

AGRICULTURAL LAND CLASSIFICATION
AND STATEMENT OF PHYSICAL CHARACTERISTICS

BARNSDALE BAR, KIRK SMEATON, NORTH YORKSHIRE
Proposed Quarry Extension

MAFF
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AGRICULTURAL LAND CLASSIFICATION REPORT AND STATEMENT OF PHYSICAL
CHARACTERISTICS ON LAND AT BARNSDALE BAR, KIRK SMEATON, NORTH YORKSHIRE,
(Proposed Quarry Extension)

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:-

SE 511 144

Location Details:-

2½km SSW of the village
of Kirk Smeaton

Site Size:-

4.3 ha

1.2 Survey Methods

Date Surveyed:-

15th April 1992

Boring Density and Spacing Basis:-

Approximately 2 per
hectare at points
distributed across the
site

Sampling Method:-

By hand auger to a max
depth of 1.00m

Number of Borings:-

10

Number of Soil Pits (used for):-

1 to assess soil
physical characteristics
and to collect samples
for laboratory analysis

All land quality assessments were made using the methods described in
"Agricultural Land Classification of England and Wales: Revised
Guidelines and Criteria for grading the quality of agricultural land
(MAFF 1988)".

This detailed survey supersedes the previous "1" to one mile" survey of
the area.

1.3 Land Use:-	The entire site is in cereal production
1.4 Climate and Relief	
Average Annual Rainfall (AAR):-	598 mm
Accumulated Temperature above 0°C (January-June):-	1359 day °C
Field Capacity Days:-	125 days
Moisture Deficit:	
wheat:-	103 mm
potatoes:-	94 mm
Altitude average:-	55 m a.o.d.
Climatic limitation (based on interaction of rainfall and temperature values:-	None
Relief:-	Flat to very gently sloping
Slopes (°):-	0-2°
Gradient Limitations:-	None

1.5 Geology and Soil

Solid Strata:-	Lower Magnesian Limestone
Depth of solid rock from surface:-	Between 25cm and 80cm
Drift types:-	None, except for thin cover loamy material derived from weathering of the underlying rock.
Soil Types and Distribution:-	Medium-textured soils cover the whole site.
Soil Textures (topsoils and subsoils):-	Generally medium clay loam topsoils overlying medium clay loam or sandy clay loam subsoils, passing into weathering limestone at depth.
Soil Series/Associations:-	
On 1/250000 map:-	Aberford
Identified on site:-	Aberford
Soil Limitations and type:-	Soil depth and soil droughtiness.

1.6 Drainage

Soil type and Wetness Class:-	All soils are well drained, falling in Wetness Class I.
Drainage Limitations:-	None

2.0 Agricultural Land Classification Grades

The ALC grades occurring on the site are as follows:-

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Agricultural Area</u>	<u>Percentage of Total Area</u>
1			
2			
3a	2.2	51	51
3b	2.1	49	49
4			
5			
Non Agricultural			
Agricultural Buildings			
Urban			
Other	_____	_____	_____
Total	4.3	100	100
	_____	_____	_____

Grade 3a

Distribution on site:-

Land in this subgrade covers the eastern part of the site.

Soil Type(s) and Texture(s):-

Medium-textured soils typically consisting of medium clay loam topsoils overlying medium clay loam or sandy clay loam subsoils. Limestone bedrock occurs at around 60cm depth.

Depth to Slowly Permeable Layers:-

No slowly permeable layers occur.

Wetness and Drainage Class:-

Wetness Class I (well drained).

Stone Percentage and Type:-

3-6% small and medium-sized limestones.

Grade Limiting Factors:-

Soil droughtiness.

Grade 3b

Distribution on site:-

In the western half of the site.

Soil Type(s) and Texture(s):-

Medium-textured soils consisting of medium clay loam topsoils overlying medium clay loam or sandy clay loam subsoils. Limestone bedrock generally occurs at around 45cm depth.

Depth to Slowly Permeable Layers:-

Slowly permeable layers are absent.

Wetness and Drainage Class:-

Soils are well drained falling in Wetness Class I.

Stone Percentage and Type:-

5-8% small and medium sized limestones.

Grade Limiting Factors:-

Soil droughtiness and soil depth.

3.0 STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

3.1 Soil Properties

One soil type subdivided into shallow and deep phases occurs on the site. Its distribution along with soil depth and quantity information is shown on the accompanying maps,

Soil Type 1a:-

Occurrence:-	In the west of the site.
Textures:-	Medium clay loam topsoil overlying medium clay loam or sandy clay loam subsoil.
Stone content:-	3-8% small to large limestones.
Horizon thicknesses:-	Topsoil 25cm, subsoil 20cm.
Profile pit features:-	Weakly developed medium angular blocky structure in the topsoil and moderately developed medium angular blocky structure in the subsoil.
Other features:-	Limestone bedrock occurs at around 45cm depth.

Soil Type 1b:-

Occurrence:- In the east of the site.

Textures:- Medium clay loam topsoil overlying medium clay loam or sandy clay loam subsoil.

Stone content:- 3-8% small to large limestones.

Horizon thicknesses:- Topsoil 25cm, subsoil 34cm.

Profile pit features:- Medium angular blocky structure which is weakly developed in the topsoil and moderately developed in the subsoil.

Other features:- Limestone bedrock occurs at approximately 60cm depth.

3.2 Soil Resources

Topsoils

Unit T1

Texture/stone content:- Medium clay loam with 3-8% small and medium subangular limestones.

Structure:- Weakly developed medium angular blocky.

Occurrence:- Across the whole site.

Thickness:- Median thickness 25cm.

Subsoils

Subsoils

Unit S1A

Texture/stone content:- Medium-textured soils with 5-8% medium and large subangular limestones.

Structure:- Moderately developed medium angular blocky.

Occurrence:- In the west of the site.

Thickness:- Mean thickness 20cm.

Unit S1B

Texture/stone content:- Medium-textured soils with 5-8% medium and large subangular limestones.

Structure:- Moderately developed medium angular blocky.

Occurrence:- In the east of the site.

Thickness:- Mean thickness 34cm.

4. SOIL PROFILE DESCRIPTION

Barnsdale Bar Quarry Extension.

PIT 1, nr boring 1B.

Land Use: Cereals

Gradient: 1° SW

Weather: Windy with sleet showers

DEPTH (cm)	DESCRIPTION
0 - 30	Dark brown (10 YR 4/3) medium clay loam; no mottles; stoneless; moist; weakly developed medium angular blocky structure; medium packing density; porous; moderately sticky and moderately plastic; many fine fibrous roots; calcareous; clear smooth boundary.
30 - 60	Brown (7.5 YR 5/4) sandy clay loam; few faint fine strong brown (7.5 YR 5/6) mottles; very slightly stony (4% medium subangular soft limestones); slightly moist; friable; moderately developed medium angular blocky structure; medium packing density; slightly porous (70.5% pores 70.5mm); moderately sticky; moderately plastic; common fine fibrous roots; calcareous; clear wavy boundary.
60 - 80	Weathered soft limestone with 20 - 30% brown (7.5 YR 5/4) medium clay loam in interstices; few fine fibrous roots.

MAP(S)