

**NORTHUMBERLAND MINERALS
LOCAL PLAN (PROPOSED
EXTENSION TO PLENMELLER
SAND AND GRAVEL SITE)**

**Agricultural Land Classification (ALC)
Map and Report**

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NORTHUMBERLAND MINERALS LOCAL PLAN

AGRICULTURAL LAND CLASSIFICATION OF PROPOSED EXTENSION TO PLENMELLER SAND AND GRAVEL SITE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 18.1 ha of land at Plenmeller, near Haltwhistle.
2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the proposal to include this land in the Northumberland Minerals Local Plan. This ALC survey supersedes any previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey the land on the site was under ley grass (in the centre and east) or in arable use (in the west). A small block of woodland occurs in the centre of the site.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:5,000. It is accurate at this scale but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1			
2			
3a	2.9	16.2	16.0
3b	15.0	83.8	82.9
4			
5			
Agricultural land not surveyed		N/A	
Other land	0.2	N/A	1.1
Total surveyed area	17.9	100	-
Total site area	18.1	-	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of nineteen borings and two soil pits were described.

8. Subgrade 3a, good quality agricultural land, occurs in the south-east and south-west. Generally the soils are well drained, with slightly to moderately stony, light to medium-textured topsoils and subsoils. The ALC grade of this land is limited by the overall climate of the area and, in places, by topsoil stoniness.

9. Subgrade 3b, moderate quality land, accounts for the remainder of the agricultural land on the site. The soils are generally well drained, consisting of moderately stony, light-textured topsoils and subsoils. Topsoil stoniness limits this land to Subgrade 3b. In the south-east and south-west the soils are moderately well to imperfectly drained, with medium-textured topsoils and upper subsoils overlying gleyed, medium to heavy-textured lower subsoils. In this case soil wetness is the grade-limiting factor.

10. Other land on this site occurs in the centre and consists of a small block of mixed woodland.

FACTORS INFLUENCING ALC GRADE

Climate

11. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5 km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	NY 723 632
Altitude	m, AOD	115
Accumulated Temperature	day°C (Jan-June)	1243
Average Annual Rainfall	mm	933
Field Capacity Days	days	231
Moisture Deficit, Wheat	mm	65
Moisture Deficit, Potatoes	mm	44
Overall climatic grade	N/A	Subgrade 3a

13. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

14. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

15. The combination of rainfall and temperature at this site means that there is a climatic limitation to Subgrade 3a.

Site

16. The land on the site is generally level to moderately sloping (0-6°) with variable aspect. Only in a small area in the far south does strongly sloping (9°) land occur, and this is limited by its gradient to Subgrade 3b. Neither microrelief nor flood risk are grade-limiting factors on this site.

Geology and soils

17. The site is underlain by Upper Carboniferous Limestone (BGS, Sheet 19) over which lie river terrace deposits.

18. The soils on the site have been mapped as undifferentiated alluvial soils (Soils of the Hexham District) and, at a less detailed scale, as belonging to the Alun association (Soils of England and Wales, Sheet 1).

AGRICULTURAL LAND CLASSIFICATION

19. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1.

Subgrade 3a

20. Land in this subgrade occurs in the south-east and south-west of the site. The soils are well drained (Wetness Class I) and light to medium-textured, consisting of medium sandy loam or medium clay loam topsoils and subsoils. Both topsoils and subsoils are slightly to moderately stony, with 8% to 22% hard stones and sandstones (5% to 11% greater than 2 cm in size) in the topsoil and 10% to 22% hard stones and sandstones in the subsoil. Some profiles were impenetrable by auger below 45 cm depth. The ALC grade of this land is limited by the overall climate of the area, and, in places, by topsoil stoniness and topsoil workability restrictions.

Subgrade 3b

21. The remainder of the agricultural land on the site falls in Subgrade 3b, moderate quality land. The soils are generally well drained (Wetness Class I) and in most cases consist of medium sandy loam topsoils and subsoils. Most profiles became impenetrable by auger at between 40 cm and 70 cm depth. The topsoils are moderately stony, containing 18% to 30% hard stones and sandstones (15% to 25% greater than 2 cm in size), while the subsoils are slightly to moderately stony, containing between 10% and 30% sandstones and hard stones. Topsoil stoniness is the grade-limiting factor for these areas. In some small pockets in the south-east and south-west of the site the soils are only moderately well or imperfectly drained, falling in Wetness Classes II and III. Medium clay loam topsoils and upper subsoils overlie gleyed medium clay loam, medium silty clay loam or heavy clay loam lower subsoils. In this case soil wetness is the grade-limiting factor.

Other land

22. Other, non-agricultural, land on this site occurs in the centre and consists of a block of mixed woodland.

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SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No. 19, Hexham (1:50,000 scale)*
BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.* MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 1, Soils of Northern England, 1:250,000 scale.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England*
SSEW: Harpenden

Soil Survey of England and Wales (1977) *Soils of the Hexham District.*
SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.