AGRICULTURAL LAND CLASSIFICATION *AND SOIL RESOURCES* VALIDATION REPORT FOR TOWN FARM, NORLEY

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1. INTRODUCTION

1.1 Reading Agricultural Consultants (RAC) were commissioned by Tarmac to undertake an Agricultural Land Classification (ALC) and Soil Resources Survey on the site at Town Farm, Norley. The site had been proposed as an extension to an existing quarry site.

1.2 At the request of MAFF LUPU the Resource Planning Team visited the site in February 1994 to validate the ALC and Soil Resources Report prepared by RAC.

1.3 The validation survey consisted of a grid survey at 1:10000 scale with two soil pits opened in order to examine soil structure and other properties in more detail.

2. AGRICULTURAL LAND CLASSIFICATION

2.1 RAC estimated the area of the site to be 22.5 ha of which 21.5 ha was agricultural land. RAC found that the following proportions of ALC grades were present:

Grade/Sub-grade	Area (ha)	% of Site
2	17	80
3a	1.2	5
3b)		
4)	3.3	5.5
5)		

2.2 RAC characterised Grade 2 land as sandy loam textured topsoil with a sandy loam or loamy sand upper subsoil over sand. The soils are slightly stony or stony.

2.3 Sub-Grade 3a was characterised by RAC as having slightly stony sandy loam or loamy sand topsoils. These overlie slightly or moderately stony upper subsoils (texture not given), over very stony sand.

2.4 RAC allocated land to Sub-Grade 3b and Grades 4 and 5 on the basis of gradient limitation.

2.5 The Resource Planning Team found the site to be predominantly Grade 2 and were therefore in agreement with RAC. However, the Resource Planning Team did not agree with the areas allocated by RAC to Sub-Grade 3a. The Resource Planning Team found gravels in the subsoil at only 2 isolated borings, only one of which coincided with an area where RAC found gravels and classify the land as Grade 2. The Resource Planning Team did not observe the

small hollow noted by RAC on the southern boundary of the site, but a boring in this area showed no sign of soil wetness and was classified as Grade 2.

2.6 On the western boundary no slope was observed which was steep enough to be placed into Grade 4.

2.7 The Resource Planning Team were in agreement with RAC over the grading of the slopes on the eastern boundary. However, the Resource Planning Team regarded the slopes in the north west corner as being predominantly greater than 18° and therefore placed the land into Grade 5.

3 SOIL RESOURCES

3.1 RAC identified two soil units on the site:

A Topsoil: predominantly sandy loam - 300 mm;
Upper Subsoil: sandy loam or loamy sand - 200 mm;
Lower Subsoil: predominantly sand - 700 mm.

B Topsoil: predominantly sandy loam - 300 mm;
Upper Subsoil: sandy, slightly stony - 200 mm;
Lower Subsoil: gravely to at least 1200 mm.

3.2 According to RAC Soil Unit A is predominant with Soil Unit B occurring only in the two small areas where gravels occurred in the subsoil and corresponding with land classified as Sub-Grade 3a.

3.3 RAC recommend that the topsoil from both units is stripped together. They also recommend that the upper subsoil from both units is stripped together. The lower subsoil is regarded as part of the workable mineral deposit. For restoration RAC suggest that the lower subsoil should derive from the present material or from unworked sand above the water table at the base of the workings.

3.4 RAC effectively recommend that the soils on the site are stripped as one unit.

3.5 In making the recommendations for stripping, RAC appear to have ignored their own description of the soil units. The upper subsoil of Unit A is described as sandy loam or loamy sand, whereas the upper subsoil of Unit B is described as sandy.

3.6 The Resource Planning Team were not in agreement with RAC over the extent and description of the Soil Units. The Resource Planning Team identified two Soil Units and these were characterised from soil pits. Unit A consisted of medium sandy loam to between 30cm and 38cm over loamy medium sand to between 50cm and 90cm, over medium sand to at least 120cm. Unit B consisted of medium sandy loam to about 30cm over either loamy medium sand or medium sand to about 40cm, then medium sand to depth. Gravels were encountered in the subsoil at one boring in each of the Units.

3.7 RAC recommend that the topsoil is stripped as one unit across the site. The Resource Planning Team is in agreement with this. However, the Resource Planning Team would not agree with RAC's recommendation of stripping and re-using the subsoil as one unit, rather that the subsoil within the units identified by the Resource Planning Team should be stripped and re-used separately.

3.8 The specifications recommended by RAC for the reinstated soil profile are:

30cm of topsoil, 20cm of upper subsoil and at least 50cm of lower subsoil.

If the soil profile was reinstated to only 100cm depth then the moisture balance would cause it to be classified as Sub-Grade 3a. Therefore the profile must be reinstated to at least 120cm depth.

4. SUMMARY

4.1 The Resource Planning Team carried out a validation survey at Town Farm, Norley and their findings differed from those of RAC. The Resource Planning Team found there to be a greater area of Grade 2 and less Grade 4 and Sub-Grade 3a than found by RAC. The Resource Planning Team was in agreement with RAC over the description of Soil Unit A but not the actual extent of this unit. The Resource Planning Team did not agree with the description or area of Unit B given by RAC.

4.2 Agricultural Land Classification Grades as determined by the Resource Planning Team.

Grade/Sub-Grade	Area (ha)	% of Agricultural Land	% of Survey Area
2	18.3	91.5	90.1
4	0.2	1.0	1.0
5	1.5	7.5	7.4
Other Land			
Woodland	0.1		0.5
Urban	0.2		1.0
TOTAL	20.3	100.0	100.0

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SOIL RESOURCES REPORT
TOWN FARM, NORLEY

1.1 The soils on this site were examined using a Dutch auger at a detailed survey scale of 1:10000 with a minimum auger boring density of 1/ha.

1.2 The soils have been divided into two Soil Units on the basis of the survey and pit profiles have been described to characterise the soils in each Unit.

1.3 Unit A:

These soils typically comprise about 35cm of medium sandy loam topsoils overlying loamy sand and sand subsoil. The topsoils contain about 5% hard stones with about 7% occurring in the upper subsoil. About 18% gravels with sand occur below 45cm at 2 borings. A typical profile for this unit is as follows:-

0-35cm Dark brown (7.5 YR 3/2) slightly stony, medium sandy loam, firm, strongly developed medium sub-angular blocky.

35-55cm Brown (7.5 YR 4/4) slightly stony, loamy medium sand, friable, weakly developed fine sub-angular blocky.

55-120cm Strong brown (7.5 YR 5/6) stoneless, medium sand, very friable, granular.

1.4 Unit B:

These soils are found in the north west of the site. This soil typically has a sandy loam topsoil to about 40cm over sand subsoil. A typical profile description for this unit is as follows:-

0-40cm Brown (7.5 YR 4/2) slightly stony, medium sandy loam, firm, strongly developed medium sub-angular blocky.

40-65cm Strong brown (7.5 YR 5/6) very slightly stony, medium sand, very friable, weakly developed medium sub-angular blocky.

65-120cm Reddish yellow (7.5 YR 6/6), stoneless, medium sand, very friable, weakly developed coarse angular blocky.

1.5 Unit A occupies 14.7 ha (72.4% of the site).

Unit B occupies 5.6 ha (27.6% of the site).

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Following a change to the application boundary by the Mineral Operator, the following amended agricultural land classification grades now apply to the site:

Grade/Subgrade	Area (ha)	% of agricultural land	% of survey area
2	17.9	93.2	91.8
5	1.3	6.8	76.7
Other land			
Urban	0.2		1.0
Woodland	0.1		0.5
Totals	19.5	100.0	100.0

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