Ansty Garden Community

Environmental Statement

Volume 4

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APPENDIX F: AGRICULTURE AND SOILS

temple

Appendix F1: Ansty Garden Community Agricultural Land Classification

Appendix F1

Agricultural Land Classification

Ansty Garden Community

AGRICULTURAL LAND CLASSIFICATION REPORT

1.1 This report assesses the Agricultural Land Classification (ALC) grading of 76.7Ha, of agricultural land at Ansty, Haywards Heath, West Sussex.

1.2 The limiting factor is found to be soil wetness which is a combination of the soils found on site and the climatic regime.

1.3 The land is graded as follows:

Grade 1:	1.6Ha	2.1%
Grade 2:	6.6Ha	8.6%
Grade 3a:	5Ha	6.5%
Grade 3b:	63.5Ha	82.8%

2 **Methodology**

2.1 The report's author is James Fulton BSc (Hons) MRICS FAAV who has worked as a chartered surveyor, agricultural valuer, and agricultural consultant since 2004, has a degree in agriculture which included modules on soils and over 10 years' experience in advising farmers on soil structure and cultivation methods and in producing agricultural land classification reports.

2.2 The report is based on site visits conducted by two surveyors on the 25th of October and two surveyors on the 9th November 2022. During the site visit conditions were overcast and showery. During the inspection 4 trial pits were dug to a depth of 120cm. In addition to the trial pits an auger was used to take approximately one sample per hectare on the proposed development site to a depth of 120cm with smaller trial pits at some of these locations to confirm soil structure where it was not clear from the auger samples. A plan of auger points can be found at **Plan KCC3307/01**. The trial pit locations were selected as they were representative of the soils found on site. Where subsoils were inspected with a spade, descriptions of structure have been recorded based on the soil survey field handbook[1]; where an augur has been used the structure is described as good, moderate or poor based on figure 9,10 and 11 in the MAFF[2] (1988) guidance. When assessing the depth of different soil horizons measurements have been assessed to the nearest 5cm unless it is considered that this would impact land grade.

[1] Hodgson, JM (1997) Soil Survey Field Handbook
[2] MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications

2.3 During the sampling conditions were generally good with the subsoil state described as moist allowing samples to be removed and examined easily.

2.4 The site extends 76.7ha made up of 24 fields of grass and arable land. The altitude of the sample points ranges from 44-74m AOD and is considered to be flat to gently sloping.

2.5 Further information has been obtained from the MAGIC website, the Soil Survey of England and Wales, the British Geological Survey, the Meteorological Office and 1:250,000 series Agricultural Land Classification maps.

2.6 The collected information has been judged against the Ministry of Agriculture Fisheries and Food Agricultural Land Classification of England and Wales revised guidelines and criteria for grading the quality of agricultural land. The contents and format of the report is further informed by the BSSS guidance (2022)[3].

2.7 The principal factors influencing agricultural production are climate, site and soil and the interaction between them MAFF (1988)[4] & Natural England (2012)[5].

3 Published Information

3.1 The British Geological Survey 1:50,000 scale map shows the bedrock geology to vary across the site with areas to the north shown to be Cuckfield stone bed – Sandstone, calcareous; and Lower Grinstead Clay – Mudstone; while the south of the site is shown to be Upper Tunbridge Wells Sand – Sandstone and siltstone, interbedded; and Ardingly Sandstone Member – Sandstone. There are no superficial deposits recorded.

3.2 The national soils map shows the site to be Curtisden Association – Silty Soils over Siltstone with slowly permeable subsoils and slight seasonal waterlogging with a small area to the west identified as Wickham 5 Association – Slowly permeable, seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils locally reddish.

3.3 The 1:250,000 series Agricultural Land Classification maps show the north and south of the site to be Grade 3 with a strip though the middle of the site shown to be grade 4. These plans are of strictly limited value, using an out-of-date methodology at a very small scale

[3] British Society of Soil Science (2022) – Guidance Document 1 – Working with Soil Guidance Note on Assessing Agricultural Land Classification Surveys in England and Wales
[4] MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications
[5] Natural England (2012) - *Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land*, Second Edition

(low detail) level of survey. Further information on the limits of their use can be found in TIN049.

4 Climate

4.1 Climate has a major, and in places overriding, influence on land quality affecting both the range of potential agricultural uses and the cost and level of production.

4.2 There is published agro-climatic data for England and Wales provided by the Meteorological Office, such data for the subject site is listed in the table below.

*Table 1: Agro-Climatic Data – Full details can be found at **Annex 1**.*

Grid Reference	529752 123310
Altitude (ALT)	61
Average Annual Rainfall (AAR)	808
Accumulated Temperature - Jan to June (ATO)	1462
Duration of Field Capacity (FCD)	172
Moisture Deficit Wheat	105
Moisture Deficit Potatoes	98

4.3 The main parameters used in assessing the climatic limitation are average annual rainfall (AAR), as a measure of overall wetness; and accumulated temperature (ATO), as a measure of the relative warmth of a locality.

4.4 The AAR and ATO provide no climatic limitation to grade.

4.5 The site is shown to be in flood zone 1 – areas with a less than 1 in 1000 annual chance of flooding. There was no evidence of flooding seen during the site visit and it is considered that flooding will not result in a limitation to land grade.

5 Stoniness

5.1 While there were some stones found on site there were not enough of them to impact on land grading at any sample point.

6 Gradient

6.1 The site is flat to gently sloping and so gradient is not a limiting factor to land grade.

7 Soils

7.1 With the exception of the two most north easterly sample points the soils found on site follow the expectations set by the national soils map. Full information on the sample points along with trial pit descriptions and photographs can be found at **Annex 2**. The lab tests can be found at **Annex 3**.

7.2 The two sample points in the northeast corner are fine sandy loam topsoil over moderately structured fine sandy loam subsoils with no slowly permeable layer or gleying resulting in an area with no limitation to land grade.

7.3 The rest of the site was found to be brown or dark greyish brown medium clay loam (with high silt content), heavy silty clay loam or silty clay topsoil over clay or silty clay loam subsoils. The subsoils were generally poorly structured with trial pits identifying weak coarse subangular blocky, weak coarse angular blocky, coarse angular blocky and massive structures and virtually no biopores identified indicating a slowly permeable layer. These poorly structured subsoils were pale or grey in colour with ochreous mottles indicating a gleyed horizon.

7.4 At a small number of sample points there was a moderately structured upper subsoil and the gleyed and slowly permeable layer were not identifiable until the lower subsoil at between 50 and 70cm.

8 Interactive Factors

8.1 **Wetness**. An assessment of the wetness class of each sample point was made based on the flow chart at Figure 6 in the MAFF guidance. The wetness class and topsoil texture were then assessed against Table 6 of the MAFF guidance to determine the ALC grade according to wetness. The wetness assessment can be found at **Annex 4**.

8.2 At most sample points a slowly permeable layer (SPL) and gleying could be identified at between 25 and 35cm which with 172 field capacity days results in wetness class IV

8.3 Table 6 with wetness class IV, 151 to 175 FCD and medium clay loam, heavy silty clay loam or silty clay topsoil results in a grade 3b limitation.

8.4 Where the SPL and gleyed horizon do not occur until 50cm the wetness class is calculated to be III and where the SPL is at 70cm the wetness class is II.

8.5 Wetness class III, 151 to 175 FCD and medium clay loam results in a grade 3a limitation

8.6 Wetness class II, 151 to 175 FCD and medium clay loam results in a grade 2 limitation

8.7 **Droughtiness**. Droughtiness limits are defined in terms of moisture balance for wheat and potatoes using the formula:

MB (Wheat) = AP (Wheat) - MD (Wheat)

and

MB (Potatoes) = AP (Potatoes) - MD (Potatoes)

Where:

MB = Moisture Balance

AP = Crop Adjusted available water capacity

MD = Moisture deficit

8.8 Moisture deficit for wheat and potatoes can be found in the agro-climatic data and are as follows:

MD (Wheat) = 105

MD (Potatoes) = 98

8.9 Crop adjusted available water is calculated by reference to the total available water and easily available water which is calculated by reference to soil texture and structural condition and the stone content. The moisture balance was calculated for all of the locations and can be found at **Annex 4**.

8.10 A droughtiness assessment was completed for the trial pit locations which showed that droughtiness is not the most limiting factor.

9 Agricultural Land Classification

9.1 The Agricultural Land Classification provides a framework for classifying land according to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principle ways: they may affect the range of crops that can be grown, the level of yield, the consistency of yield and the cost of obtaining it.

9.2 The principal physical factors influencing agricultural production are climate, site and soil and the interactions between them which together form the basis for classifying land into one of 5 grades; grade 1 being of excellent quality and grade 5 being land of very poor quality. Grade 3 land, which constitutes approximately half of all agricultural land in the United Kingdom is divided into 2 subgrades – 3a and 3b. A full definition of all of the grades can be found at **Annex 5**.

9.3 This assessment sets out that the majority of the site is limited by wetness and that there is no limiting factor for the small area of fine sandy loam in the northeast corner of the site..

9.4 The breakdown of land by classification is:

Grade 1:	1.6Ha	2.1%
Grade 2:	6.6Ha	8.6%
Grade 3a:	5Ha	6.5%
Grade 3b:	63.5Ha	82.8%

9.5 A plan of the land grading can be found at **Plan KCC3307/02**.

Annex 1

Agri-Climatic Data

Site Details: Potato Lane, Ansty

Grid reference (centre of site): 529752 123310

Altitude: Mean 60.86m AOD

Climatic data from surrounding locations:

Grid Reference	ALT	AAR	LR_AAR	ASR	ATO	ATS	MDW	MDP	FCD
52501200	12	773	0.4	360	1521	2520	113	108	166
52501250	99	817	0.2	370	1419	2407	102	93	173
53001200	27	780	0.3	370	1502	2501	109	104	169
53001250	84	821	0.3	375	1435	2426	102	94	174

Altitude Adjusted

Grid Reference	AAR	ATO	FCD	MDW	MDP	Proximity Adjustment
52501200	792.54	1465.30	168.83	106.62	99.56	5.93%
52501250	809.37	1462.48	171.90	106.45	98.90	7.82%
53001200	790.16	1463.40	170.47	104.81	98.45	18.06%
53001250	814.06	1461.38	173.00	104.86	97.79	68.19%

Annex 2a

Survey Data: Auger Sample Assessment

		Topsoil					Subsoil 1						Subsoil 2						Subsoil 3	
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture
1	61	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
2	63	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
3	63	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
4	64	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
5	62	0-30	fSL	10YR 4/2			30-60	fSL	5YR 4/2	5%		Moderate	60-100	fSL	10YR 5/4			Moderate	100	IMP
6	58	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
7	61	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
8	60	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
9	61	0-25	MCL	10YR 4/2			25-120	ZCL	10YR 6/2		MOB	Poor								
10	60	0-30	fSL	10YR 4/2			30-70	fSL	5YR 4/2	15%		MSAB	70-100	fSL	10YR 5/4			MAB	100	IMP
11	57	0-25	MCL	10YR 4/2	5%		25-120	ZCL	10YR 6/2		MOB	Poor								
12	53	0-25	MCL	10YR 4/2	5%		25-120	ZCL	10YR 6/2		MOB	Poor								
13	56	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
14	56	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
15	56	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
16	55	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
17	61	0-30	MCL	10YR 5/2			30-70	ZCL	2.5Y 5/2		CO	WCAB	70-120	ZC	2.5Y 7/1		MOB	CAB		
18	57	0-25	MCL	10YR 4/2	5%		25-120	ZCL	10YR 6/2		MOB	Poor								
19	50	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
20	49	0-30	MCL	10YR 4/3			30-60	ZCL	2.5Y 6/2		MOB	Poor	60-120	ZCL	10YR 4/2		CO	Poor		
21	52	0-30	MCL	10YR 4/4			30-50	ZCL	10YR 4/4			Moderate	50-120	ZCL	10YR 5/3		MOB	Poor		
22	60	0-30	MCL	10YR 4/4			30-60	ZCL	10YR 4/4			Moderate	60-120	ZCL	10YR 5/3		MOB	Poor		
23	61	0-30	MCL	10YR 4/4			30-60	ZCL	10YR 4/4			Moderate	60-120	ZCL	10YR 5/3		MOB	Poor		
24	68	0-25	MCL	10YR 4/4	10%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
25	64	0-25	MCL	10YR 4/4	10%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
26	65	0-25	MCL	10YR 4/4	10%		25-60	ZCL	10YR 6/2		FOB	Poor	60-120	ZCL	2.5Y 6/3		FO	Poor		
27	65	0-25	MCL	10YR 4/2			25-45	ZCL	2.5Y 5/1		CO	Poor	45	IMP						
28	60	0-25	MCL	10YR 4/2			25-45	ZCL	2.5Y 5/1		CO	Poor	45	IMP						
29	56	0-30	MCL	10YR 4/2	10%		30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 6/1		MO	Poor		
30	73	0-25	MCL	10YR 4/4	10%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
31	72	0-25	MCL	10YR 4/4	10%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
32	67	0-25	MCL	10YR 4/2	5%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
33	69	0-25	MCL	10YR 4/2	5%		25-70	ZCL	10YR 6/2		FOB	Poor	70-120	ZCL	2.5Y 6/3		FO	Poor		
34	67	0-25	MCL	10YR 4/2			25-45	ZCL	2.5Y 5/1		CO	Poor	45	IMP						
35	64	0-25	MCL	10YR 4/2			25-45	ZCL	2.5Y 5/1		CO	Poor	45	IMP						
36	62	0-30	MCL	10YR 4/2	10%		30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 6/1		MO	Poor		
37	63	0-30	MCL	10YR 4/2	10%		30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 6/1		MO	Poor		
38	62	0-25	MCL	10YR 4/2	5%		25-70	ZCL	10YR 5/2		CO	Poor	70-120	ZCL	2.5Y 6/1		FO	Poor		
39	60	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	WCSAB	50-100	ZCL	5GY 7/1	2%	MO	WCAB	100	IMP
40	74	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 7/1		MO	Poor		
41	70	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 7/1		MO	Poor		
42	66	0-30	MCL	10YR 4/3	10%		30-50	ZCL	10YR 4/4			Moderate	50	IMP						
43	64	0-30	MCL	10YR 4/3	10%		30-50	ZCL	10YR 4/4			Moderate	50	IMP						
44	62	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-80	ZCL	2.5Y 7/1		MO	Poor	80	IMP
45	61	0-30	MCL	10YR 4/2			30-60	ZCL	2.5Y 5/2		CO	Poor	60-120	ZCL	2.5Y 7/1		MO	Poor		
46	74	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		MO	WCAB	50-120	Z	5GY 7/1		MO	Poor		
47	71	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 7/1		MO	Poor		
48	70	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-80	ZCL	2.5Y 7/1		MO	Poor	80	IMP
49	67	0-30	MCL	10YR 4/2			30-50	ZCL	2.5Y 5/2		CO	Poor	50-120	ZCL	2.5Y 7/1		MO	Poor		
50	65	0-35	MCL	10YR 4/3	10%		35-70	ZCL	10YR 4/4	15%		Moderate	70-120	ZCL	10YR 5/2		CO	Poor		
51	63	0-35	MCL	10YR 4/3	10%		35-70	ZCL	10YR 4/4	15%		Moderate	70-120	ZCL	10YR 5/2		CO	Poor		

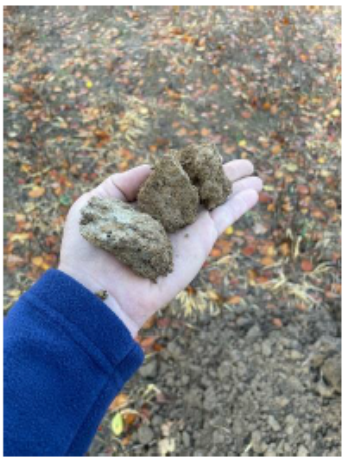
		Topsoil					Subsoil 1						Subsoil 2						Subsoil 3	
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture
52	61	0-35	MCL	10YR 4/3	10%		35-70	ZCL	10YR 4/4	15%		Moderate	70-120	ZCL	10YR 5/2		CO	Poor		
53	60	0-35	MCL	10YR 4/3			35-70	ZCL	10YR 4/4		COB	Moderate	70-120	ZCL	10YR 5/1		MO	Poor		
54	58	0-35	MCL	10YR 4/3			35-70	ZCL	10YR 4/4		COB	Moderate	70-120	ZCL	10YR 5/1		MO	Poor		
55	71	0-30	MCL	10YR 4/3			30-50	ZCL	10YR 5/3		MO	Poor	50	IMP						
56	65	0-35	MCL	10YR 4/3			35-90	ZCL	2.5Y 6/3		COB	Poor	90-120	ZCL	10YR 5/1		MO	Poor		
57	64	0-35	MCL	10YR 4/3			35-90	ZCL	2.5Y 6/3		COB	Poor	90-120	ZCL	10YR 5/1		MO	Poor		
58	62	0-30	MCL	10YR 4/3			30-45	ZCL	10YR 5/1		MO	Poor	45	IMP						
59	57	0-35	MCL	10YR 4/3	10%		35-70	ZCL	10YR 4/4	15%		Moderate	70-120	ZCL	10YR 5/2		CO	Poor		
60	44	0-35	MCL	10YR 4/3			35-70	ZCL	10YR 4/4		COB	Moderate	70-120	ZCL	10YR 5/2		MO	Poor		
61	60	0-30	HZCL	10YR 4/2		FO	30-50	ZCL	10YR 5/3		FOB	Poor	50-70	C	2.5Y 5/3		CO	Poor	70	IMP
62	58	0-30	HZCL	10YR 4/2		FO	30-50	ZCL	10YR 5/3		FOB	Poor	50-70	C	2.5Y 5/3		CO	Poor	70	IMP
63	55	0-30	HZCL	10YR 4/2		FO	30-60	ZCL	10YR 4/3		FOB	Poor	60-120	C	2.5Y 5/3		CO	Poor		
64	54	0-30	HZCL	10YR 5/2			30-120	C	2.5Y 7/2		CO	Massive								
65	53	0-25	HZCL	10YR 4/2		FO	25-60	ZCL	2.5Y 5/3		MOB	Poor	60-120	C	2.5Y 6/3		CO	Poor		
66	51	0-30	HZCL	10YR 4/2		FO	30-60	ZCL	10YR 4/3		FOB	Poor	60-120	C	2.5Y 6/3		CO	Poor		
67	52	0-30	ZC	10YR 3/3		FO	25-60	C	2.5Y 5/1		CO	Poor	60-120	C	2.5Y 6/1		MOB	Poor		
68	51	0-30	ZC	10YR 3/3		FO	25-60	C	2.5Y 5/1		CO	Poor	60-120	C	2.5Y 6/1		MOB	Poor		
69	53	0-30	HZCL	10YR 4/2		FO	30-120	C	10YR 6/2		FOB	Poor								
70	50	0-30	HZCL	10YR 4/2		FO	30-120	C	10YR 6/2		FOB	Poor								
71	62	0-30	HZCL	10YR 4/2		FO	30-120	C	10YR 6/1		FOB	Poor								
72	62	0-30	ZC	10YR 4/2		FO	30-60	C	10YR 5/2		CO	Poor	60-120	C	2.5Y 6/3		CO	Poor		
73	62	0-25	ZC	10YR 4/2		FO	25-60	C	2.5Y 5/1		CO	Poor	60-120	C	2.5Y 6/1		MOB	Poor		
74	59	0-25	HZCL	10YR 4/2		FO	25-50	C	2.5Y 5/1		CO	Poor	50	IMP						
75	60	0-30	HZCL	10YR 4/2		FO	30-60	ZCL	10YR 6/2		FOB	Poor	60-120	C	2.5Y 5/1		CO	Poor		
76	62	0-25	HZCL	10YR 4/2		FO	25-50	C	2.5Y 5/1		CO	Poor	50-120	C	2.5Y 6/1		MOB	Poor		
	60.86																			

Annex 2b

Trial Pit Descriptions

Sample Point No. 10		
Horizon 1	0-30cm Dark greyish brown (10YR 4/2) fine sandy loam	
Horizon 2	30-70 Dark reddish grey (5YR 4/2) fine sandy loam with a medium subangular blocky structure, firm consistence, few ochreous mottles and 15% large, square hard stones.	
Horizon 3	70-100 Yellowish brown (10YR 5/4) fine sandy loam with a medium subangular blocky structure and a firm consistence.	
Horizon 4	100 – Impenetrable due to rock	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	None	
Gleying	None	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	49.98	
MB potatoes	27.93	
Droughtiness Limitation	1	

Sample Point No. 17		
Horizon 1	0-30cm Greyish brown (10YR 5/2) medium clay loam	
Horizon 2	30-70 Greyish brown (2.5Y 5/2) silty clay loam with a weak coarse angular blocky structure, firm consistence, common ochreous mottles and <0.5% biopores >0.5mm	
Horizon 3	70-120 Light grey (2.5Y 7/1) silty clay with a coarse angular blocky structure, many ochreous mottles and black ferri-manganiferous concentrations and no bipores	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	30cm	
Gleying	30cm	
Wetness Class	IV	
Wetness limitation	3b	
MB Wheat	21.98	
MB potatoes	3.93	
Droughtiness Limitation	2	

Sample Point No. 39		
Horizon 1	0-30cm Dark greyish brown (10YR 4/2) medium clay loam	
Horizon 2	30-50 Greyish brown (2.5Y 5/2) silty clay loam with a weak coarse subangular blocky structure, firm consistence, common ochreous mottles and <0.5% biopores >0.5mm	
Horizon 3	50-100 Light greenish grey (5GY 7/1) silty clay loam with a weak coarse angular blocky structure, a firm consistence, many ochreous mottles and <0.5% biopores >0.5mm	
Horizon 4	100 – Impenetrable due to rock	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	30	
Gleying	30	
Wetness Class	IV	
Wetness limitation	3b	
MB Wheat	7.98	
MB potatoes	3.93	
Droughtiness Limitation	2	

Sample Point No. 64		
Horizon 1	0-30cm Greyish brown (10YR 5/2) heavy silty clay loam	
Horizon 2	30-120 Light grey (2.5Y 7/2) clay with common ochreous mottles. Horizon was very wet and appeared to be a massive structure with firm consistence and no biopores evident.	
Pictures		
Horizon 1 	Horizon 1 	Horizon 2 
Slowly permeable layer	30cm	
Gleying	30cm	
Wetness Class	IV	
Wetness limitation	3b	
MB Wheat	21.98	
MB potatoes	3.93	
Droughtiness Limitation	2	

Annex 3

Laboratory Analysis

ANALYTICAL REPORT

Report Number	43505-22	W250	AMET PROPERTY
Date Received	07-NOV-2022		HENWICK BARN
Date Reported	15-NOV-2022		BULWICK
Project	SOIL		CORBY
Reference	KERNON		NORTHANTS
Order Number			NN17 3DU

Laboratory Reference		SOIL590105	SOIL590106	SOIL590107	SOIL590108	SOIL590109	SOIL590110				
Sample Reference		ANSTY 10	ANSTY 17	ANSTY 39	ANSTY 39-SS2	ANSTY 46	ANSTY 64				
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Coarse Sand 2.00-0.63mm	% w/w	4	1	7	1	5	4				
Medium Sand 0.63-0.212mm	% w/w	1	3	3	1	3	2				
Fine Sand 0.212-0.063mm	% w/w	52	23	19	11	19	6				
Silt 0.063-0.002mm	% w/w	27	50	51	67	50	58				
Clay <0.002mm	% w/w	16	23	20	20	23	30				
Textural Class **		fSL	MCL	MCL	MZCL	MCL	HZCL				

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control

** Please see the attached document for the definition of textural classes.

Reported by

Myles Nicholson

Natural Resource Management, a trading division of Cawood Scientific Ltd.
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS
Tel: 01344 886338
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Technical Information

ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

- vf Very Fine (more than 2/3's of sand less than 0.106 mm)
- f Fine (more than 2/3's of sand less than 0.212 mm)
- c Coarse (more than 1/3 of sand greater than 0.6 mm)
- m Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

- M medium (less than 27% clay)
- H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

Annex 4
Wetness and Droughtiness Assessment

	Wetness Assesment			Grade	Droughtiness Assessment		Grade	Grade by
Sample No	Depth to SPL	Gley	Wetness Class	According to Wetness	MB Wheat	MB Potato	According to Droughtiness	most limiting factor
1	25	<40	IV	3b				3b
2	25	<40	IV	3b				3b
3	25	<40	IV	3b				3b
4	25	<40	IV	3b				3b
5			I	1	48.98	27.93	1	1
6	25	<40	IV	3b				3b
7	25	<40	IV	3b				3b
8	25	<40	IV	3b				3b
9	25	<40	IV	3b				3b
10			I	1	49.98	27.93	1	1
11	25	<40	IV	3b				3b
12	25	<40	IV	3b				3b
13	30	<40	IV	3b				3b
14	30	<40	IV	3b				3b
15	30	<40	IV	3b				3b
16	30	<40	IV	3b				3b
17	30	<40	IV	3b	21.98	3.93	2	3b
18	25	<40	IV	3b				3b
19	30	<40	IV	3b				3b
20	30	<40	IV	3b				3b
21	50	40-70	III	3a				3a
22	60	40-70	III	3a				3a
23	60	40-70	III	3a				3a
24	25	<40	IV	3b				3b
25	25	<40	IV	3b				3b
26	25	<40	IV	3b				3b
27	25	<40	IV	3b				3b
28	25	<40	IV	3b				3b
29	30	<40	IV	3b				3b
30	25	<40	IV	3b				3b
31	25	<40	IV	3b				3b
32	25	<40	IV	3b				3b
33	25	<40	IV	3b				3b
34	25	<40	IV	3b				3b
35	25	<40	IV	3b				3b
36	30	<40	IV	3b				3b
37	30	<40	IV	3b				3b
38	25	<40	IV	3b				3b
39	30	<40	IV	3b	7.98	3.93	2	3b
40	30	<40	IV	3b				3b
41	30	<40	IV	3b				3b
42	50	40-70	III	3a				3a
43	50	40-70	III	3a				3a
44	30	<40	IV	3b				3b
45	30	<40	IV	3b				3b
46	30	<40	IV	3b				3b
47	30	<40	IV	3b				3b

	Wetness Assesment			Grade	Droughtiness Assessment		Grade	Grade by
Sample No	Depth to SPL	Gley	Wetness Class	According to Wetness	MB Wheat	MB Potato	According to Droughtiness	most limiting factor
48	30	<40	IV	3b				3b
49	30	<40	IV	3b				3b
50	70	40-70	II	2				2
51	70	40-70	II	2				2
52	70	40-70	II	2				2
53	70	40-70	II	2				2
54	70	40-70	II	2				2
55	30	<40	IV	3b				3b
56	35	<40	IV	3b				3b
57	35	<40	IV	3b				3b
58	30	<40	IV	3b				3b
59	70	40-70	II	2				2
60	70	40-70	II	2				2
61	30	<40	IV	3b				3b
62	30	<40	IV	3b				3b
63	30	<40	IV	3b				3b
64	30	<40	IV	3b	7.98	3.93	2	3b
65	25	<40	IV	3b				3b
66	30	<40	IV	3b				3b
67	30	<40	IV	3b				3b
68	30	<40	IV	3b				3b
69	30	<40	IV	3b				3b
70	30	<40	IV	3b				3b
71	30	<40	IV	3b				3b
72	30	<40	IV	3b				3b
73	25	<40	IV	3b				3b
74	25	<40	IV	3b				3b
75	30	<40	IV	3b				3b
76	25	<40	IV	3b				3b

Annex 5

Description of ALC Grades

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 and horticultural crops can usually be grown but on some land in the 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.

Grade 3 - good to moderate quality agricultural land Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Appendix F2

Agricultural land Classification

Beechy Bottom Parkland Reserve

Appendix F2: Beechy Bottom Parkland Reserve Agricultural Land Classificiation

AGRICULTURAL LAND CLASSIFICATION
BEECHY BOTTOM PARKLAND RESERVE

CLIENT: KERNON COUNTRYSIDE CONSULTANTS
PROJECT: BEECHY BOTTOM PARKLAND RESREVE
DATE: 11TH OCTOBER 2023 – ISSUE 2
ISSUED BY: JAMES FULTON MRICS FAAV

CONTENTS

1. EXECUTIVE SUMMARY

1.1 This report assesses the Agricultural Land Classification (ALC) grading of 54.3 hectares of agricultural land to the north of Ansty and west of Cuckfield.

1.2 The limiting factor found to be soil wetness, a combination of the climatic regime, soil water regime and texture of the top 25cm of the soil on the majority of the site and droughtiness on some small areas with a sandy or shallow subsoil.

1.3 The land is graded as follows:

Grade 2:	3.6 Ha
Grade 3a:	14.5 Ha
Grade 3b:	14.5 Ha
Non-Agricultural:	6.5 Ha

2. INTRODUCTION

2.1 Amet Property Ltd have been instructed by Kernon Countryside Consultants to produce an Agricultural Land Classification (ALC) report on a 54.3-hectare site on land to the north of Ansty and west of Cuckfeld.

2.2 The report's author is James Fulton BSc (Hons) MRICS FAAV who has worked as a chartered surveyor, agricultural valuer, and agricultural consultant since 2004, has a degree in agriculture which included modules on soils and over 10 years' experience in advising farmers on soil structure and cultivation methods and in producing agricultural land classification reports. Additional information on authors experience is found at ***appendix 1***.

2.3 The report is based on a site visit conducted by 2 assistant surveyors on the 13th May 2023 during which the conditions were sunny and dry. Soil conditions were moist throughout all horizons.

2.4 During the inspection 3 trial pits were dug to a depth of 120cm or as deep as possible if the sample point became impenetrable. In addition to the trial pits an auger was used to take approximately one sample per hectare on the proposed development site to a depth of 120cm with smaller trial pits at some of these locations to confirm soil structure and colour where it was not clear from the auger samples. A plan of auger points and trial pit locations can be found at ***appendix 2***. The trial pit locations were selected as they were representative of the soils found on site. Where subsoils were inspected with a spade, descriptions of structure have been recorded based on the soil survey field handbook[1]; where an auger has been used the structure is described as good, moderate or poor based on figure 9,10 and 11 in the MAFF[2] guidance. Colours are described using Munsell Colours[3].

2.5 The surveyed area extends to 54.3Ha of grassland land and sports pitches spread across 6 fields. The land is to the north of Ansty and west of Cuckfield, bounded on the east and west by woodland, to the north by Stapleford Road with farmland to the south.

2.6 Further information has been obtained from the MAGIC website, the Soil Survey of England and Wales, the British Geological Survey, the Meteorological Office and 1:250,000 series Agricultural Land Classification maps.

2.7 The collected information has been judged against the Ministry of Agriculture Fisheries and Food Agricultural Land Classification of England and Wales revised guidelines and criteria for grading the quality of agricultural land.

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[1] Hodgson, JM (1997) Soil Survey Field Handbook

[2] MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications

[3] Munsell Color (2009) Munsell Soil Color Charts

2.8 The principal factors influencing agricultural production are climate, site and soil and the interaction between them MAFF (1988) & Natural England (2012)[4].

2.9 The report is prepared and formatted considering the latest BSSS guidance[5].

3. PUBLISHED INFORMATION

3.1 The British Geological Survey 1:50,000 scale map shows the bedrock geology to be very mixed up Cuckfield Stone Bed – Sandstone, Calcareous, Ardingly Sandstone Member – Sandstone, Lower Grinstead Clay – Mudstone, Lower Tunbridge Wells Sand, and to the south Wadhurst Clay Formation – Mudstone. There are no superficial deposits recorded.

3.2 The soils to the north and southeast of the site are identified as being Curtisden Association – Silty soils over siltstone with slowly permeable subsoils and slight seasonal waterlogging. The land in the centre, south and west of the site is recorded as being Wickham 5 association – Slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils locally reddish.

3.3 The 1:250,000 series Agricultural Land Classification maps show the land to be primarily Grade 3 with a small area to the south that is Grade 4. These plans are of strictly limited value, using an out-of-date methodology at a very small scale (low detail) level of survey. Further information on the limits of their use can be found in TIN049.

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[4] MAFF (1988) - *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications

Natural England (2012) - *Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land*, Second Edition

[5] BSSS (2022) Working with Soil Guidance Note on Assessing Agricultural Land Classification Surveys in England and Wales

4. CLIMATE

4.1 Climate has a major, and in places overriding, influence on land quality affecting both the range of potential agricultural uses and the cost and level of production.

4.2 There is published agro-climatic data for England and Wales provided by the Meteorological Office, such data for the subject site is listed in the table below.

Agro-Climatic Data – Full details can be found at ***appendix 3***

Grid Reference	529393 124886
Altitude (ALT)	86
Average Annual Rainfall (AAR)	821
Accumulated Temperature - Jan to June (ATO)	1432
Duration of Field Capacity (FCD)	174
Moisture Deficit Wheat	102
Moisture Deficit Potatoes	94

4.3 The main parameters used in assessing the climatic limitation are average annual rainfall (AAR), as a measure of overall wetness; and accumulated temperature (ATO), as a measure of the relative warmth of a locality.

4.4 The AAR and ATO provide no climatic limitation to grade.

4.5 The site is shown to be in flood zone 1 – areas with a less than 1 in 1000 annual chance of flooding. There was no evidence of flooding seen during the site visit and it is considered that will not result in a limitation to land grade.

5. STONINESS

5.1 There were virtually no stones identified on site except for occasional subsoil locations. Stoniness is not considered to be a limiting factor to land grade.

6. GRADIENT AND MICRORELIEF

6.1 The site is gently sloping with no gradient or microrelief to affect land grade.

7. SOILS

7.1 The soils found on site largely follow the expectations set by the national soils map. Full information on the sample points along with trial pit descriptions and photographs and lab test results can be found at ***appendix 4***.

7.2 The topsoil across the site is consistently medium clay loam and occasionally heavy clay loam with a high silt proportion. Most sample points were light olive brown (2.5Y 5/3) or occasionally dark greyish brown (10YR 4/2).

7.3 Most subsoils are clay, occasionally clay loam with a high silt content. They are generally poorly structured, found to be weak coarse angular blocky where holes were dug and represent a gleyed slowly permeable horizon.

7.4 In a small number of locations, the subsoil was found to be loamy fine sand or fine sandy silty loam.

INTERACTIVE FACTORS

8. WETNESS

8.1 An assessment of the wetness class of each sample point was made based on the flow chart at Figure 6 in the MAFF guidance. The wetness class and topsoil texture were then assessed against Table 6 of the MAFF guidance to determine the ALC grade according to wetness. The wetness assessment can be found at ***appendix 4***.

8.2 Where the soil is gleyed at less than 40cm and the slowly permeable layer starts at 45cm or shallower the assessment results in wetness class IV. Where the slowly permeable layer starts at deeper than 45cm the assessment gives wetness class III.

8.3 Where the gleyed horizon starts at between 40cm and 70cm and the slowly permeable layer at 62cm or shallower the assessment results in wetness class II.

8.4 Where there is no slowly permeable layer the assessment gives wetness class I.

8.5 Table 6 with between 151 and 175FCD wetness class IV and MCL or HCL topsoil results in a limitation of Grade 3b.

8.6 Table 6 with between 151 and 175FCD wetness class III and MCL topsoil results in a limitation of Grade 3a.

8.7 Table 6 between 151 and 175FCD wetness class I and MCL topsoil results in no limitation.

9. DROUGHTINESS

9.1 Droughtiness limits are defined in terms of moisture balance for wheat and potatoes using the formula:

MB (Wheat) = AP (Wheat) - MD (Wheat)

and

MB (Potatoes) = AP (Potatoes) - MD (Potatoes)

Where:
MB = Moisture Balance
AP = Crop Adjusted available water capacity
MD = Moisture deficit

9.2 Moisture deficit for wheat and potatoes can be found in the agro-climatic data and are as follows:

MD (Wheat) = 102
MD (Potatoes) = 94

9.3 Crop adjusted available water is calculated by reference to the total available water and easily available water which is calculated by reference to soil texture and structural condition and the stone content.

9.4 The moisture balance was calculated for the trial pit locations and locations where droughtiness was considered to be a potential limiting factor. This assessment can be found at ***appendix 4***.

9.5 Droughtiness is the most limiting factor on the small number of locations where subsoils are shallow and/or sandy.

10. AGRICULTURAL LAND CLASSIFICATION

10.1 The Agricultural Land Classification provides a framework for classifying land according to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principle ways: they may affect the range of crops that can be grown, the level of yield, the consistency of yield and the cost of obtaining it.

10.2 The principle physical factors influencing agricultural production are climate, site and soil and the interactions between them which together form the basis for classifying land into one of 5 grades; grade 1 being of excellent quality and grade 5 being land of very poor quality. Grade 3 land, which constitutes approximately half of all agricultural land in the United Kingdom is divided into 2 subgrades – 3a and 3b. A full definition of all of the grades can be found at ***appendix 5.***

10.3 This assessment sets out that the site is limited largely by wetness and by droughtiness where soils are sandy and/or shallow.

10.4 The breakdown of land by classification is:

Grade 2:	3.6 Ha
Grade 3a:	14.5 Ha
Grade 3b:	14.5 Ha
Non-Agricultural:	6.5 Ha

10.5 A plan of the land grading can be found at ***appendix 6***.

Appendix 1 – Details of the Authors Experience

James Fulton

Professional Education and Qualifications

BSc (Hons) Agriculture, University of Nottingham (2004)

Member of the Royal Institution of Chartered Surveyors (MRICS) (2008)

Fellow of the Central Association of Agricultural Valuers (FAAV) (2009)

Relevant Work Experience

While working for a regional firm from 2004 until 2016 as part of my work I provided advice to farmers on soils, cultivation techniques and cropping and was involved in field trials which assessed cropping and cultivation techniques and how they impacted soil structure. At the same time I worked alongside an experienced surveyor who produced Agricultural Land Classification reports and I received training in field survey techniques and the ALC process to the point where I was able to produce ALC reports.

In 2016 I left my employer and formed Amet Property Ltd providing development consultancy and other rural practice surveying services. Of all of the services that we provide Agricultural Land Classification reports is the single largest area of work accounting for approximately 70% of all of my working time.

While I am not a member of the BSSS I meet the minimum competencies set out by the BSSS in Document 1 *Foundation skills in field soil investigation, description and interpretation* and Document 2 *Agricultural Land Classification (England and Wales)*

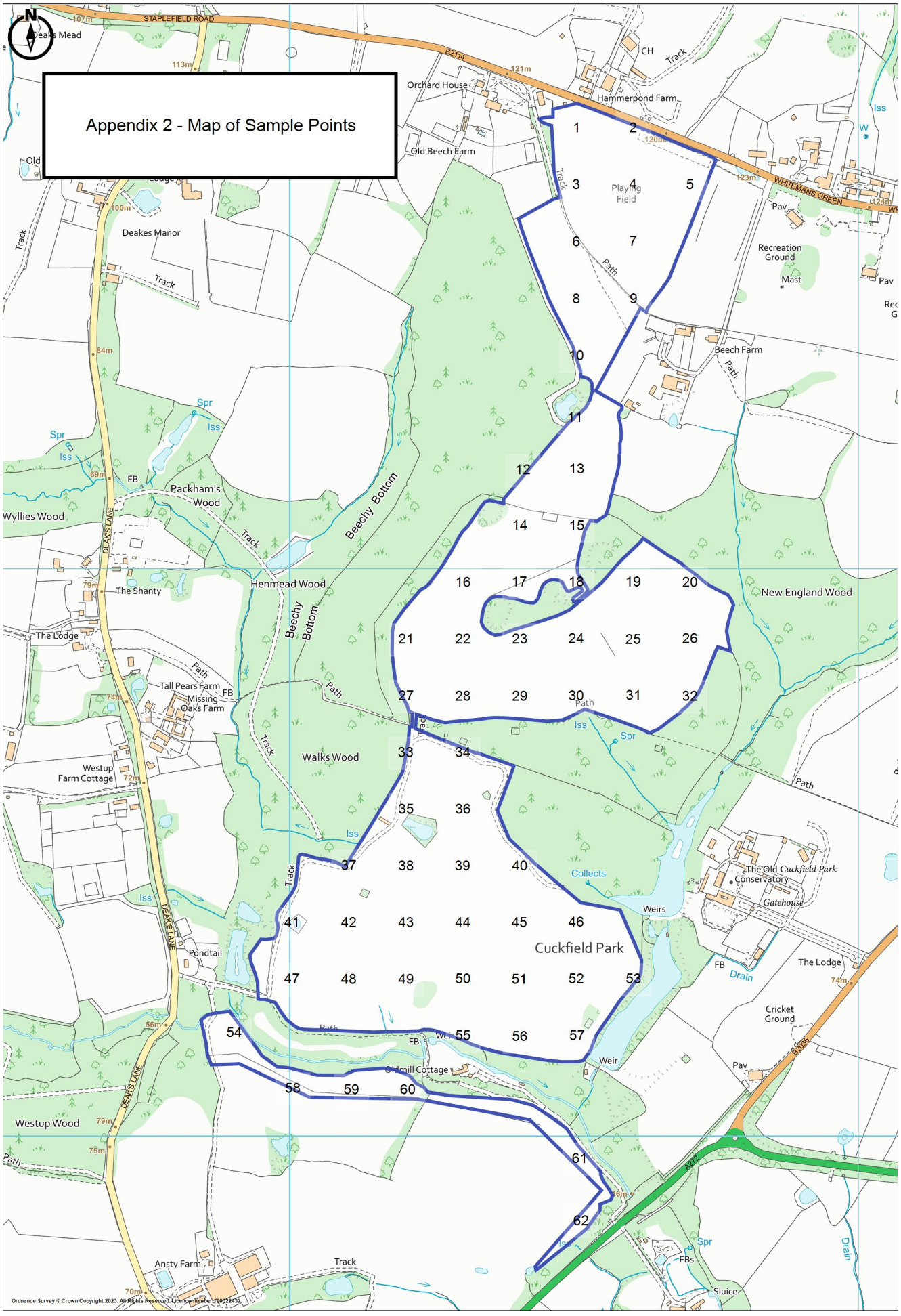
Professional Standards

As a member of the Royal Institution of Chartered Surveyors and Fellow of the Central Association of Agricultural Valuers I am bound by their professional standards and am only able to carry out work where I am suitably qualified and experienced to do so. Due to the formal and practical training that I have received I am able to competently produce Agricultural Land Classification reports.

Assistant Surveyors

All assistant surveyors have completed the BSSS working with soil course and have been trained to meet the requirements of BSSS Document 1 *Foundation skills in field soil investigation, description, and interpretation.*

Appendix 2 - Map of Sample Points



Promap
LANDMARK INFORMATION

Plotted Scale - **1:9000**. Paper Size - **A4**

Appendix 3 – Climatic Data

Site Details: Ansty

Grid reference (centre of site): 529393 124886

Altitude: Mean 86.34m AOD

Climatic data from surrounding locations:

Grid Reference	ALT	AAR	LR_AAR	ASR	ATO	ATS	MDW	MDP	FCD
52501200	12	773	0.4	360	1521	2520	113	108	166
52501250	99	817	0.2	370	1419	2407	102	93	173
53001200	27	780	0.3	370	1502	2501	109	104	169
53001250	84	821	0.3	375	1435	2426	102	94	174

Altitude Adjusted

Grid Reference	AAR	ATO	FCD	MDW	MDP	Proximity Adjustment
52501200	802.74	1436.25	170.30	103.29	95.15	0.85%
52501250	814.47	1433.43	172.63	103.48	94.96	1.89%
53001200	797.80	1434.35	171.57	101.67	94.28	1.51%
53001250	821.70	1432.33	174.10	101.71	93.62	95.76%

Appendix 4 - Sample Point Assessment

		Topsoil					Upper Subsoil						Lower Subsoil						Wetness Assesment			Grade	Droughtiness Assessment		Grade
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth to SPL	Gley	Wetness Class	limit by Wetness	MB Wheat	MB Potato	limit by Droughtiness
1	121	Non-Agricultural																							
2	121	Non-Agricultural																							
3	120	Non-Agricultural																							
4	121	Non-Agricultural																							
5	122	Non-Agricultural																							
6	118	0-35	MCL	10YR 5/3			35-120	MCL	2.5Y 6/2		CO	Poor							35	35	IV	3b			
7	121	Non-Agricultural																							
8	118	0-35	MCL	10YR 5/3			35-120	MCL	2.5Y 6/2		CO	Poor							35	35	IV	3b			
9	120	0-35	MCL	10YR 5/3			35-70	MCL	2.5Y 6/2		CO	Poor	60	IMP					35	35	IV	3b			
10	118	0-35	MCL	10YR 5/3			35-70	MCL	2.5Y 6/2		CO	Poor	60	IMP					35	35	IV	3b			
11	118	0-40	MCL	10YR 5/3			40-60	MCL	2.5Y 6/2		CO	Poor	60	IMP					40	40	III	3a			
12	114	0-40	MCL	10YR 5/3			40-60	MCL	2.5Y 6/2		CO	Poor	60	IMP					40	40	III	3a			
13	111	0-40	MCL	10YR 5/3			40-60	MCL	2.5Y 6/2		CO	Poor	60	IMP					40	40	III	3a			
14	106	0-40	MCL	10YR 4/2		FO	40-60	fSZL	10YR 4/2	15%	COB	MSAB	60	IMP							I	1	6.24	20.33	2
15	106	0-40	MCL	10YR 5/3			40-60	MCL	2.5Y 6/2		CO	Poor	60	IMP					40	40	III	3a			
16	100	0-40	MCL	10YR 5/3		FO	40-60	MCL	2.5Y 5/2		COB	Moderate	60-120	C	2.5Y 6/2		COB	Poor	60	0	III	3a			
17	105	0-40	MCL	10YR 5/3		FO	40-60	MCL	2.5Y 5/3		COB	Moderate	60-120	C	2.5Y 6/2		COB	Poor	60	0	III	3a			
18	104	Non-Agricultural																							
19	95	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	0	IV	3b			
20	88	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	C	2.5Y 6/2		CO	Poor	40	0	IV	3b			
21	93	0-40	HCL	10YR 5/3		FO	40-60	C	2.5Y 5/3		MOB	Poor	60-120	C	2.5Y 6/2		CO	Poor	40	0	IV	3b			
22	95	0-40	HCL	10YR 5/3		FO	40-60	C	2.5Y 5/3		MOB	Poor	60-120	C	2.5Y 6/2		CO	Poor	40	0	IV	3b			
23	96	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	C	2.5Y 6/2		CO	Poor	40	0	IV	3b			
24	92	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	C	2.5Y 6/2		CO	Poor	40	0	IV	3b			
25	90	0-40	MCL	10YR 5/3			40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	40	III	3a			
26	83	0-40	MCL	10YR 5/3			40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	40	III	3a			
27	89	0-40	MCL	10YR 4/2			40-120	C	2.5Y 6/1		MO	Poor							40	40	III	3a			
28	92	0-30	MCL	10YR 5/3			30-120	C	2.5Y 5/3		COB	Poor							30	30	IV	3b			
29	91	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	0	IV	3b			
30	86	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	0	IV	3b			
31	84	0-40	MCL	10YR 5/3			40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	40	III	3a			
32	82	0-40	MCL	10YR 5/3			40-70	C	2.5Y 5/3		MOB	Poor	70-120	LfS	2.5Y 6/3		CO	Moderate	40	40	III	3a			
33	84	Non-Agricultural																							
34	82	0-50	MCL	10YR 4/2			50-120	C	2.5Y 6/1		MO	Poor							50	50	III	3a			
35	78	0-50	MCL	10YR 4/2			50-120	C	2.5Y 6/1		MO	Poor							50	50	III	3a			
36	81	0-50	MCL	10YR 4/2			50-120	C	2.5Y 6/1		MO	Poor							50	50	III	3a			
37	71	0-35	MCL	10YR 5/3		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
38	74	0-35	MCL	10YR 4/1		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
39	76	0-35	MCL	10YR 4/1		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
40	73	0-35	MCL	10YR 5/3		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
41	65	0-35	MCL	10YR 5/3		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
42	67	0-35	MCL	10YR 5/3		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
43	68	0-35	MCL	10YR 5/3		FO	40-120	C	2.5Y 6/1		MOB	Poor							35	0	IV	3b			
44	71	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	C	2.5Y 5/1		MOB	Poor	40	0	IV	3b			
45	72	0-40	MCL	10YR 5/3		FO	40-70	C	2.5Y 5/3		MOB	Poor	70-120	C	2.5Y 6/1		MOB	Poor	40	0	IV	3b			
46	68	0-30	MCL	10YR 4/1		CO	30-120	C	2.5Y 6/1		MOB	Poor							30	30	IV	3b			
47	62	0-35	MCL	10YR 5/3		FOB	35-120	C	2.5Y 6/1		MOB	Poor							35	35	IV	3b			
48	64	0-30	MCL	10YR 5/3		FOB	30-120	C	2.5Y 6/2		MOB	Poor							30	30	IV	3b			
49	64	0-35	MCL	10YR 5/3		FOB	30-120	C	2.5Y 6/1		MOB	Poor							35	35	IV	3b			
50	69	0-40	MCL	10YR 5/3		FOB	40-120	C	2.5Y 6/1		MOB	Poor							40	40	III	3a			
51	71	0-40	MCL	2.5Y 5/3		FO	40-70	fSZL	2.5Y 6/3		MO	Mooderate	70	IMP							I	1	31.24	41.33	2
52	69	0-40	MCL	2.5Y 5/3		FO	40-70	fSZL	2.5Y 6/3		MO	Mooderate	70	IMP							I	1	31.24	41.33	2
53	66	0-40	MCL	2.5Y 5/3		FO	40-70	fSZL	2.5Y 6/3		MO	Mooderate	70	IMP							I	1	31.24	41.33	2
54	58	0-30	MCL	10YR 5/3			30-50	C	2.5Y 5/1		MOB	Poor	50-120	LfS	2.5Y 6/1		FB	WCSAB	30	30	IV	3b			
55	60	0-40	MCL	10YR 5/3			40-80	C	2.5Y 5/3		MOB	Poor	80-120	C	2.5Y 6/1		FB	Poor	40	40	III	3a			
56	59	0-40	MCL	10YR 5/3			40-80	C	2.5Y 5/3		MOB	WCAB	80-120	C	2.5Y 4/1		MO	Massive	40	40	III	3a	32.24	17.33	1
57	62	0-35	MCL	2.5Y 5/3			35-70	fSZL	2.5Y 6/3		MO	Mooderate	70	IMP							I	1	22.74	42.83	2
58	61	0-35	MCL	10YR 5/3			35-70	C	10YR 5/3		MOB	Poor	70-120	C	2.5Y 6/1		MOB	Poor	35	35	IV	3b			
59	61	0-40	MCL	10YR 5/3			40-80	C	10YR 5/3		MOB	Poor	80-120	C	2.5Y 6/1		MOB	Poor	40	40	III	3a			

		Topsoil				Upper Subsoil						Lower Subsoil						Wetness Assesment			Grade	Droughtiness Assessment		Grade
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth to SPL	Gley	Wetness Class	limit by Wetness	MB Wheat	MB Potato	limit by Droughtiness
60	62	0-40	MCL	10YR 5/3			40-70	fSZL	2.5Y 6/6		FB	WCSAB	70-120	LfS	2.5Y 6/1		FB	WCSAB			I	1	86.24	41.33	1
61	57	0-40	MCL	10YR 5/3		FOB	50-70	C	2.5Y 5/3		MO	Poor	70-120	LfS	2.5Y 6/1		MOB	Poor	40	0	IV	3b			
62	58	0-40	MCL	10YR 5/3		FOB	50-70	C	2.5Y 5/3		MO	Poor	70-120	C	2.5Y 6/1		MOB	Poor	40	0	IV	3b			
	86.34																								

Appendix 4b – Trial Pit Descriptions

Sample Point No. 14		
Horizon 1	0-40cm Dark greyish brown (10YR 4/2) medium clay loam.	
Horizon 2	40-60cm Dark greyish brown (10YR 4/2) fine sandy silty loam with a medium subangular blocky structure, firm consistence and common ochreous and black mottles.	
Horizon 3	Impenetrable due to layer of stones that quickly become boulders or rock that cannot be dug	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	Not Present	
Gleying	Present from 40cm indicated by greyish colours and ochreous mottles	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	6.24	
MB potatoes	20.33	
Droughtiness Limitation	2	

Sample Point No. 56		
Horizon 1	0-40cm Brown (10YR 5/3) medium clay loam.	
Horizon 2	40-80cm Light olive brown (2.5Y 5/3) clay with a weak coarse angular blocky structure, firm consistence, and many ochreous and black mottles. Very few roots or biopores.	
Horizon 3	80-120 Dark grey (2.5Y 4/1) clay with a massive structure, many ochreous mottles and virtually no evidence of rooting or biopores	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 Photo didn't save
Slowly permeable layer	Present from 40cm indicated by clay with weak coarse angular blocky structure, mottles evidencing wetness and <0.5% biopores >0.5mm	
Gleying	Present from 40cm indicated by pale colours and ochreous mottles	
Wetness Class	IV	
Wetness limitation	3b	
MB Wheat	32.24	
MB potatoes	17.33	
Droughtiness Limitation	1	

Sample Point No. 60		
Horizon 1	0-40cm Brown (10YR 5/3) medium clay loam.	
Horizon 2	40-70cm Olive yellow (2.5Y 6/6) fine sandy silty loam with a weak coarse subangular blocky structure, firm consistence, and few black mottles. Strong evidence of rooting and biopores.	
Horizon 3	70-120 Grey (2.5Y 6/1) loamy fine sand with a weak coarse subangular blocky structure and few black mottles. Strong evidence of rooting and biopores.	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	Not Present	
Gleying	Not Present	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	86.24	
MB potatoes	41.33	
Droughtiness Limitation	1	

Additional Photos

Evidence of wetness at 16

Soil auger cores

34

46

47

62

ANALYTICAL REPORT

Report Number	**73562-23**	**W250**	**AMET PROPERTY**
Date Received	**25-MAY-2023**		**HENWICK BARN**
Date Reported	**05-JUN-2023**		**BULWICK**
Project	**SOIL**		**CORBY**
Reference	**KERON**		**NORTHANTS**
Order Number			**NN17 3DU**

Laboratory Reference		**SOIL630731**	**SOIL630732**	**SOIL630733**							
Sample Reference		**ANSTY 60**	**ANSTY 60 S/S**	**ANSTY 6**							
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**							
Coarse Sand 2.00-0.63mm	% w/w	2	3	2							
Medium Sand 0.63-0.212mm	% w/w	3	2	1							
Fine Sand 0.212-0.063mm	% w/w	20	33	34							
Silt 0.063-0.002mm	% w/w	51	50	42							
Clay <0.002mm	% w/w	24	12	21							
Textural Class **		MCL	fSZL	MCL							

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control

** Please see the attached document for the definition of textural classes.

Reported by

Myles Nicholson

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ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

- vf Very Fine (more than 2/3's of sand less than 0.106 mm)
- f Fine (more than 2/3's of sand less than 0.212 mm)
- c Coarse (more than 1/3 of sand greater than 0.6 mm)
- m Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

- M medium (less than 27% clay)
- H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

APPENDIX 5 - DESCRIPTION OF ALC GRADES

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 and horticultural crops can usually be grown but on some land in the 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.

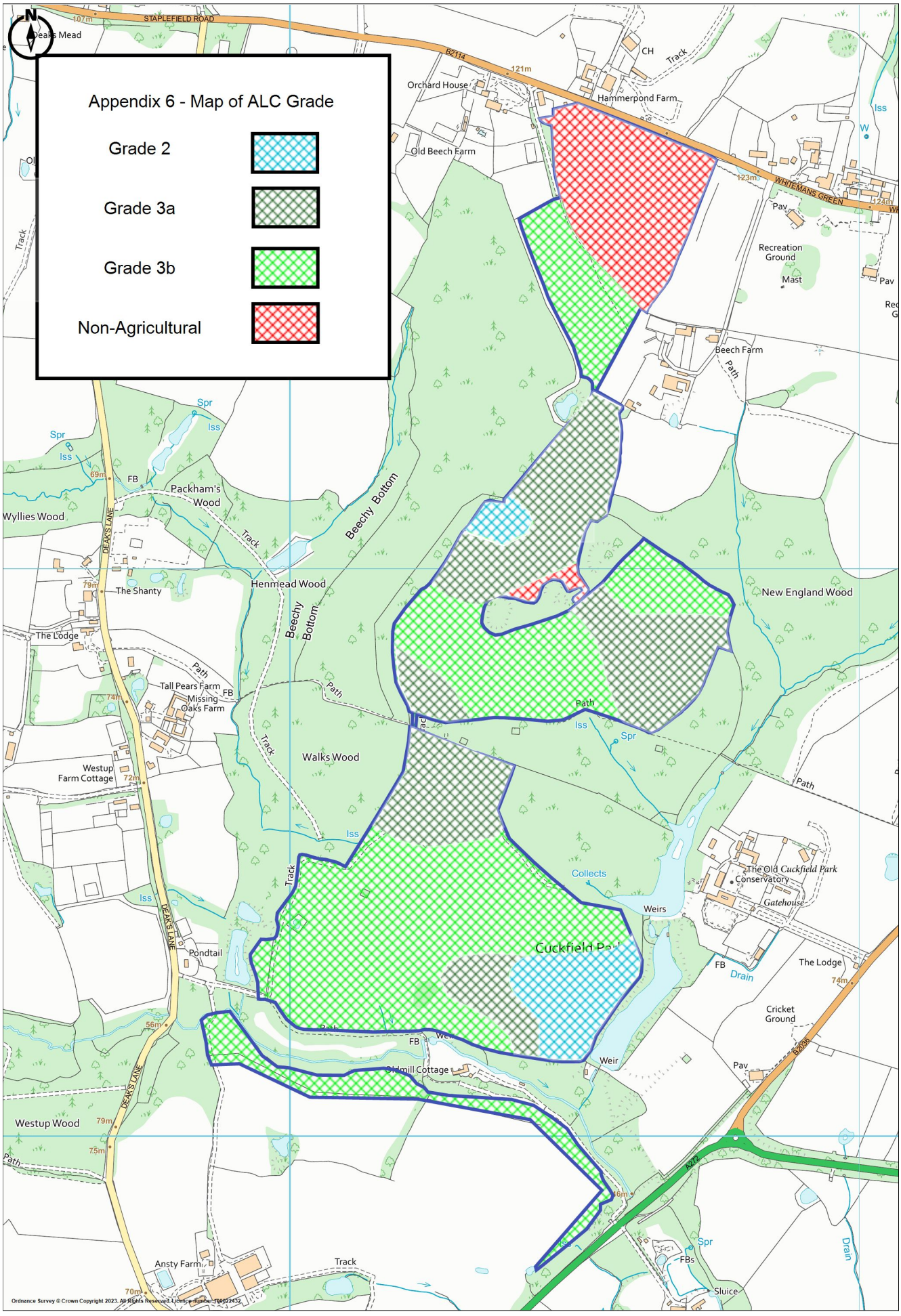
Grade 3 - good to moderate quality agricultural land Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

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



Promap
LANDMARK INFORMATION

Plotted Scale - **1:9000**. Paper Size - **A4**