultural grading of the site.

1.2 CLIMATE AND RELIEF

Average Annual Rainfall on the site is approximately 720 mm. Accumulated temperature above $0^{o}C$ (January-June) is approximately 1214 day degrees C and the field capacity period is approximately 191 field Capacity days.

These characteristics indicate a slight climatic limitation which restricts ALC to a maximum of grade 2.

Relief varies between 135 and 155 metres aod. North or north-east facing slopes predominate. These rarely exceed 5^{o} and so do not impose any limitations on the use of agricultural machinery.

1.3 GEOLOGY

Coal measure shales and mudstones underlie the site and in most places are covered by a variable thickness of boulder clay. This drift is thin or absent in the south east and towards the centre of the site where grey structureless shale and clay is commonly encountered within 1 metre of the surface.

1.4 SOIL RESOURCES

There is one major soil type on the site. This consists mainly of clay loam or sandy clay loam topsoils over clay loam and clay subsoils. Close examination of a typical profile (soil profile pit A) showed the topsoil to have a moderately developed coarse angular blocky structure over strongly developed coarse prismatic subsoil. Stoniness is not a problem, most soils being no more than very slightly stony.

1.5 Topsoil Characteristics

Only one topsoil (Unit T1) was identified. This consists of medium textured material with an optimum depth of 25 cm.

1.6 Subsoil Characteristics

Subsoils consist mainly of heavy textured material overlying unweathered to strongly weathered shales and mudstones at variable depths. Subsoils are largely absent in the extreme south east where unweathered coal measures occur immediately below topsoil unit T1.

Sub unit S1 occurs over much of the western and central part of the site and consists largely of heavy textured material with a mean thickness of 75 cm.

The remaining subsoils (Sub unit S1A), consist of heavy to medium textured material with a mean thickness of 35 cm. This overlies weathering clay in a shale and mudstone matrix which has not been identified as a resource, but may be suitable either as backfill, or as a lower subsoil if soil making material is in short supply.

AREAS LACKING SOIL RESOURCES

Topsoils and subsoils are largely absent in the northern and north eastern parts of the site where there is a spoil tip and active opencast workings.

AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on this site are as follows:

Grade	Hectares	Per cent of total site area
3b	16.4	54%
Non Agricultural	10.4	34%
Urban	3.4	12%
Total	30.6	100%

SUBGRADE 3b

All agricultural land falls within this subgrade. Soils consist mainly of medium clay loam or sandy clay loam topsoils over gleyed and slowly permeable heavy clay loam and clay subsoils. These generally fall within wetness class IV and are limited to 3b by seasonal workability and wetness problems.

NON AGRICULTURAL

This consists of the active open cast coal workings in the north east part of the site. Soil resources have been stored and appear to be adequate for future restoration.

URBAN

The spoil tip in the north west part of the site falls into this category.

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3. **SHILDON WAGON WORKS**

SOIL PROFILE PIT DESCRIPTION

(PROFILE PIT A)

Lande Use: Grass
Slope: ½°
Aspect: North

HORIZON	DEPTH	DESCRIPTION
1	0-27	Dark grey (10YR4/1) medium sandy clay loam; common medium, distinct, clear strong brown (7.5YR5/6) mottles; very slightly stony; few medium sub angular sandstones; slightly moist; moderately developed coarse sub angular blocky structure; medium packing density; moderately porous; common fine macropores and fissures; moderately firm soil strength; slightly sticky and moderately plastic; many fine fibrous roots; non calcareous; smooth abrupt boundary.
2	27-100+	Light grey (10YR6/2) clay with sandy coatings around ped faces; many medium, prominent, clear, strong brown (7.5YR5/6) mottles; very slightly stony; few medium sub angular sandstones; moist; strongly developed coarse prismatic structure; slightly porous; medium packing density; very few fine macropores and fissures; moderately firm soil strength; very sticky; very plastic; few very fine fibrous roots above 40 cm; non calcareous.

MAPS