STATEMENT OF PHYSICAL CHARACTERISTICS

TARNACRE HALL FARM

The site at Tarnacre Hall Farm which is the subject of a planning application for sand and gravel extraction was surveyed by the Resource Planning Group in February 1992. The site is situated between St Michael's on Wyre and Catterall, about 9 miles north of Preston. It covers about 36 ha adjacent to Tarnacre Lane and is surrounded by agricultural land on all other sides. Most of the site was in agricultural use, namely grass and winter sown cereals, at the time of survey apart from small areas of woodland and ponds. The line of an oil pipeline being excavated through the centre of the site was not surveyed.

Climate

Average annual rainfall in the vicinity of the site is 969 mm, and the accumulated temperature above 0°C for the period January to June is 1425 day °C. The combination of rainfall and temperature indicates an overall climatic limitation to Grade 2. The balance between rainfall and potential evapotranspiration gives moisture deficits of 76 mm for winter wheat and 62 mm for potatoes. The median duration of field capacity is 217 days and the growing season extends to 238 days from the beginning of April to late November. The mean date of last frost is early May.

Site

The site is on a level flood plain, at an altitude of 7-9 m. Although level overall, slight undulations in the ground are evident over much of the site.

Soil

The solid geology in the area of this site comprises rocks of the Sherwood Sandstone Group and Hambleton Mudstones. These are overlain by drift deposits of Alluvium over much of the site and a small area of Till in the centre. The soils derived from these deposits are stoneless, moderately permeable and generally silty clays and clays.

Agricultural Land Classification

Grade 3A

Grade 3A land occurs around Tarnacre Hall Farm in the south and east of the site. Soils have generally lighter topsoils, either sandy silt loams or medium silty clay loams with a high proportion of organic matter, over silty clay and clay. Some profiles have sandy sub-soil horizons. A number of profiles within this area and particularly on the northern edge of the Grade 3A are very borderline to Grade 3B. Wetness is the main limiting factor to the use of this land.

Grade 3B

The remainder of the site has been mapped as Grade 3B. Soils generally have heavier topsoils but are otherwise similar to those described above.

Distribution of Grades

Grade	ha	% of agricultural area	% of total area
Grade 3A	15.1	48	42
Grade 3B	16.3	52	46
Non agricultural	1.2	-	3
Ag buildings	0.8	-	2
Not surveyed	2.5	-	7
Total	35.9	-	-

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Soil Units

Soils were examined to a depth of 1 m on a 100 m x 100 m grid using a Dutch soil auger, with soil pits to determine details such as subsoil structure. Although there is considerable variation between profiles, no overall pattern emerged to allow the delineation of separate soil units.

The soils are stoneless and grey or dark grey in colour. Topsoils are generally silty clay loams with some sandy silt loams and some heavy silty clay loams and silty clays. They have a high organic matter content and at least one profile with a peaty loam topsoil was found. The organic matter improves the structure and drainage of these soils considerably. The topsoil is generally deep, at least 35 cm and often 40 cm.

Subsoils are quite variable, but heavy silty clay loam or silty clay to depth is most common. A number of profiles have horizons of sand, loamy sandy or sandy clay loam, particularly in the centre of the site around Buttfield Wood and the ponds. Structure is moderate medium angular blocky in the upper subsoil and coarse prismatic in the lower subsoil. Most of the subsoils are porous with common roots and numerous large earthworm channels. They are affected by fluctuating groundwater levels and some were wet below 65-70 cm. Gleying occurs at various depths from the surface to 55 cms, but because of the porous nature of the subsoil, most do not have slowly permeable layers. A description of the common heavy soils on this site is given below.

0-40 cm organic silty clay, dark grey (10 yr 4/1) moderate fine sub angular blocky structure, stoneless, many plant roots.

40-70 cm silty clay, grey (10 yr 5/1), very many ochreous mottles, moderate coarse prismatic structure, porous, stoneless, common root, common large earthworm channels.

70-100 cm silty clay, grey (10 yr 5/1), very many ochreous mottles, massive structure, common fine root.

Gleyed below 40 cm, no SPL, wetness class 2, grade 3B.

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