AGRICULTURAL LAND CLASSIFICATION AND

STATEMENT OF PHYSICAL CHARACTERISTICS

Hedley Lane, Lamesley, Tyne and Wear

Proposed Opencast Coal Site

MAFF

Leeds Regional Office

December 1989

2FCS 4614

lds.AL1Hedly.Lne

CONTENTS

MAPS

1. AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED OPENCAST COAL SITE AT HEDLEY LANE, LAMESLEY, TYNE AND WEAR

1.1 Introduction

The site covers 18.9 hectares (national grid reference NZ 218568) and is located to the east of Hedley West House Farm, just off the A6076 Stanley to Sunniside road. Survey work was carried out in December 1989 when soils were examined by hand auger borings to a depth of 1 m. Borings were located at 18 points predetermined by the National Grid. Three profile pits were also dug to examine soil structure in greater detail and to provide samples for analysis.

1.2 Climate and Relief

Salient climatic parameters at Hedley Lane are as follows:-

Average Annual Rainfall (mm)	727
Accumulated Temperature Above 0°C (Jan-June)	1166
Field Capacity Days	180
Moisture Deposit wheat (mm)	78
potatoes (mm)	60

These factors impose an overall climatic limitation on the site of subgrade 3a.

The site is gently to moderately undulating with an overall slope down to the stream which drains towards the south western corner. Slopes are steep enough to limit ALC grades only on land adjoining the stream.

Altitude ranges from 175 m a.o.d. in the north west down to 151 a.o.d. at the south western corner.

1.3 Land Use

The eastern part of the site is under winter cereals and remainder under grass.

1.4 Geology, Soils and Drainage

Carboniferous Coal Measures occur close to the surface in this area. They are covered by a layer of medium to light textured weathered material and drift of variable thickness. Where this drift is thin or absent and sandstone is very close to the surface, soils are shallow and light textured (typically sandy loam or loamy sand). Topsoils are slightly stony and subsoils tend to be moderately to very stony. These profiles are unmottled, contain no slowly permeable layer and fall within Wetness Class I.

Most of the remaining soils are developed over a thicker medium textured drift deposit. Topsoils are usually formed of sandy loam over similar or slightly heavier textured subsoils. The subsoil can be gleyed but is rarely slowly permeable. These soils vary from Wetness Class II to Wetness Class IV. There is also a small area of peaty soil in an enclosed hollow adjoining Birkheads Lane near its junction with the track to Hedley Hall Farm. This is too small to show on the accompanying maps.

1.5 Agricultural Land Classification

1.5.1 Subgrade 3a (14.2 ha)

This subgrade contains coarse textured easily worked soils that have no or only a slight wetness limitation (Wetness Classes I or II) and no more than a slightly stony topsoil. The overall climatic restriction prevents these soils from being graded higher than 3a.

1.5.2 Subgrade 3b (4.7 ha)

Three separate limitations apply to the different areas within this subgrade. Land in the west contains gleyed slowly permeable soils which are limited to subgrade 3b by significant wetness and workability restrictions. North of Hedley Fell the main limitation is slopes of more

than 7° whilst topsoil stoniness is the main restricting factor in the small separate area of the subgrade in the field adjoining this point.

Resource Planning Group
Leeds RO

January 1990

2. STATEMENT OF PHYSICAL CHARACTERISTICS, HEDLEY LANE, LAMESLEY, TYNE AND WEAR. PROPOSED OPENCAST COAL SITE

2.1 Soil Types

Three soil types were identified.

2.1.1 Shallow Light Textured Soils (See profile pit description No 1)

These soils occur in the eastern half of the site and consist typically of sandy loam topsoils over similar textured subsoils. Bedrock is usually encountered at about 55 cm depth. Profile are slightly or moderately stony throughout. Discrete areas may contain a higher stone content.

2.1.2 Light Textured Drift Derived Soil (See profile pit description No 2)

Soils of this type occur in the western part of the site and are formed on deeper medium or light textured drift. Topsoils can be either of sandy clay loam or sandy loam over similar textured subsoils. Bedrock occurs at between 70 and over 100 cm depth.

2.1.3 Peaty Soils (See profile pit description No 3)

These occur in a small enclosed hollow adjoining Birkheads Lane and consist of about 75 cm of peaty loam overlying waterlogged sandy loam. The area of peat is however too small to show separately on the accompanying maps.

Typical profile descriptions of these soils are given at the end of this report.

2.2 Soil Resources

The topsoil and subsoil resources on this site are shown on the accompanying maps along with soil depth and volume information.

2.2.1 Topsoils

There is only one topsoil unit (unit T1) on the whole site. This is predominantly light in texture although it does contain some peaty and medium textured material. It is mainly slightly stony but can be moderately or very stony in places. Optimum thickness is 30 cm.

2.2.2 Subsoils

Unit S1 in the eastern part of the site has a mean thickness of 25 cm and consists of light textured moderately to very stony material which passes into weathering sandstone bedrock at about 55 cm depth.

Unit S2 consists of deeper medium and light textured drift. It has a mean thickness of 45 cm, but is much thicker than this in places. This unit also includes the small area of peaty soil near Birkheads Lane.

3. HEDLEY LANE

SOIL PROFILE DESCRIPTIONS

3.1 Profile Pit 1 (Near auger boring no 8) Shallow, Light Sandstone derived soil

Land Use: Arable
Slope and Aspect: 3° S.E.

Horizon
Depth (cm)

0-30 Very dark greyish brown (10YR 3/2) medium sandy loam; unmottled; slightly stony with a few medium angular sandstones; moist; weakly developed medium and coarse subangular blocky structure; medium packing density; very porous; moderately weak soil strength; moderately sticky and moderately plastic; abundant fine fibrous roots; non calcareous; abrupt wavy boundary.

30-55 Dark yellowish brown (10YR 4/6) medium sandy loam; unmottled; slightly, becoming moderately and very stony with depth with medium and large angular sandstones; slightly moist; weakly developed coarse and medium angular blocky to coarse platy structure; compacted, medium packing density; moderately porous; moderately firm; slightly sticky and slightly plastic; many fine fibrous roots; non calcareous; abrupt irregular boundary to fragmented sandstone.

55+ Sandstone.

3.2 Profile Pit 2 (Near boring 15) Deep Coarse Loamy over sandy soil

Land Use: Grass

Slope and Aspect: 6°W

Horizon Depth (cm)	
0-27	Dark greyish brown (10YR 4/2) medium sandy loam; stoneless; unmottled; moist; well developed medium and fine subangular blocky structure; friable; many fine pores and fissures; abundant fine fibrous roots; non calcareous; clear smooth boundary.
27-45	Brown (10YR 4/3) medium sandy loam; few medium and large rounded sandstones; unmottled; moist; well developed medium subangular blocky structure; friable; many fine pores and fissures; common fine fibrous roots; non calcareous; abrupt clear boundary.
45-73	Pale brown (10YR 6/3) loamy medium sand; few medium and large rounded sandstones; many medium, faint, diffuse, brownish yellow (10YR 6/8) mottles; moist; moderately developed medium angular blocky structure; friable; many fine pores and fissures; common fine pores and fissures; non calcareous; abrupt clear boundary.
73-100	Grey (10YR 5/1) loamy fine sand with lenses of grey (NS) fine sand silt loam; stoneless; many medium clear sharp brownish yellow (10YR 6/8) mottles; wet; weakly developed coarse platy structure; few fine pores and fissures; few fine fibrous roots; non calcareous.

3.3 Profile Pit 3 (Near boring 18) Peaty Soil

Land Use: Arable

Slope and Aspect: 0°

Horizon Depth (cm)	
0-35	Dark grey (10YR 3/1) peaty loam; stoneless; unmottled; moist; well developed medium subangular blocky structure; many fine pores and fissures; many fine fibrous and common thick fleshy roots; abrupt smooth boundary.
35-75	Black (5YR 2.5/1) semi fibrous peat; stoneless; unmottled; waterlogged at base; medium coarse angular blocky structure becoming platy at depth; common very fine fibrous roots narrow even boundary.
75-100	Dark greyish brown (10YR 4/2) fine sandy loam; unmottled; stoneless; very moist; massive; common fine pores and fissures.