

AGRICULTURAL LAND CLASSIFICATION AND
STATEMENT OF PHYSICAL CHARACTERISTICS

FORCETT QUARRY, EAST LAYTON,
NORTH YORKSHIRE
PROPOSED EXTENSION OF LIMESTONE QUARRY

ADAS
LEEDS REGIONAL OFFICE

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1. AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED
QUARRY EXTENSION AT EASY LAYTON, NORTH YORKSHIRE

1.1

The site is centred on National Grid Reference NZ 160105 and lies immediately north of the village of East Layton, about 6 km north west of Scotch Corner. Survey work was carried out in August 1991 when soils were examined by hand auger borings down to a depth of 1.00 m (where stone content permitted). The borings were made at points predetermined by the National Grid and at a density of one per hectare. In addition 2 soil profile pits were dug to collect further information on soil characteristics. All land quality assessments were made using the methods described in "Revised Guidelines and Criteria for Grading the Quality of Agricultural Land" (MAFF 1988).

1.2 Land Use

Most of the land consists of permanent grazing or set aside.

There is also a small area of mixed woodland in the centre of the site.

1.3 Climate and Relief

Average Annual Rainfall is approximately 748 mm. Accumulated temperature above 0°C between January and June is 1228 day°C and the land is at field capacity for 193 days a year. The above combination of rainfall and accumulated temperature places an overall climatic limitation of Grade 2 on land in this area.

The site varies between 140 m and 160 above Ordnance Datum. It is gently or moderately sloping in the south, but almost flat in the north.

1.4 Geology, Soils and Drainage

The site is largely underlain by the Carboniferous Great Limestone over which there are superficial deposits of boulder clay. Soils consist typically of medium clay loam topsoils (which are slightly to moderately stony over much of the site) overlying heavy clay loam or clay subsoils. Most profiles are poorly drained, falling in Wetness Class IV.

1.5 Agricultural Land Classification Grades

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

Grade/Subgrade	Hectares	Percentage of Total Area
3b	33.90	56.2
Non Agricultural	1.7	2.8
Urban (mainly existing quarry)	<u>24.75</u>	<u>41.0</u>
Total	<u>60.35</u>	<u>100</u>

Subgrade 3b

All of the agricultural land on the site falls within subgrade 3b. Soils in the south and west of the site consist of medium clay loam topsoils overlying medium clay loam or heavy clay loam upper subsoils and heavy clay loam lower subsoils. The soils are imperfectly drained, falling into (Wetness Class III) with slowly permeable layers occurring at about 10 cm from the surface. Profiles are slightly to moderately stony, often with around 16% medium to large sandstones and other hard rocks in the topsoil. In these soils, stoniness is the principal limiting factor on ALC grade.

In the north and east of the site, medium clay loam topsoils overlie heavy clay loam, clay or silty clay subsoils. These soils are poorly drained, falling in Wetness Class IV, with slowly permeable layers occurring at depths of around 30 cm. Profiles are generally stoneless and in this area soil wetness is the main limiting factor on ALC grade.

Non Agricultural

This covers the mixed woodland in Hallmires Plantation in the north of the site.

Urban

This consists of the existing quarry and access road.

2. STATEMENT OF PHYSICAL CHARACTERISTICS

The site contains 2 major soil types - a medium to heavy textured soil which is moderately stony and a heavy textured soil which is stoneless. Topsoil and subsoil resources are shown on the accompanying maps along with soil depth and quantity information.

1. Moderately Stony, Medium to Heavy Textured Soil

The topsoil (Unit T1) consists of medium clay loam which is moderately stony, with around 15% medium and large sandstones and hard stones. Typically the topsoil has no mottling and has a moderately developed medium sub angular blocky structure. Mean thickness is 25 cm. The subsoil (Unit S1) consists of medium or heavy clay loam becoming predominantly heavy clay loam at depth. Subsoils are slightly to moderately stony (10-15% medium and large sandstones and hard stones) and have moderately developed angular blocky structures which pass from medium to coarse at depth. Slowly permeable layers often occur at depths of around 60 cm.

2. Stoneless, Medium to Heavy Textured Soil

The topsoil (Unit T2) consists of a mottled medium clay loam which is stoneless and has a moderately developed medium angular blocky or sub angular blocky structure. Mean thickness is 25 cm. The subsoil (Unit S2) consists of heavy clay loam, clay or silty clay with a weakly developed adherent coarse angular blocky structure. It is stoneless, slowly permeable and distinctly mottled.

3. SOIL PROFILE DESCRIPTIONS

a. Moderately Stony Medium to Heavy Textured Soil

Pit 1: Near Boring 50

Slope: 2°N Land Use: Set Aside Land Wetness Class: III

Horizon	Depth	Description
1	0-35 cm	Dark greyish brown (10YR 4/2) medium clay loam; no mottles; slightly stony (12-15% medium and large sandstones and limestones); slightly moist; moderately developed medium angular blocky structure; medium packing density; slightly porous; few fine and medium fissures; moderately firm soil strength; moderately sticky; moderately plastic; abundant fine and very fine fibrous roots; non calcareous; clear; smooth boundary.
2	35-60 cm	Brown (7.5 YR 4/2) heavy clay loam with many distinct yellowish brown (10YR 5/4) mottles; slightly stony (12-15% medium and large sandstones and limestones); slightly moist; moderately developed medium angular blocky structure; medium packing density; very slightly porous; few fine fissures; moderately firm soil strength; moderately sticky; moderately plastic; common fine and very fine fibrous roots; non calcareous; abrupt smooth boundary.
3	60-100 cm	Greyish brown (10YR 5/2) heavy clay loam with common distinct strong brown (7.5 YR 4/6) mottles; very slightly stony (0-5% medium sandstones and limestones); slightly moist; moderately developed coarse angular blocky

Horizon	Depth	Description
3	60-100 cm cont	structure; moderate packing density; very slightly porous; moderately firm soil strength; moderately sticky; moderately plastic; few fine and very fine fibrous roots; non calcareous.

b. Stoneless Medium or Heavy Textured Soil

Pit 2: Near Boring 3b

Slope: 0°

Land Use: Permanent Grazing

Wetness Class: IV

Horizon	Depth	Description
1	0-20 cm	Dark grey (10YR 4/1) heavy clay loam; many distinct strong brown (7.5 YR 5/8) mottles; stoneless; moist; well developed coarse angular blocky structure; high packing density; slightly porous; common fine to coarse fissures; very strong soil strength; moderately sticky; moderately plastic; common fine and very fine fibrous roots; non calcareous; abrupt smooth boundary.
2	20-100 cm	Grey (10YR 5/1) silty clay; many distinct yellowish brown (10YR 5/8) mottles; stoneless; moist; weakly developed adherent coarse angular blocky structure; high packing density; very slightly porous; soil deforms under pressure; moderately sticky; moderately plastic; few fine fibrous roots; non calcareous.