AGRICULTURAL LAND CLASSIFICATION
CAUDWELL

CLIENT: GREEN ENERGY INTERNATIONAL
PROJECT: CAUDWELL
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ISSUED BY: JAMES FULTON MRICS FAAV

CONTENTS

1. EXECUTIVE SUMMARY

1.1 This report assesses the Agricultural Land Classification (ALC) grading of 112.3Ha, of agricultural land at Holbeach St Matthew in Lincolnshire.

1.2 There is no factor that limits land grade.

1.3 The land is graded as follows:

Grade 1:	112.3 Ha

2. INTRODUCTION

2.1 Amet Property Ltd have been instructed by Green Energy International to produce an Agricultural Land Classification (ALC) report on a 112.3-hectare site on land to the south of Holbeach St Matthew in Lincolnshire. The ALC report is being prepared to accompany a planning application to be submitted for a solar farm with associated infrastructure.

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 James Fulton and 3 assistant surveyors on the 23rd February 2023 during which the conditions were dry and sunny. Soil conditions were moist at all depths.

2.4 During the inspections 3 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 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 112.3Ha of arable land spread cross 6 fields. The land is to the south of Holbeach St Matthew approximately 4 miles northeast of Holbeach and 3 miles from the sea.

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 Ampthill Clay Formation – Mudstone with superficial deposits recorded as Tidal Flat Deposits – Clay and Silt.

3.2 The soils on the site are identified as being Wisbech Association – Deep stoneless calcareous coarse silty soils.

3.3 The 1:250,000 series Agricultural Land Classification maps show the land to be Grade 1. 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.

[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	540888 330302
Altitude (ALT)	3
Average Annual Rainfall (AAR)	589
Accumulated Temperature - Jan to June (ATO)	1434
Duration of Field Capacity (FCD)	108
Moisture Deficit Wheat	118
Moisture Deficit Potatoes	114

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 3 – areas with greater than 1 in 100 annual chance of flooding. There was no evidence of flooding seen during the site visit and it is considered that flood risk will not result in a limitation to land grade.

5. STONINESS

5.1 The site is stoneless with stones not providing a limiting factor to land grade.

6. GRADIENT AND MICRORELIEF

6.1 The site is flat to gently sloping with neither gradient nor micro-relief providing a limiting factor to land grade.

7. SOILS

7.1 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 is extremely consistent across the whole site being a Dark greyish brown (10YR 4/2) medium clay loam. When hand texturing it was clear that there were areas with slightly higher and lower clay percentages and topsoils were recorded as silty clay loam and silty loam but the lab tests confirm that in all cases they are medium clay loam.

7.3 The subsoil was also very consistent recorded as a fine silty sandy loam at all locations. There was only ever one subsoil found and the structure was consistently recorded as coarse platy with a friable consistence. Colour varied slightly from Grey (10YR 5/1) through greyish brown (10YR 5/2) to brown (10YR 5/3)

INTERACTIVE FACTORS

8. WETNESS

8.1 An assessment of the wetness class of the trial pit locations 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 There is no slowly permeable layer but there is a gleyed horizon starting at between 35 and 50cm which based on Table 13 gives wetness class I. Table 6, <126 FCD wetness class I and medium clay loam topsoil gives no limit to land grade.

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) = 118
MD (Potatoes) = 114

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 with details found at ***appendix 4***.

9.5 The deep silty soils mean that droughtiness does not limit land grade.

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 there is no factor that limits land grade.

10.4 The breakdown of land by classification is:

Grade 1:	112.3 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)*

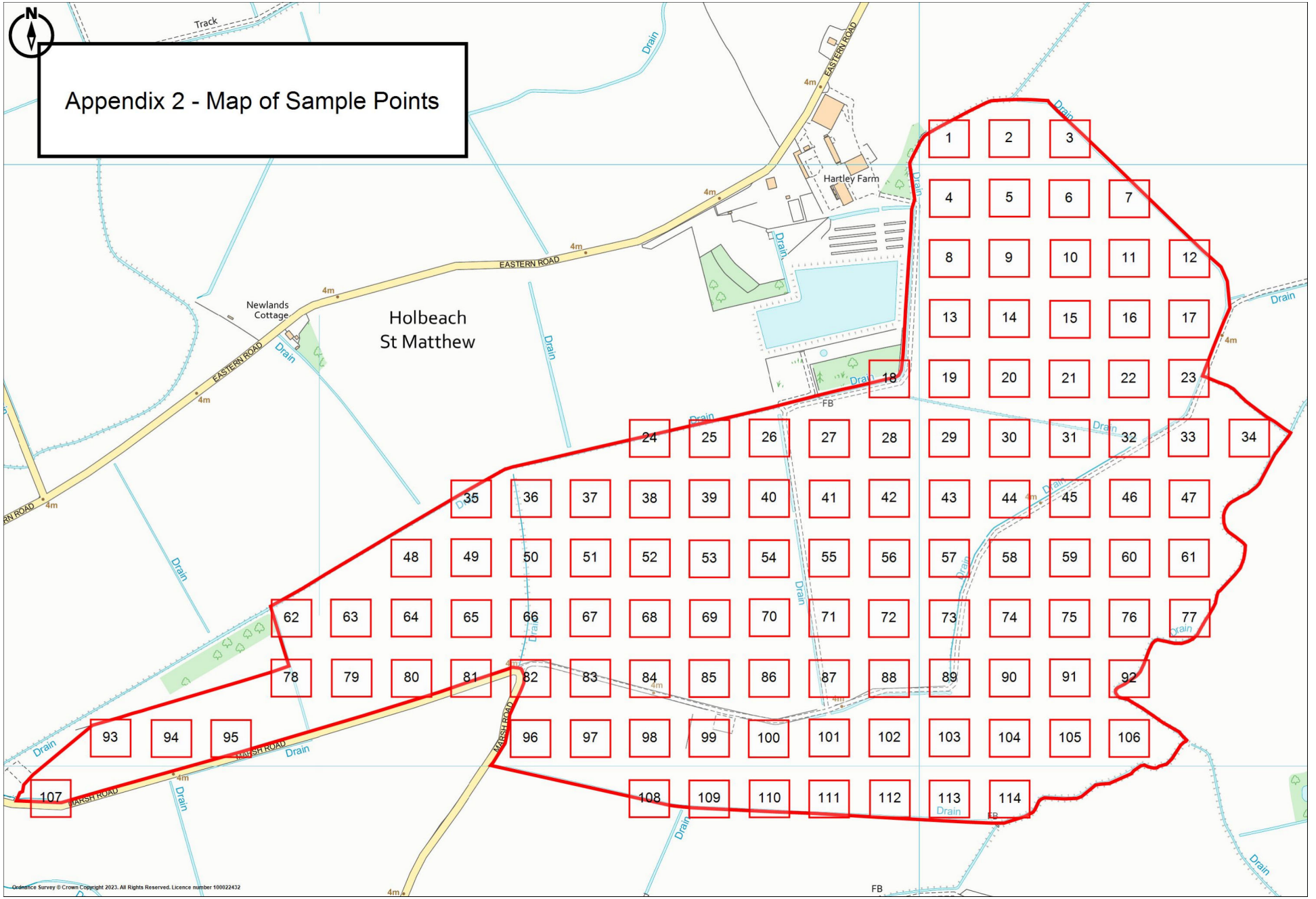
Professional Standards

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

The BSSS acknowledges a significant lack of suitably qualified individuals able to produce ALC reports and so I have trained individuals to meet the requirements of BSSS Document 1 *Foundation skills in field soil investigation, description, and interpretation.*

Appendix 2 - Map of Sample Points



Appendix 3 – Climatic Data

Site Details: Caudwell

Grid reference (centre of site): 540888 330302

Altitude: Mean 3.36m AOD

Climatic data from surrounding locations:

Grid Reference	ALT	AAR	LR_AAR	ASR	ATO	ATS	MDW	MDP	FCD
54003300	2	590	0.6	300	1436	2432	118	114	108
54003350	6	579	0.8	290	1429	2424	120	116	107
54503300	4	575	0	295	1433	2431	120	115	106
54503350	0	564	0	285	1435	2433	122	118	101

Altitude Adjusted

Grid Reference	AAR	ATO	FCD	MDW	MDP	Proximity Adjustment
54003300	590.82	1434.45	108.12	117.80	113.74	89.86%
54003350	576.89	1432.01	106.69	120.42	116.55	3.46%
54503300	575.00	1433.73	106.00	120.07	115.09	4.65%
54503350	564.00	1431.17	101.00	121.66	117.54	2.03%

Appendix 4 - Auger point assessment

		Topsoil					Upper Subsoil						Grade limit by	Grade limit by	Grade limit by	Grade limit by	Wetness Assesment			Grade limit by	Droughtiness Assessment		Grade limit by
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Gradient	Depth	Stoniness	Texture	Depth to SPL	Depth to Gley	Wetness Class	Wetness	MB Wheat	MB Potato	Droughtiness
1	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
2	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	C Platy	1	1	1	1		40	I	1	79.92	21.02	1
3	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
4	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
5	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
6	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
7	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
8	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
9	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
10	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
11	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
12	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
13	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
14	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
15	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
16	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
17	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
18	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
19	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
20	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
21	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
22	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
23	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
24	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
25	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
26	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
27	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
28	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
29	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
30	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
31	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
32	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
33	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
34	2	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/3		CO	C Platy	1	1	1	1		35	I	1	81.42	22.52	1
35	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
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38	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
39	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
40	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
41	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
42	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
43	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
44	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
45	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
46	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
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48	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
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56	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
57	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
58	2	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
59	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
60	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1

		Topsoil					Upper Subsoil						Grade limit by	Grade limit by	Grade limit by	Grade limit by	Wetness Assesment			Grade limit by	Droughtiness Assessment		Grade limit by
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Gradient	Depth	Stoniness	Texture	SPL	Gley	Wetness Class	Wetness	MB Wheat	MB Potato	Droughtiness
61	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
62	2	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
63	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
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66	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
67	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
68	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
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70	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
71	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
72	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
73	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
74	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
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81	2	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
82	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	C Platy	1	1	1	1		35	I	1	81.42	22.52	1
83	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
84	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
85	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
86	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
87	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
88	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
89	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
90	4	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
91	3	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
92	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
93	6	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
94	3	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
95	2	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
96	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
97	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
98	4	0-35	MCL	10YR 4/2			35-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
99	4	0-50	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
100	4	0-50	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
101	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
102	3	0-50	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
103	3	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
104	3	0-50	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
105	3	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/1		CO	Moderate	1	1	1	1				1			1
106	3	0-50	MCL	10YR 4/2			40-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
107	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
108	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
109	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
110	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
111	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
112	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
113	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/2		CO	Moderate	1	1	1	1				1			1
114	4	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
115	5	0-50	MCL	10YR 4/2			50-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
116	5	0-40	MCL	10YR 4/2			40-120	fSZL	10YR 5/3		CO	Moderate	1	1	1	1				1			1
	3.36																						

Appendix 4b – Trial Pit Descriptions

Sample Point No. 2		
Horizon 1	0-40cm Dark greyish brown (10YR 4/2) medium clay loam.	
Horizon 2	40-120cm Greyish brown (10YR 5/2) fine silty sandy loam with a coarse platy structure and friable consistence and common ochreous mottles	
Horizon 3	Not present	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 – not present
Slowly permeable layer	Not Present	
Gleying	Starts at 40cm evidenced by grey colours and ochreous mottles	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	79.92	
MB potatoes	21.02	
Droughtiness Limitation	1	

Sample Point No. 34		
Horizon 1	0-35cm Dark greyish brown (10YR 4/2) medium clay loam.	
Horizon 2	35-120cm Brown (10YR 5/3) fine silty sandy loam with a coarse platy structure and friable consistence and common ochreous mottles	
Horizon 3	Not present	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 – not present
Slowly permeable layer	Not Present	
Gleying	Starts at 35cm evidenced by grey colours and ochreous mottles	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	81.42	
MB potatoes	22.52	
Droughtiness Limitation	1	

Sample Point No. 82		
Horizon 1	0-35cm Dark greyish brown (10YR 4/2) medium clay loam.	
Horizon 2	35-120cm Greyish brown (10YR 5/2) fine silty sandy loam with a coarse platy structure and friable consistence and common ochreous mottles	
Horizon 3	Not present	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 – not present
Slowly permeable layer	Not Present	
Gleying	Starts at 35cm evidenced by grey colours and ochreous mottles	
Wetness Class	I	
Wetness limitation	1	
MB Wheat	81.42	
MB potatoes	22.52	
Droughtiness Limitation	1	

ANALYTICAL REPORT

Report Number	**59951-23**	**W250**	**AMET PROPERTY**
Date Received	**27-FEB-2023**		**HENWICK BARN**
Date Reported	**07-MAR-2023**		**BULWICK**
Project	**SOIL**		**CORBY**
Reference	**GREEN ENERGY**		**NORTHANTS**
Order Number			**NN17 3DU**

Laboratory Reference		**SOIL613166**	**SOIL613167**	**SOIL613168**	**SOIL613169**
Sample Reference		**HOLBEACH 2**	**HOLBEACH 34**	**HOLBEACH 82**	**HOLBEACH 82 SS**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Coarse Sand 2.00-0.63mm	% w/w	1	0	0	0
Medium Sand 0.63-0.212mm	% w/w	0	1	1	0
Fine Sand 0.212-0.063mm	% w/w	27	33	32	33
Silt 0.063-0.002mm	% w/w	48	44	48	53
Clay <0.002mm	% w/w	24	22	19	14
Textural Class **		MCL	MCL	MCL	fSZL

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

This test report shall not be reproduced, except in full, without the written approval of the laboratory.

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

Reported by

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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.