STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION

BELLFLASK, NORTH STAINLEY, NEAR RIPON

Proposed Sand and
Gravel Extraction Site

MAFF
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STATEMENT OF PHYSICAL CHARACTERISTICS AND
AGRICULTURAL LAND CLASSIFICATION REPORT:
LAND AT BELLFLASK, NORTH STAINLEY, NEAR RIPON

1. INTRODUCTION AND SITE CHARACTERISTICS

LOCATION

The site is located around National Grid Reference SE 299772, approximately 6 km north of Ripon. It covers 39.6 hectares, 50 per cent of which is in agricultural use.

LAND USE

Cereals were the only agricultural crop at the time of survey. Non-agricultural land uses consist of sand and gravel extraction sites and farm woodland.

CLIMATE

Average annual rainfall is approximately 668 mm. Accumulated temperature above 0°C (January-June) is 1353 day°C and the land is at field capacity for 167 days a year. The rainfall and accumulated temperature figures indicate that there is no overall climatic restriction on ALC grade.

Although summer moisture deficits of 103 mm for winter cereals and 92 mm for potatoes indicate a moderate to severe drought risk on the gravelly soils occurring in the western half of the site, the risk is ameliorated by irrigation which has been successfully practiced on this land for many years.

RELIEF

The site is virtually level at a mean altitude of 40 metres above Ordnance Datum.

GEOLOGY AND SOILS

Soils on the site are formed on recent river terrace deposits which vary from stoneless coarse loamy drift in the east, to limestone and sandstone gravels, interbedded with sand lenses, in the west.

2. SOIL RESOURCES

Two main soil types occur on the site. These are as follows:

SOIL TYPE 1: LIGHT TEXTURED TOPSOILS OVER SAND AND GRAVEL DEPOSITS

These soils occur in the western half of the site and consist mainly of stoneless to very slightly stony sandy loam or loamy sand topsoils about 35 cm thick, over sand and gravel. Moderately stony topsoils also occur but are confined to two small areas near Bog Wood.

A soil profile pit showed the topsoil to be slightly calcareous with weakly developed medium and fine subangular blocky structural features. The sand and gravel deposits below this consist of mixed limestone and sandstone gravel containing thin lenses and seams of coarse sand.

SOIL TYPE 2: LIGHT TEXTURED ALMOST STONELESS TOPSOILS AND SUBSOILS

These soils occur in the eastern half of the site. The topsoils are similar to those above and pass into virtually stoneless and non calcareous sandy loam subsoils to depth. Stonier profiles occasionally occur but are confined to isolated patches too small to separate at the survey scale.

A soil inspection pit indicates that the topsoil has a moderately developed coarse angular blocky structure, passing into a stoneless subsoil with moderately developed medium prismatic structural features. All profiles are freely drained except for areas immediately adjacent to Bellflask Wood where a poorly maintained ditch has resulted in slight localised wetness problems.

The soil resource units identified on the site are as follows.

TOPSOILS

Topsoil Unit T1 is common to both soil types and consists largely of, stoneless to very slightly stony light textured material with a mean thickness of 35 cm. Several patches of stonier material also occur within this unit, but are too small to show as separate resources.

SUBSOILS

Subsoil Unit S1 (cf soil type 2) is light textured, and almost stoneless. It is non-calcareous and has a mean thickness of 65 cm.

OTHER MATERIAL

Sand and gravel deposits (cf soil type 1) occur in the western half of the site and consist of limestone-sandstone gravel interbedded with stoneless sand lenses.

A soil storage area, connected with the existing sand and gravel extraction site, adjoins Bellflask House.

3. AGRICULTURAL LAND CLASSIFICATION GRADES

The ALC grades occurring on the site are as follows:

GRADE	HECTARES	PER CENT OF TOTAL SITE AREA
2	9.6	24
3a	8.4	21
3b	2.2	5.4
Open Water	2.3	5.6
Non Agricultural	3.8	10
Urban	13.3	34
Total	39.6	100%

GRADE 2

Land in this grade occurs in the eastern half of the site. Soils fall within Wetness Class I and consist mainly of medium sandy loam topsoils and subsoils to depth (soil type 2). The presence of patches of stonier, lower quality land creates a slight soil pattern limitation that is the overriding restriction on ALC grade.

SUBGRADE 3A

The soils in this subgrade occur mainly in the western half of the site and consist of stoneless medium sandy loam topsoils over sand and gravel (soil type 1).

The irrigation of these soils is likely to benefit only a few of the crops that could be grown. For this reason the land is restricted to subgrade 3a.

SUBGRADE 3B

Land in this subgrade occurs in small patches across the site. Soils are similar to adjoining 3a land, except for a high topsoil stone content which is the overriding restriction on ALC grade.

NON AGRICULTURAL

This includes the farm woodland at Bellflask Wood and a soil storage area adjacent to Bellflask House.

URBAN

This consists of sand and gravel excavation sites.

OPEN WATER

This is the River Ure which cuts through the site.

Resource Planning Group
Leeds RO
May 1990

4. SOIL PROFILE DESCRIPTIONS

SOIL TYPE 1: LIGHT TEXTURED TOPSOILS OVER SAND AND GRAVEL DEPOSITS

Horizon	Depth	Description
1	0-30	Dark brown (10YR 3/3) fine sandy loam; unmottled; stoneless; slightly moist; weakly developed medium and fine subangular blocky structure; medium packing density; very porous; moderately weak soil strength; non sticky; non plastic; abundant very fine fibrous roots between 0-5 cm with many fine fibrous below; calcareous sharp smooth boundary.
2	30-50	Light yellowish brown (10YR 6/4) medium sand; very stony containing abundant medium and large sandstones and limestones.
3	50-95	Light yellowish brown (10YR 6/4) coarse sand; stoneless; loose.
4	95+	Gravel composed of medium to large stones; extremely stony.

SOIL TYPE 2: LIGHT TEXTURED ALMOST STONELESS TOPSOILS AND SUBSOILS

Horizon	Depth	Description
1	0-32	Very dark greyish brown (10YR 3/2) fine sandy clay loam; unmottled; stoneless; moist; moderately developed coarse angular blocky structure; high packing density; moderately porous; moderate to very firm soil strength; slightly sticky; slightly plastic; many very fine fibrous roots; very slightly calcareous; gradual wavy boundary.
2	32-100	Dark brown (10YR 3/3) fine sandy loam in field state becoming dark yellowish brown when moistened; unmottled; stoneless; slightly moist; moderately developed medium prismatic structure; medium packing density; very porous; moderately weak soil strength; slightly sticky; slightly plastic; few fine fibrous roots; non calcareous.

MAPS