AGRICULTURAL LAND CLASSIFICATION

LAND AT LANTON, NEAR WOOLER, NORTHUMBERLAND

Proposed Sand and Gravel Quarry
(Replacement for Cheviot Quarry, Milfield)

MAFF
Leeds Regional Office

APRIL 1992
File Ref: 2FCS 5814
Project No: 19/92

Lds.AL6.Lant.on

CONTENTS

MAP(S)

AGRICULTURAL LAND CLASSIFICATION REPORT, LAND AT LANTON, NEAR WOOLER, NORTHUMBERLAND.

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:-	NT 956 308
Location Details:-	4½km northwest of Wooler, adjacent to the A697.
Site Size:-	40 ha (A further 6.5 ha outside the application area to the south of House Plantation were also surveyed).

1.2 Survey Methods

Date Surveyed:-	1st and 2nd April 1992
Boring Density and Spacing Basis:-	One boring per hectare at 100m intervals predetermined by the National Grid.
Sampling Method:-	By hand auger to a maximum depth of 1.00m
Number of Borings:-	39 (+ 6 south of House Plantation, outside the application area).
Number of Soil Pits (used for):-	5, to confirm topsoil and subsoil stoniness and to collect further information on soil physical characteristics.

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:-	Mainly arable but with significant areas of farm and commercial woodland and a small area of permanent grazing in the southwest.	
1.4 Climate and Relief		
Average Annual Rainfall (AAR):-	755	mm
Accumulated Temperature above 0°C (January-June):-	1282	day °C
Field Capacity Days:-	199	days
Moisture Deficit:		
wheat:-	76	mm
potatoes:-	58	mm
Altitude average:-	50	m a.o.d.
maximum:-	51	m a.o.d.
minimum:-	41	m a.o.d.
Climatic limitation (based on interaction of rainfall and temperature values:-	Grade 2	
Relief:-	Flat to very gently sloping but with an area of moderately sloping non-agricultural land in the southwest.	
Slopes (°):-	Generally 0-2° but approximately 6° in a small area in the southwest.	
Gradient Limitations:-	None.	

1.5 Geology and Soil

Solid Strata:-	Carboniferous Cementstones.
Depth of solid rock from surface:-	Greater than 1.00m across the whole site.
Drift types:-	Glacial sand and gravel with a small area of alluvium in the southwest.
Thickness of drift and distribution:-	Greater than 1.00m across the whole area.
Soil Types and Distribution:-	Light-textured soils cover the entire site.
Soil Textures (topsoils and subsoils):-	Typically medium sandy loam or loamy medium sand topsoils overlying stony loamy sand or sand subsoils.
Soil Series/Associations:-	
On 1/250000 map:-	Newport I Association
Identified on site:-	Newport I Association
Soil Limitations and type:-	Soil droughtiness and topsoil stone content.

1.6 Drainage

Soil type and Wetness Class:-	Soils are well drained and fall in Wetness Class I.
Drainage Limitations:-	None.

2.0 Agricultural Land Classification Grades

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

a) Within Application Area

Grade/Subgrade	Hectares	Percentage of Agricultural Area	Percentage of Total Area
1			
2	2.98	9	7.5
3a	29.84	91	75
3b			
4			
5			
Farm and Commercial Woodland	7.33		17.5
Agricultural Buildings			
Urban			
Other			
Total	40.15	100	100

b) Outside application area (south of House Plantation)

1			
2	3.30		50.2
3a	3.27		49.8
3b			
4			
5			
TOTAL	6.57		100

Grade 2

Distribution on site:-	In two separate areas in the southern part of the site, plus an area adjoining the river outside the application area.
Soil Types and Textures:-	Light to very light-textured soils - typically medium sandy loam or loamy medium sand topsoils overlying loamy medium sand or loamy coarse sand subsoils.
Depth to Slowly Permeable Layers:-	No slowly permeable layers occur.
Wetness and Drainage Class:-	Soils are well drained (Wetness Class I).
Stone Percentage and Type:-	The area in the southwest is stoneless. The central area has a topsoil stone content of approximately 10% and a subsoil stone content of 25% to 50%.
Grade Limiting Factors:-	Climate, soil droughtiness and topsoil stoniness.

Subgrade 3a

Distribution on site:-	Land in this subgrade covers the north and southeast of the site, plus an area outside the application area south of House Plantation.
Soil Types and Textures:-	Light to very light textured soils typically consisting of sandy loam or loamy sand topsoils overlying loamy sand or sand subsoils.
Depth to Slowly Permeable Layers:-	No slowly permeable layers occur.
Wetness and Drainage Class:-	Well drained soils (Wetness Class I).
Stone Percentage and Type:-	Topsoil stone content varies from 5% to 15% of small to large rounded hardstones. Subsoil stone content varies from 20% to 60% small to large rounded hardstones.
Grade Limiting Factors:-	Topsoil stoniness and soil droughtiness.

Non Agricultural

Type and location of land included:-	Commercial and farm woodland principally in the west and north of the site.

3.0 STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

3.1 Soil Properties

Two soil types occur on the site. Their distribution along with soil depth and quantity information are shown on the accompanying maps.
(Soil areas and quantity information relate only to the application area).

Soil Type 1:-	Slightly to very stony sand and gravel soil.
Occurrence:-	All of the site with the exception of a small area in the southwest.
Textures:-	Sandy loam, or loamy sand topsoils overlying loamy sand or sand subsoils.
Stone content:-	5 - 15% in the topsoil and 20% - 60% in the subsoil.
Horizon thicknesses:-	Topsoil:- 15 - 70cm; subsoil mean 65 cm.
Profile pit features:-	Weakly developed sub-angular or angular blocky structure in the topsoil and weakly developed granular or single grain structure in the subsoil.

Soil Type 2:-	Stoneless sandy soil.
Occurrence:-	In the southwestern corner of the site.
Textures:-	Medium sandy loam topsoil over loamy medium sand or medium sand subsoil.
Stone content:-	0 - 5% small and medium rounded hardstones.
Horizon thicknesses:-	Topsoil 30 - 70cm subsoil mean 60 cm
Profile pit features:-	Well developed medium sub-angular blocky structure in the topsoil and weakly developed medium angular blocky structure in the subsoil.

3.2 *Soil Resources*

Topsoils

Unit T1

Texture/stone content:-	Medium sandy loam or loamy medium sand containing 5-15% small to large rounded hardstones.
Structure:-	Weakly developed medium angular or sub-angular blocky.
Occurrence:-	This topsoil type covers all but the southwestern corner of the site.
Thickness:-	Mean thickness is 35 cm.

Unit T2

Texture/stone content:- Medium sandy loam which contains 0-5% small and medium rounded hardstones.

Structure:- Well developed medium sub-angular blocky.

Occurrence:- In the southwestern corner of the site.

Thickness:- Mean thickness is 40 cm.

Subsoils

Unit S1

Texture group/stone content:- Light or very light, (loamy sand or sand), containing 20-60% small to large rounded hardstones.

Structure:- Weakly developed medium granular or single grain structure.

Occurrence:- Over the whole site with the exception of *southwestern corner*.

Thickness:- Mean:- 65 cm.

Unit S2

Texture group/stone content:- Light or very light (stoneless loamy medium sand or medium sand).

Structure:- Weakly developed medium angular blocky.

Occurrence:- In the southwestern corner of the site.

Thickness:- Mean:- 60 cm.

4.0 Soil Profile Descriptions

Pit A:- Slightly stony to very stony sand and gravel soil.
Location: Near boring 36
Climate: Wet, cold, windy, cloudy.
Land Use: Arable
Gradient: 0°

Depth (cm)	Description
0 - 30	Dark brown (75YR3/2) medium sandy loam; unmottled; very slightly stony with 3% hard rocks and stones; moist; weakly developed fine sub-angular blocky structure; very friable; non sticky; non plastic; few fine fibrous roots; low packing density; abrupt smooth boundary.
30 - 100	Yellowish brown (10YR5/6) loamy coarse sand; unmottled; slightly stony with 10% hard rocks and stones; moist; single grain apedal structure; medium packing density; non sticky; non plastic; few fine fibrous roots to 50 cm.

Pit B:- Stoneless sandy soil.

Location: 50 metres south of Boring 38

Climate: Wet, cold, windy, cloudy.

Land Use: Permanent grassland.

Gradient: 0°

Depth (cm)	Description
0 - 25	Dark brown (75YR3/2) medium sandy loam; stoneless; unmottled; well developed medium sub-angular blocky structure; moist; friable; slightly sticky; slightly plastic; common fine fibrous roots; diffuse smooth boundary.
25 - 100	Light brown (75YR6/3); medium sand; common coarse distinct brownish yellow (10YR6/8) mottles becoming abundant after 75 cm; stoneless; moist; very friable; weakly developed medium angular blocky; common fine and medium pores and fissures; non sticky; non plastic; non calcareous; common fine fibrous roots.

MAP(S)