AGRICULTURAL LAND CLASSIFICATION REPORT

SOUTHLANDS SOLAR FARM AND BATTERY STORAGE
LAND SOUTH OF RUNWELL ROAD (A132), RUNWELL, WICKFORD
P19-ALC OCTOBER 2022

CONTENTS

1. EXECUTIVE SUMMARY

1.1 This report assesses the Agricultural Land Classification (ALC) grading of 68.8Ha, of agricultural land south of Runwell Road (A132), Runwell, Wickford, Essex.

1.2 The limiting factor is found to be soil wetness a combination of the soils found on site and the climatic regime. On the lighter land (MCL topsoil) the droughtiness limitation is as limiting as the wetness.

1.3 The land is graded as follows:

Grade 3a:	18.2 Ha	26.5%
Grade 3b:	50.6 Ha	73.5%

2. INTRODUCTION

2.1 Amet Property Ltd have been instructed by Enso Green Holdings J Limited to produce an Agricultural Land Classification (ALC) report on a 68.8-hectare site at land south of Runwell Road (A132), Runwell, Wickford, Essex in support of a planning application 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.

2.3 The report is based on site visits conducted on the 16th of September and 13th October 2022. During the site visits conditions were dry and sunny. During the inspection three trial pits were dug to a depth of 120cm. In addition to the trial pits an augur 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 augur samples. A plan of augur points can be found at ***appendix 1***. 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.

2.4 During the first visit sampling conditions were extremely difficult due to the long dry summer and so a second visit was undertaken in October once there had been some rain and so during the second visit conditions were generally good with the subsoil state described as moist allowing samples to be removed and examined easily.

2.5 The site extends 68.8Ha of arable land spread across 5 fields. The elevation of the site ranged from 6-21m AOD and is described as level to gently sloping.

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. The

[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

contents and format of the report is further informed by the BSSS guidance (2022)[3].

2.8 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 be London Clay Formation – Clay, silt and sand. Where identified the superficial deposits are described as River Terrace Deposits, 3 – Sand and gravel.

3.2 The national soils map shows the northeast and northwest of the site to be Windsor Association – Slowly permeable seasonally waterlogged clayey soils mostly with brown subsoils. The centre and south of the site are shown as Ratsborough Association – Fine silty and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

3.3 The 1:250,000 series Agricultural Land Classification maps show the land to be Grade 3. 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.

[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

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 2***

Grid Reference	576634 194634
Altitude (ALT)	12.63
Average Annual Rainfall (AAR)	587.77
Accumulated Temperature - Jan to June (ATO)	1475.02
Duration of Field Capacity (FCD)	109.13
Moisture Deficit Wheat	123.72
Moisture Deficit Potatoes	120.82

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 majority of the site is shown to be in flood zone 1 – areas with a less than 1 in 1000 annual chance of flooding. A small area either side of the watercourse running north-south through the centre of the site is shown as flood zone 2 and 3 – areas with more than a 1 in 100 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 between 1% and 5% small hard round stones in the topsoil and up to 10% in a small number of locations. Stoniness was never the most limiting factor to land grade.

6. GRADIENT

6.1 The steepest areas of the site are only a gentle slope with gradient never representing the most limiting factor to 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 trial pit descriptions and photographs can be found at ***appendix 3***.

7.2 The topsoil was all Dark greyish brown and was generally a heavy or medium clay loam and occasionally a heavy silty clay loam.

7.3 There was some variation in the subsoils but they were all clay or occasionally clay loam, firm and poorly structured with identifiable slowly permeable gleyed horizons from 25cm.

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 The slowly permeable gleyed horizon from 25cm along with the FCD of 109.13 result in a wetness class of III based on Figure 7 in the MAFF guidance.

8.3 Table 6 with less than 126 FCD, wetness class III and medium clay loam topsoil results in a grade 3a limitation while the heavy clay loam topsoil results in a grade 3b limitation.

8.4 Wetness was found to be the limiting factor across the whole site.

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) = 123.72
MD (Potatoes) = 120.82

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. The moisture balance was calculated for all of the locations and can be found at ***appendix 4***

9.4 The droughtiness limitation was assessed for the trial pit locations. The whole site is limited by droughtiness to grade 3a.

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.***

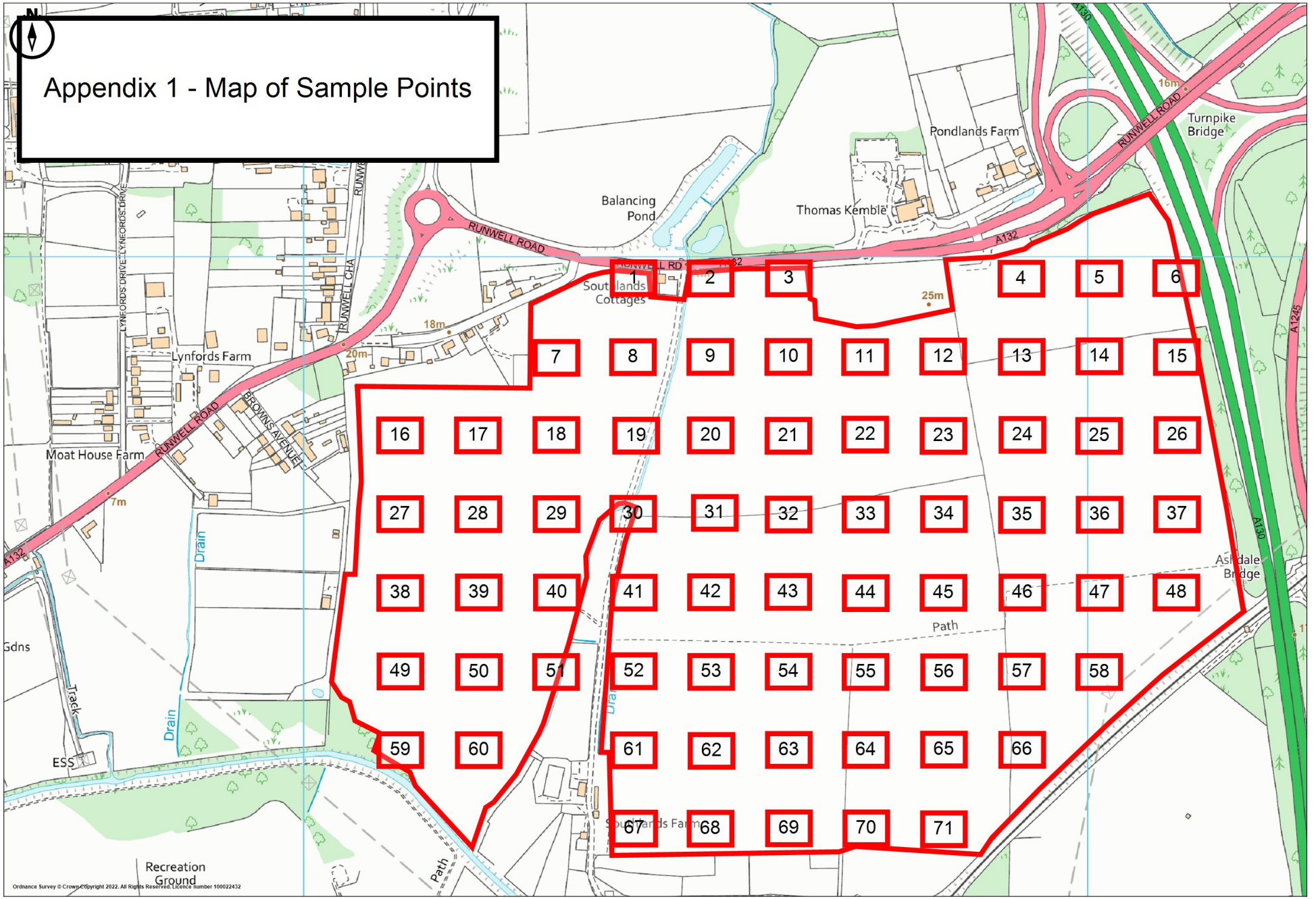
10.3 This assessment sets out that the site is limited by both wetness and droughtiness with wetness being the most limiting factor across most of the site.

10.4 The breakdown of land by classification is:

Grade 3a:	18.2 Ha
Grade 3b	50.6 Ha

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

Appendix 1 - Map of Sample Points



Promap
LANDMARK INFORMATION

Appendix 2 – Climatic Data

Site Details: Southlands Solar Farm

Grid reference (centre of site): 576634 194634

Altitude: Mean 12.63m AOD

Climatic data from surrounding locations:

Grid Reference	ALT	AAR	LR_AAR	ASR	ATO	ATS	MDW	MDP	FCD
57501900	13	580	0.2	300	1477	2492	123	120	106
57501950	17	593	0.2	300	1470	2484	123	120	111
58001900	71	570	0.2	300	1410	2420	117	112	102
58001950	10	581	0.3	295	1477	2494	125	122	106

Altitude Adjusted

Grid Reference	AAR	ATO	FCD	MDW	MDP	Proximity Adjustment
57501900	579.93	1477.42	105.99	123.04	120.06	7.01%
57501950	592.13	1474.98	110.87	123.51	120.68	68.89%
58001900	558.33	1476.54	100.31	123.81	121.04	4.31%
58001950	581.79	1474.00	106.11	124.67	121.57	19.79%

Appendix 3 - Soil Sampling Information

		Topsoil					Subsoil 1						Subsoil 2					
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure
1	11	0-25	HCL	10yr 4/2	<5%		25-50	C	7.5YR 5/3		CO	WCSAB	50-120	C	10YR 6/2		C	CAB
2	12	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
3	16	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
4	21	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	CAB						
5	19	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	Poor						
6	16	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	Poor						
7	11	0-25	MCL	10yr 4/2	<5%		25-50	C	7.5YR 5/3		CO	Poor	50-120	C	10YR 6/2		C	Poor
8	10	0-25	MCL	10yr 4/2	<5%		25-50	C	7.5YR 5/3		CO	Poor	50-120	C	10YR 6/2		C	Poor
9	11	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
10	16	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
11	18	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
12	21	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
13	20	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	C PLATY	50-120	C	10YR 6/2		MO	CAB
14	18	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
15	16	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
16	15	0-25	MZCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
17	13	0-25	MZCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
18	11	0-25	MCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
19	8	0-25	MCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
20	10	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
21	15	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
22	20	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
23	21	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
24	20	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
25	18	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
26	15	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
27	13	0-25	HZCL	10YR 4/2	<5%		25-40	C	10YR 6/2	10%	MO	Poor	40-120	C	10YR 6/2		MO	Poor
28	12	0-25	HZCL	10YR 4/2	5%		25-40	C	10YR 6/2	10%	MO	Poor	40-120	C	10YR 6/2		MO	Poor
29	10	0-25	HZCL	10YR 4/2	<5%		25-40	C	10YR 6/2	10%	MO	Poor	40-120	C	10YR 6/2		MO	Poor
30	9	0-25	HCL	10YR 4/2	10%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
31	10	0-25	HCL	10YR 4/2	10%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
32	13	0-25	HCL	10YR 4/2	5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
33	17	0-25	HCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
34	19	0-25	HCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
35	21	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
36	22	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
37	19	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	C PLATY	50-120	C	10YR 6/2		MO	Poor
38	17	0-25	HZCL	10YR 4/2	5%		25-40	C	10YR 6/2	10%	MO	C PLATY	40-120	C	10YR 6/2		MO	CAB
39	14	0-25	HZCL	10YR 4/2	5%		25-40	C	10YR 6/2	10%	MO	Poor	40-120	C	10YR 6/2		MO	Poor
40	13	0-25	HZCL	10YR 4/2	5%		25-40	C	10YR 6/2	10%	MO	Poor	40-120	C	10YR 6/2		MO	Poor
41	10	0-25	HCL	10YR 4/2	10%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
42	12	0-25	HCL	10YR 4/2	10%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
43	9	0-25	HCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
44	8	0-25	HCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
45	10	0-25	HCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
46	12	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor

		Topsoil					Subsoil 1						Subsoil 2					
Sample No	Altitude	Depth	Texture	Colour	Stoniness	Mottles	Depth	Texture	Colour	Stoniness	Mottles	Structure	Depth	Texture	Colour	Stoniness	Mottles	Structure
47	16	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
48	13	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
49	11	0-25	HZCL	10YR 4/2	5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
50	9	0-25	HZCL	10YR 4/2	5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
51	7	0-25	HZCL	10YR 4/2	5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
52	9	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	Poor						
53	8	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
54	9	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
55	11	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	Poor						
56	12	0-25	HCL	10YR 4/2	5%		25-120	C	10YR 5/3		MO	Poor						
57	10	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
58	12	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
59	5	0-25	HZCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
60	4	0-25	HZCL	10YR 4/2	<5%		25-50	C	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
61	9	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
62	10	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
63	9	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
64	8	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
65	9	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
66	9	0-25	MCL	10YR 4/2	<5%		25-50	CL	10YR 6/2	10%	MO	Poor	50-120	C	10YR 6/2		MO	Poor
67	8	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
68	6	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
69	6	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
70	7	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
71	8	0-25	HCL	10YR 4/2	<5%		25-120	C	10YR 5/3		MO	Poor						
	12.63																	

Appendix 3b – Trial Pit Descriptions

Sample Point No. 1		
Horizon 1	0-25cm Dark Greyish Brown (10YR 4/2) heavy clay loam with between 1% and 5% small rounded stones.	
Horizon 2	25cm-50cm Brown (7.5YR 5/3) clay with a weak course subangular blocky structure, very firm consistence and common ochreous mottles	
Horizon 3	50-120cm Light greyish brown (10 YR 6/2) clay with a course angular blocky structure, firm consistence and many ochreous mottles.	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	Starts at 25cm – evidenced by firm weak course subangular blocky structure with less than 0.5% biopores >0.5mm	
Gleying	Starts at 25cm evidenced by grey ped faces and ochreous mottles	
Wetness Class	III	
Wetness limitation	3b	
MB Wheat	2.78	
MB potatoes	-17.32	
Droughtiness Limitation	3a	
Soil depth limitation	Not limiting factor	
Stoniness limitation	Not limiting factor	

Sample Point No. 4	
Horizon 1	0-25cm Dark Greyish Brown (10YR 4/2) heavy clay loam with between 1% and 5% small rounded stones.
Horizon 2	25-120cm Brown (10YR 5/3) clay with a course angular blocky structure, firm consistence, and few ochreous mottles
Pictures	
Horizon 1	Horizon 2 
Slowly permeable layer	Starts at 25cm evidenced by firm course angular blocky structure with less than 0.5% biopores >0.5mm
Gleying	From 25cm evidenced by grey ped faces and ochreous mottles
Wetness Class	III
Wetness limitation	3b
MB Wheat	2.78
MB potatoes	-17.32
Droughtiness Limitation	3a
Soil depth limitation	Not limiting factor
Stoniness limitation	Not limiting factor

Sample Point No. 13		
Horizon 1	0-25cm Dark Greyish Brown (10YR 4/2) medium clay loam with between 1% and 5% small rounded stones.	
Horizon 2	25cm-50cm Light greyish brown (10 YR 6/2) stony clay with a course platy structure, firm consistence and many ochreous mottles	
Horizon 3	50-120cm Light greyish brown (10 YR 6/2) clay with a course angular blocky structure, firm consistence and many ochreous mottles.	
Pictures		
Horizon 1 	Horizon 2 	Horizon 3 
Slowly permeable layer	Starts at 25cm – evidenced by firm course platy structure with less than 0.5% biopores >0.5mm	
Gleying	Starts at 25cm evidenced by grey ped faces and ochreous mottles	
Wetness Class	III	
Wetness limitation	3a	
MB Wheat	2.78	
MB potatoes	-17.32	
Droughtiness Limitation	3a	
Soil depth limitation	Not limiting factor	
Stoniness limitation	Not limiting factor	

ANALYTICAL REPORT

Report Number	**35590-22**	**W250**	**AMET PROPERTY**
Date Received	**22-SEP-2022**		**HENWICK BARN**
Date Reported	**29-SEP-2022**		**BULWICK**
Project	**SOIL**		**CORBY**
Reference	**LIGHTSOURCE**		**NORTHANTS**
Order Number			**NN17 3DU**

Laboratory Reference		**SOIL580276**	**SOIL580277**	**SOIL580278**	**SOIL580279**						
Sample Reference		**RAYLEIGH 4**	**RAYLEIGH 18**	**RAYLEIGH 36**	**RAYLEIGH 40**						
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**						
Coarse Sand 2.00-0.63mm	% w/w	4	3	5	2						
Medium Sand 0.63-0.212mm	% w/w	9	2	7	3						
Fine Sand 0.212-0.063mm	% w/w	18	17	20	12						
Silt 0.063-0.002mm	% w/w	39	53	42	56						
Clay <0.002mm	% w/w	30	25	26	27						
Stones >50mm	% w/w	0.0	0.0	0.0	0.0						
Stones 20-50mm	% w/w	3.6	1.6	10.3	0.0						
Stones 2-20mm	% w/w	2.8	0.2	3.4	0.3						
Textural Class **		HCL	MCL	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

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

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 4- Wetness Assessment

	Wetness Assesment			Grade
Sample No	Depth to SPL	Gley	Wetness Class	According to Wetness
1	35	<40	III	3b
2	35	<40	III	3b
3	35	<40	III	3b
4	35	<40	III	3b
5	35	<40	III	3b
6	35	<40	III	3b
7	35	<40	III	3a
8	35	<40	III	3a
9	35	<40	III	3b
10	35	<40	III	3b
11	35	<40	III	3b
12	35	<40	III	3b
13	35	<40	III	3a
14	35	<40	III	3b
15	35	<40	III	3b
16	35	<40	III	3a
17	35	<40	III	3a
18	35	<40	III	3a
19	35	<40	III	3a
20	35	<40	III	3b
21	35	<40	III	3b
22	35	<40	III	3b
23	35	<40	III	3b
24	35	<40	III	3a
25	35	<40	III	3a
26	35	<40	III	3a
27	35	<40	III	3b
28	35	<40	III	3b
29	35	<40	III	3b
30	35	<40	III	3b
31	35	<40	III	3b
32	35	<40	III	3b
33	35	<40	III	3b
34	35	<40	III	3b
35	35	<40	III	3a
36	35	<40	III	3a
37	35	<40	III	3a
38	35	<40	III	3b
39	35	<40	III	3b
40	35	<40	III	3b
41	35	<40	III	3b
42	35	<40	III	3b
43	35	<40	III	3b

	Wetness Assesment			Grade
Sample No	Depth to SPL	Gley	Wetness Class	According to Wetness
44	35	<40	III	3b
45	35	<40	III	3b
46	35	<40	III	3a
47	35	<40	III	3a
48	35	<40	III	3a
49	35	<40	III	3b
50	35	<40	III	3b
51	35	<40	III	3b
52	35	<40	III	3b
53	35	<40	III	3b
54	35	<40	III	3b
55	35	<40	III	3b
56	35	<40	III	3b
57	35	<40	III	3a
58	35	<40	III	3a
59	35	<40	III	3b
60	35	<40	III	3b
61	35	<40	III	3b
62	35	<40	III	3b
63	35	<40	III	3b
64	35	<40	III	3b
65	35	<40	III	3b
66	35	<40	III	3a
67	35	<40	III	3b
68	35	<40	III	3b
69	35	<40	III	3b
70	35	<40	III	3b
71	35	<40	III	3b

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.