

AGRICULTURAL LAND CLASSIFICATION

Caistron/Little Tosson Quarry
Rothbury, Northumberland

Extension to sand and
gravel quarry

MAFF
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AGRICULTURAL LAND CLASSIFICATION REPORT: Caistron/Little Tosson Quarry,
Rothbury, Northumberland

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:-

NU 008020

Location Details:-

5 km west of Rothbury
on the River Coquet

Site Size:-

38 hectares

1.2 Survey Methods

Date Surveyed:-

18th October 1991

Boring Density and Spacing Basis:-

At 100 m intervals on a
grid pattern
predetermined by the
National Grid

Sampling Method:-

By hand auger borings
to a depth of 1 metre

Number of Borings:-

43

Number of Soil Pits (used for):-

2 pits were dug to
assess soil structure
and to describe typical
profiles

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:-

Permanent grassland with an area of arable land in the centre of the site

1.4 Climate and Relief

Average Annual Rainfall (AAR):-

842 mm

Accumulated Temperature above 0°C (January-June):-

1248 day °C

Field Capacity Days:-

217 days

Altitude average:-

90 m a.o.d.

maximum:-

95 m a.o.d.

minimum:-

89 m a.o.d.

Climatic limitation (based on interaction of rainfall and temperature values:-

Grade 2

Relief:-

Level floodplain except for area of irregular topography at the western edge of the site

Slopes (°):-

0-2° but with banks of up to 15° in the western corner

Gradient Limitations:-

The irregular micro-relief in this western area will restrict the use of agricultural machinery

Limiting gradient(s):-

15°

Grade(s)/subgrade(s):-

Subgrade 3b

Occurrence on site:-

An area in the west of the site

1.5. Geology and Soil

Solid Strata:-

Lower carboniferous cemenstones

Depth of solid rock from surface:-

More than 1 metre

Drift types:-

Alluvial sands & gravel

Thickness of drift and distribution:-

Drift covers the whole site to a depth of more than 1 metre

Soil Types and Distribution:-

Medium textured topsoils over similar or lighter subsoils cover the central and southern area. Medium topsoils over coarse sand & gravel occur in the north and east of the site

Soil Textures (topsoils and subsoils):-

Topsoils consist generally of medium clay loam with occasional fine sand lenses. Subsoils are similar in the deeper soils though deposits of coarse sand & gravel are eventually reached at varying depths everywhere on the site

Soil Series/Associations:-

Enborne

On 1/250000 map:-

Identified on site:-

1.6 Drainage

Soil type and Wetness Class:-

Most soils are well drained and fall within Wetness Class I

Drainage Limitations:-

None, although there is a winter flood risk

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 Total</u>
		<u>Area</u>
3a	34.89	89.0
3b	3.34	9.0
4	0.18	0.5
Non Agricultural	0.55	1.5
	————	————
Total	38.96	100
	————	————

Subgrade 3a

Distribution on site:-

This subgrade covers almost the whole site

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

Alluvial medium clay loam topsoils over similar upper subsoils passing to sand or sand & gravel at depth

Depth to Slowly Permeable Layers:-

None present

Wetness and Drainage Class:-

Wetness Class I: well drained

Stone Percentage and Type:-

Topsoil - 0-15% hard rocks and stones

Upper subsoils - 0-15% hard rocks and stones

Lower subsoil 40-50% +

Grade Limiting Factors:-

Soil droughtiness, topsoil stoniness and winter flood risk

Subgrade 3b

Distribution on site:-

Adjoining the river on the western edge of the site

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

Alluvial medium clay loam topsoils over sandy loams or coarse sand & gravel

Depth to Slowly Permeable Layers:-

None present

Wetness and Drainage Class:-

Wetness Class I: well drained

Stone Percentage and Type:-

Topsoil - 0-15% hard rocks and stones

Subsoil - 40-50% hard rocks and stones

Grade Limiting Factors:-

Microrelief - this area contains many strong slopes of varying aspects with a stream running through the middle all of which would hinder the use of agricultural machinery

Grade 4

Distribution on site:-

A small strip adjoining the river on the western edge of the site

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

Alluvial fine sandy silt loams over coarse sand & gravel

Depth to Slowly Permeable Layers:-

None present

Wetness and Drainage Class:-

Wetness Class I - well drained

Stone Percentage and Type:-

Topsoil - 0-15% hard rocks and stones

Subsoil - 0-50% hard rocks and stones

Grade Limiting Factors:-

This low lying area is subject to frequent flooding and is limited to Grade 4 for this reason

Non Agricultural

Type and location of land included:-

A small area of scrub woodland on the north side of the river to the west of the main site

**Resource Planning Group
Leeds Regional Office
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3.0 STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

3.1 Soil Properties

One soil type occurs on the site. Its distribution along with soil depth and quantity information is shown on the accompanying maps.

Soil Type 1:- Well drained medium clay loams over similar or lighter upper subsoils passing to coarse sand & gravel at depth

Occurrence:- Across the whole site

Textures:- Topsoil: medium clay loam or occasionally sandy clay loam

Upper Subsoil: medium clay loam or sandy loam

Lower Subsoil: medium or coarse sand & gravel

Stone content:-

Topsoil:	0-15%
Upper Subsoil:	0-15%
Lower Subsoil:	40-50%+

Horizon thicknesses:-

Topsoil mean:	35 cm
Upper Subsoil mean:	35 cm
Lower Subsoil mean:	30 cm

Profile pit features:- Moderately developed subangular blocky topsoil and subsoil structures

3.2 Soil Resources

Topsoils

Unit T1

Texture/stone content:- Medium clay loam or occasionally sandy clay loam with 0-15% stones

Structure:- Medium subangular blocky structure moderately developed with no mottling present

Occurrence:- Over the whole site

Thickness:- 35 cm (mean)

Subsoils

Upper Subsoils

Unit U1

Texture/stone content:- Medium clay loam or sandy loam with 0-15% stones

Structure:- Moderately or weakly developed subangular blocky

Occurrence:- Over the whole site

Thickness:- 25 cm (mean)

Subsoils

Lower Subsoils

Unit S1

Texture/stone content:- Medium or coarse sand & gravel

Structure:- Structureless

Occurrence:- Over the whole site

Thickness:- > 40 cm

4.0 SOIL PROFILE DESCRIPTIONS

Soil Type 1:- Boring 38
Land Use:- Rough grazing
Slope:- 0°
Weather:- Fine and windy

<u>HORIZON</u>	<u>DEPTH (cm)</u>	<u>DESCRIPTION</u>
1	0-35	Dark brown (10 YR 4/3) medium clay loam; no mottles, stoneless, slightly moist; moderately developed medium subangular blocky structure; medium packing density; abundant fine fibrous roots; common fine pores and fissures; non-calcareous, moderately weak soil strength; clear wavy boundary
2	35-70	Brown (10 YR 5/3) medium clay loam with lenses of medium to coarse sand; common, fine distinct strong brown mottles (7-5 YR 5/8); moderately developed medium subangular blocky structure; few fine fibrous roots, non calcareous stoneless; slightly moist medium packing density; few fine pores and fissures; moderately weak soil strength
3	70-110	Loamy medium sand, dark greyish brown (10 YR 4/2), unmottled, very stony, moist; loose structureless

MAP(S)