

PAP/2023/0071



Agricultural Land Classification (ALC) Report

Land at Nailcote Farm, Fillongley

February 2023

Enviromena

Reference: 221105.R.003

NORTH WARWICKSHIRE
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**PLANNING & DEVELOPMENT
DIVISION**



Agricultural Land Classification (ALC) Report


Land at Nailcote Farm, Fillongley

Client: Enviromena

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1. Scope & Objectives

The Services	Agricultural Land Classification (ALC) Report		
The Client	Enviromena		
Appointment Details	The Services have been carried out in accordance with the Proposal dated 1 November 2022 and REL's Terms and Conditions of Engagement, (together " the Agreement ") as accepted by the Client on 1 November 2022.		
Site Name	Land at Nailcote Farm		
Site Address	Fillongley, Coventry, CV7 8DW (" the Property ")		
Proposed Use	It is understood that the site is to be developed for a solar array.		
Planning Application	None currently available for viewing (North Warwickshire Borough Council planning portal).		
Information Sources (Where appropriate documents are contained in Appendix II with data extracts provided and summarised within pertinent sections of this report. List not exhaustive)	Online Source	Magic Web Mapping Service, DEFRA, 2022. British Geological Survey (BGS) Database and Mapping. BGS Geoindex Web Mapping Service. BGS 1: 50,000 scale Provisional Series, Geological Map, England and Wales, Sheet 87 (Barnsley), available on the BGS map portal. Ministry of Agriculture, Fisheries and Food (MAFF), Post-1988 Agricultural Land Classification Surveys Database and Mapping. Google Aerial Imagery. National Library of Scotland Historical Ordnance Survey England and Wales, 1855-1956 Maps.	
	Documentation Source	Soil Classification for Soil Survey, Monographs on Soil Survey, Butler, B E (1980), Clarendon Press, Oxford. Soil Survey Field Handbook, Describing and Sampling Soil Profiles, Soil Survey of England and Wales, Technical Monograph No. 5, 1976. Meteorological Office (Met Office), 1989, Climatological Data for Agricultural Land Classification – Gridpoint Datasets of Climatic Variables, at 5km intervals, for England and Wales. MAFF, 1988, Agricultural Land Classification of England and Wales – Revised Guidelines and Criteria for Grading the Quality of Agricultural Land. Soils and their use in Midland and Western England, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map.	
	Previous Reports	No previous reports, including Post-1988 ALC surveys, are available for the site.	
	Site Works	The site works were undertaken by REL over 21 and 22 November 2022.	
	Additional Information	Site Specific Flooding Information	Site specific flooding information was provided by the landowner to include in consideration of the flood assessment. This information has been used to provide additional information for the flood risk limitation assessment.

2. Site Details

National Grid Ref.	Approximate centre of site: 427625, 286035
Ground Level Topography	Average for site: c.138m AOD.
Site Area	66 hectares.
Usage	Majority in agricultural rotation for crop, with some land in grass for non-agricultural use.
Location	The subject site is located c.850m south of Fillongley village centre and c.9.20km northwest of Coventry city centre.

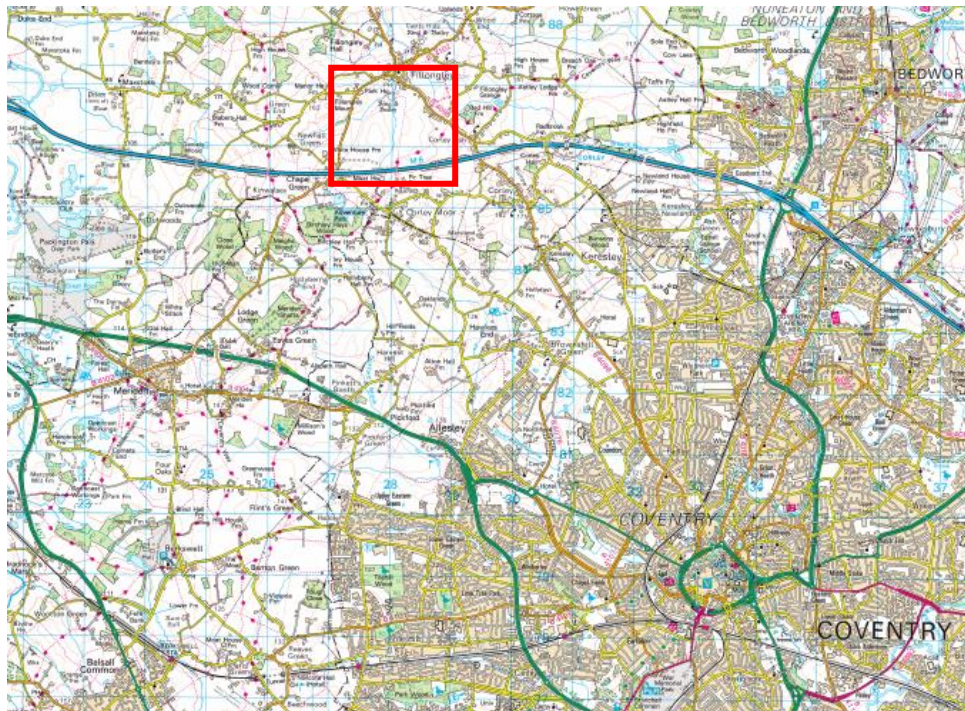


Figure 1: Approximate Site Location, highlighted in red

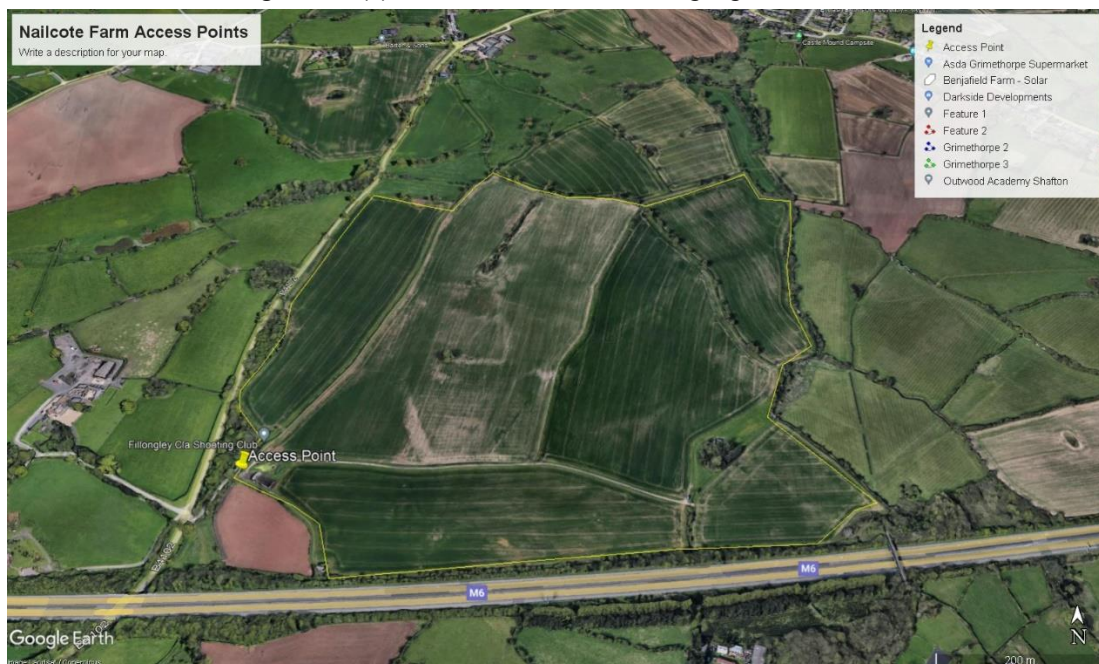


Figure 2: Site Boundaries, defined in yellow.

Current Site Description and Activities	The subject site comprises mainly agricultural fields which are currently in use for arable crop (including silage, based on observations made during the site visit).
Surrounding land uses	Surrounding land uses comprise mainly agricultural fields interspersed with residential properties and farms.
Site History	From earliest mapping dated 1885, the site is shown as agricultural land.
Current Grading	The site is currently mapped as Grade 3 on the provisional 1: 250,000 scale ALC map (MAFF, 1983).

3. Methodology

Desk Study

An initial desk-based study has been undertaken to provide a reconnaissance of the general site characteristics, including soil type(s) and agricultural classification, using published data sources.

Where available, Post-1988 ALC Surveys (undertaken at varying scales and levels of detail, ranging from 1:5,000 to 1:50,000 scale) have been consulted. Surveys included on this map provide the most detailed and up to date ALC grading following surveys between 1989 and 1999 by MAFF (now part of DEFRA).

Climatological data provided by the Met Office has been used to determine the overriding agroclimatic site limitations, using interpolated values based on the central point of the site.

Intrusive Soil Survey

The intrusive soil survey comprised at least one hand auger boring per 1 ha to a depth of 1.20m below ground level (where possible) as per the guidance. These were undertaken to examine the soil profiles, using standard soil survey methods.

In addition, to determine subsoil structure, at least one pit excavation per soil type has been conducted.

ALC Grade Assessment

All factors have been considered, including those which pose no limitation on the ALC grading for the site.

Using the information collected during the site survey and the MAFF ALC guidance documents, an ALC grade was then determined for the site (**Appendix I**). A brief overview of relevant terminology is included in **Appendix V**.

4. Desk Based Reconnaissance

Prior to the intrusive site investigation, a review of available desk-based information was undertaken. Pertinent information has been summarised below.

Climate Data

Using the climatological data set (Met Office, 1989) the following information (**Table 1**) has been calculated for the site. Calculations comprised altitude adjustment and interpolation, using the formula presented within the data set.

Table 1: Summary of Agroclimatic Data for the Site

Land at Nailcote Farm (Site Centre Grid Reference: 427606, 286071)		
Average Annual Rainfall (mm)	AAR	702.75
Accumulated Temperature (°C)	ATO	1330.39
Field Capacity Duration (Days)	FCD	158.62
Moisture Deficit Wheat (mm)	MDWHT	95.60
Moisture Deficit Potatoes (mm)	MDPOT	83.27

The site is identified to have average AAR, with below average ATO and FCD when compared to the mapped values for the area between Birmingham and Coventry (Soils and their Use in Midland and Western England, 1984).

Using the AAR and ATO values within **Table 1**, the site is considered to be Grade 1 according to climate (Figure 1 of the MAFF guidance document). Therefore, climate is considered to not be a limiting factor on the site.

Topography

The site was identified to have a gradient between 3° and 4°, therefore topography is identified to not be a limiting factor of the ALC grade of the site (Table 1, MAFF ALC Guidance 1988).

BGS Published Data

A review of BGS information has identified that no Made Ground areas are indicated across the site. The site is situated within an area where the west of the site is mainly free from superficial deposits, with a narrow area adjacent to the unnamed watercourse (drain) running through the west of the site underlain by Alluvium (clay, silt, sand and gravel). The central and eastern parts of the site are indicated to be underlain by the Thrussington Member (diamicton),

with a small area of Glacioacustrine (sand and gravel) superficial deposits on the southern boundary. The bedrock geology is indicated as the Keresley Member (sandstone).

Published Soils Data

The location of the site is shown below in **Figure 3**. The majority of the site is recorded as having soils of the Whimble 2 association (572e) across the majority of the site, described as reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. In addition, the soils are described as having associated well drained deep coarse loamy soils. On the west of the site, soils of the Bromsgrove association (541b) are mapped, described as well drained reddish coarse loamy soils mainly over soft sandstone, but deep in places. Associated fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging.

The soils within the Bromsgrove association (541b) are identified to have a risk of erosion from water.

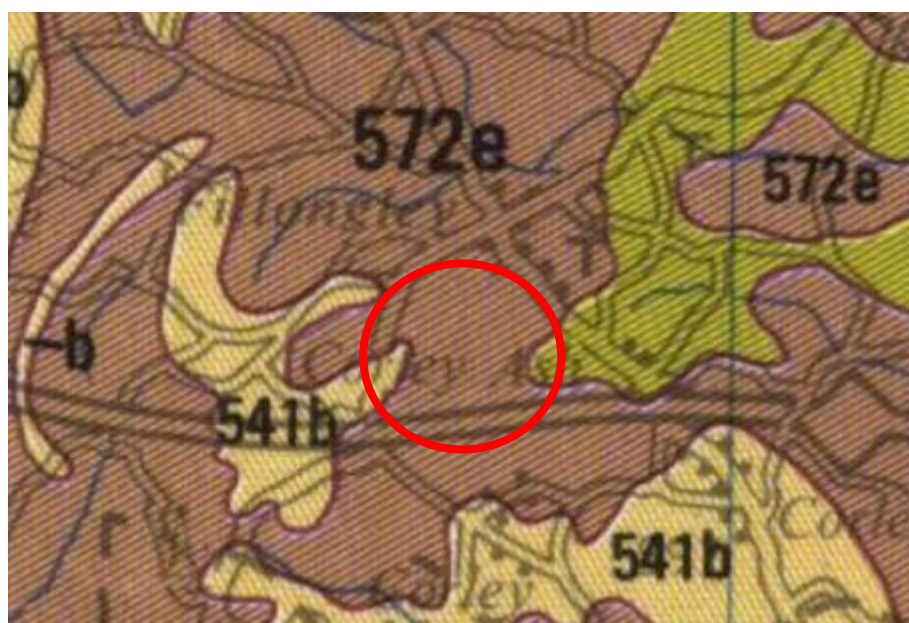


Figure 3: Soils Mapping for the Site and Surrounding Area (site location indicated in red).

Previous Reports

No previous ALC reports are available for the site.

Flood Risk Assessment

Since the ALC guidance document was published in 1988, the Environment Agency (EA) has updated the way the risk of flooding is assessed. Therefore, the terms used in the 1988 guidance (Table 2, MAFF ALC Guidance 1988) have been paired to the current EA flood risk classifications below.

Table 2: Summary of Flood Risk for the Site

EA Flood Classification	MAFF Flood Classifications
Zone 3a High Probability	Frequent
Zone 3b Functional Floodplain	Frequent
Zone 2 Medium Probability	Occasional
Zone 1 Low Probability	Rare to Very Rare

The interactive EA Flood Map for Planning on the UK Government website identifies the site to be within a Flood Zone 1, Low Probability, area (**Figure 4**).

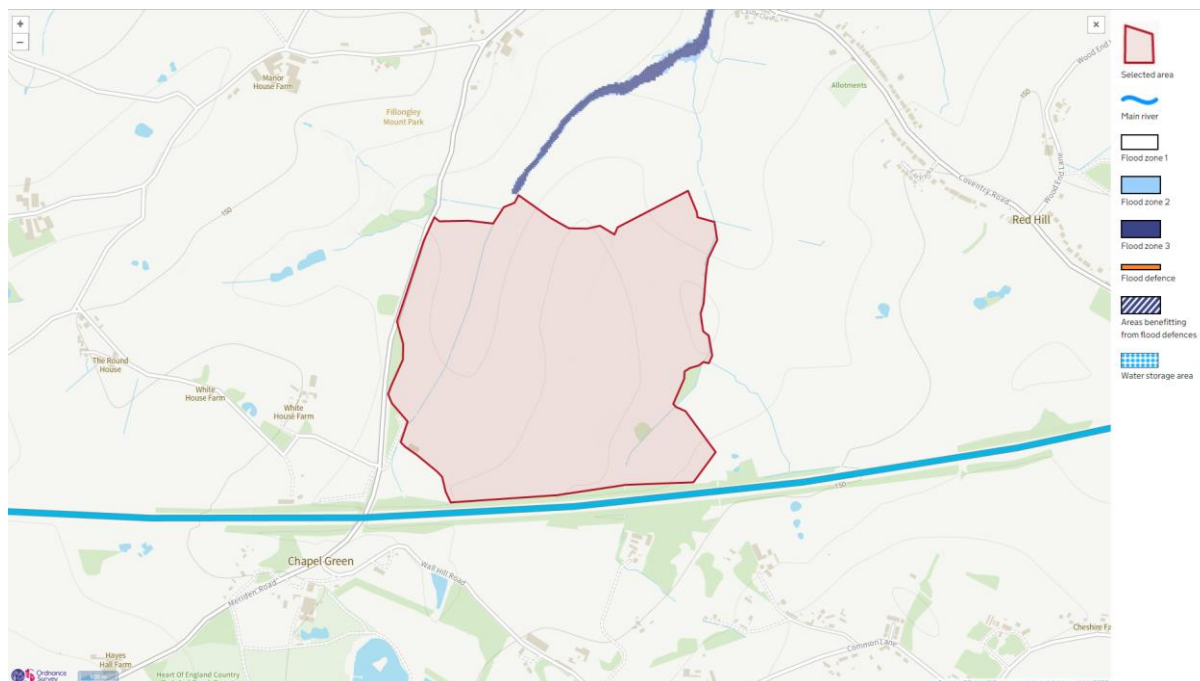


Figure 4: Flood Risk Present from Rivers for the Site (site boundary defined in red).

However, areas on the northwest of the site, associated with an unnamed watercourse present on site, are denoted as having a Medium to High risk of flooding from surface water/watercourses (**Figure 5**).

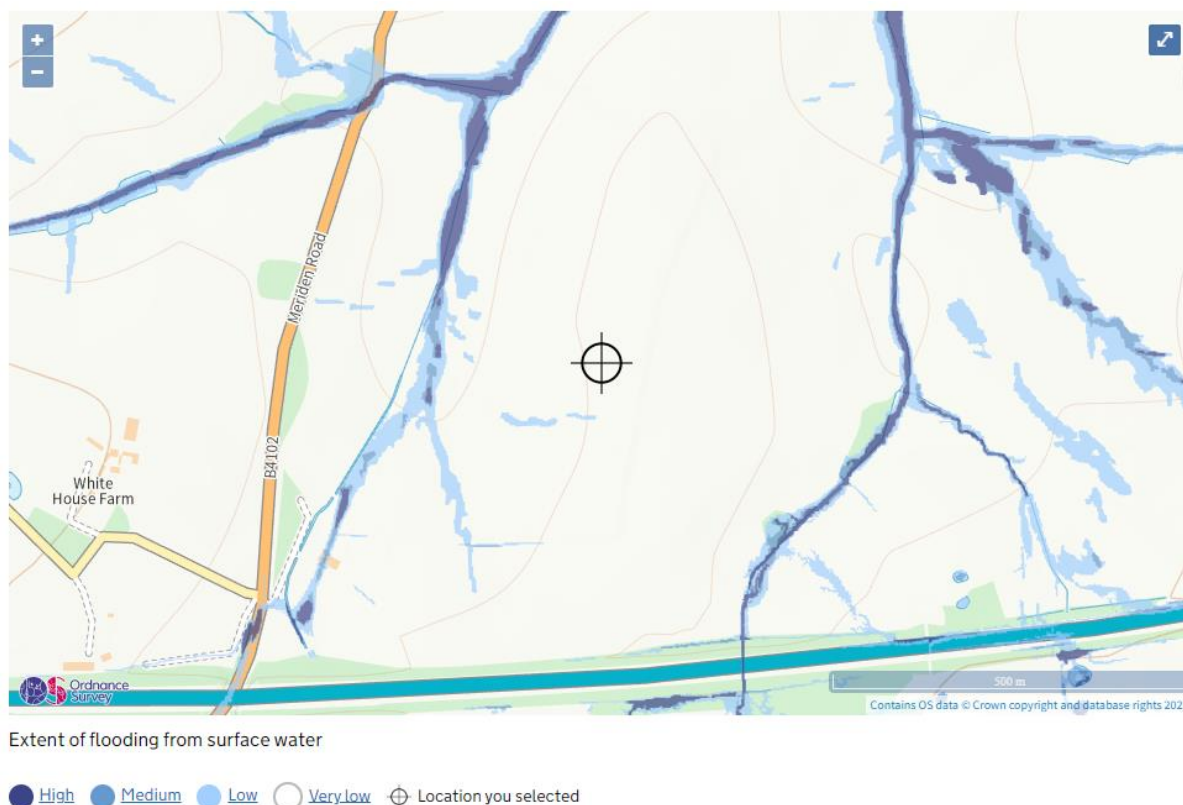


Figure 5: Flood Risk Present from Surface Water for the Site

The impact of flood risk is assessed to confirm if it can pose some limitation to the ALC grade of the site. The mapping identifies an Occasional to Frequent risk of surface water flooding on areas on the northwest and the southeastern boundary of the site (**Table 3**).

Table 3: Summary of Flood Risk from Environment Agency Data

ALC Grade	Frequency and Duration	Area Affected (ha)
1	Rare (short)	66
2	Rare (medium)	0.00
2	Occasional (short)	0.00
3a	Rare (long)	0.00
3a	Occasional (medium)	<1
3a	Frequent (short)	
3b	Occasional (long)	0.00
3b	Frequent (medium)	0.00
4	Frequent (long)	0.00

For the purpose of grading, due to the lack of detailed information relating to duration of flooding, the areas impacted by flooding are considered to be impacted on an Occasional frequency and Medium duration and a Frequent frequency and Short duration. During the site

works, the areas identified to be at risk of flooding were slightly damp/softer, in comparison to the other areas which were relatively dry.

Site specific information has been provided by the landowner to inform a site specific assessment of the flood risk using this local information. The data identifies a Frequent risk of flooding for a Medium duration during the Winter months (**Table 4**).

Table 4: Summary of Site-Specific Flood Risk Data

ALC Grade	Frequency and Duration	Area Affected (ha)
1	Rare (short)	64
2	Rare (medium)	0.00
2	Occasional (short)	0.00
3a	Rare (long)	0.00
3a	Occasional (medium)	0.00
3a	Frequent (short)	
3b	Occasional (long)	0.00
3b	Frequent (medium)	c.2.00
4	Frequent (long)	0.00

It is considered that due to the impacted areas being so small in comparison to the size of the site, the flood risk is not considered to pose enough of a limitation to the cultivation of the surrounding areas to reduce the ALC Grade outside of these discrete areas.

5. Intrusive Survey Findings

The survey, undertaken by representatives of REL in November 2022 identified Two Soil Types across the site, with the centre of the site and site western peripheries comprising Soil Type 1 and the remainder of the site comprising Soil Type 2. Generalised profiles of the Soil Types encountered are described as below (**Table 5**) however, please note some localised variations were recorded. Complete soil logs are provided in **Appendix II** and photographs of the surveyed soils are presented in **Appendix III**.

Table 5: Summary of Soils Identified on Site

	Depth (cm)	Texture	Colour	Stones (%)	Mottles	Structure
Soil Type 1	0-35	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	35-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
Soil Type 2	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic

The general profile for each of the soil types identified on the Site has been used to assess the Wetness Class (WC) of each Soil Type. The general profile is reflective of the findings in the soil pit associated with the Soil Type identified on site. The assessment process and results of the in-field wetness assessment is provided within **Table 5** Error! Not a valid bookmark self-reference. below.

Table 6: Wetness Class assessment for Soil Types 1 and 2 encountered on site

Parameters (Figure 6, MAFF) Soil Type	Findings									
	Type 1					Type 2				
Disturbed	Yes ✓ No					Yes ✓ No				
FCD	158.62					158.62				
SPL < 80cm	Yes ✓ No					Yes No				
Justification	N/A					At a depth of 20cm, the SPL was identified to be present due to the following characteristics: Heavy Clay Loam (HCL) medium angular blocky structure weakly developed less than 0.50% biopores greater than 0.50 mm diameter evidence of wetness in the layer; ochreous mottles				
Soil Type	Peat Red ✓ Other					Peat Red ✓ Other				
Gleyed	Yes ✓ No					Yes No				
Depth to Gleying	<40cm	>40cm	<70cm	>70cm		✓ <40cm	>40cm	<70cm	>70cm	
Justification	N/A					Many Medium Ochreous and Grey Mottles from 20cm with pale ped face colours dominant				
Resulting Reference	Figure 7	Figure 8	Table 12	Table 13	✓ NA	✓ Figure 7	Figure 8	Table 12	Table 13	NA
Wetness Class	I					IV				

Notes: This Table follows the flow chart of Figure 6 of the MAFF ALC guidance to identify the wetness classification per Soil Type.

Using the MAFF 1988 Agricultural Land Classification of England and Wales – Revised guidelines, the above Wetness Classes, combined with the texture of the top 25cm results in the following ALC Grades:

Soil Type 1 –Sandy Clay Loam topsoil, Wetness Class I, 158.62 Field Capacity Days, results in **Grade 1**.

Soil Type 2 – Sandy Clay Loam topsoil, Wetness Class IV, 158.62 Field Capacity Days, results in **Sub Grade 3a**.

6. Conclusions and Recommendations

The ALC grading for the site area is summarised below within **Table 7**, overall findings of this assessment can be found in **Appendix IV**. The table identifies the grade of the areas of agricultural land and also provides the area of the non-agricultural land present across the site (**Appendix I**).

Table 7: ALC Classification

ALC Grade	Area (Ha)	Percentage
Grade 1	0.00	0.00%
Grade 2	16.00	24.24%
Subgrade 3a	47.10	71.37%
Subgrade 3b	2.00	3.03%
Grade 4	0.00	0.00%
Grade 5	0.00	0.00%
Non-Agricultural	0.90	1.36%
Total	66.00	100%
Total BMV	0.00	95.61%

The site has been identified to comprise two soil types, summarised in **Table 5**.

Soil Type 1 – Droughtiness Limitation

The combination of the topsoil texture (Sandy Clay Loam) and the number of Field Capacity Days (158.62) results in **ALC Grade 2** for Type 1 soils with a Droughtiness limitation for Wheat on these soils.

Soil Type 2 – Wetness Limitations

The combination of the topsoil texture (Sandy Clay Loam), Wetness Class (IV) and the number of Field Capacity Days (158.62) results in **ALC Grade 3a** for Type 2 soils.

Flood Risk Limitation

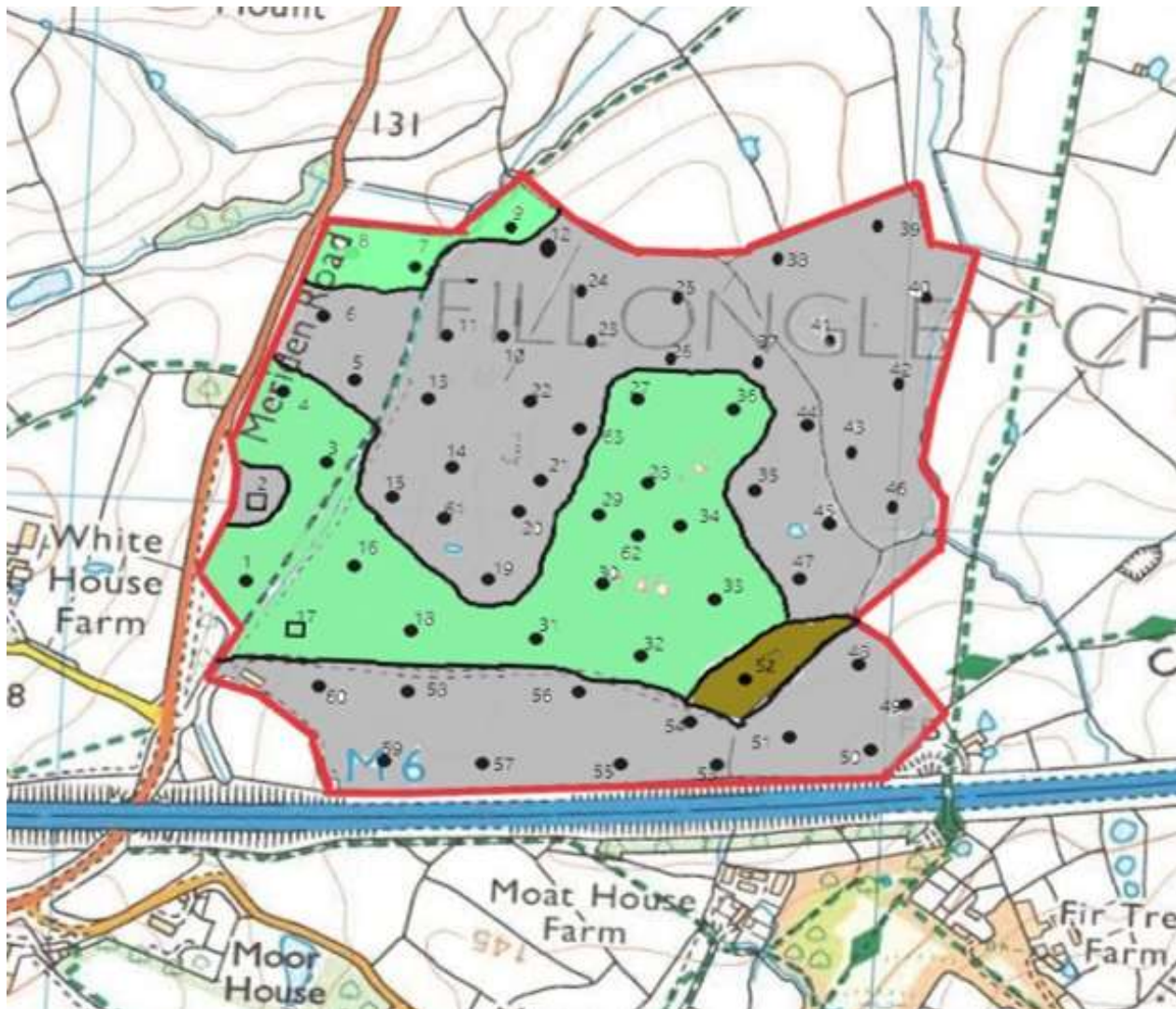
Discrete areas of the site have been identified as having a flood risk which results in **ALC Grade 3b** for these areas.

Overall Site ALC Grade and Conclusions

The soils on the subject site are identified to be 24.24% ALC Grade 2 and 71.37% ALC Grade 3a, with 3.03% ALC Grade 3b and the remaining area classified as non-agricultural land.

APPENDIX I

SITE PLANS



DO NOT SCALE

Key

- 1 Auger Location
- 1 Soil Pit
- Soil Type 1
- Soil Type 2
- Non-Agricultural Land

CLIENT:
Environmena

PROJECT:
Land at Nailcote Farm, Fillongley

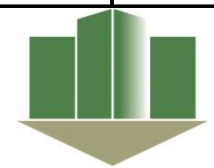
TITLE:
Investigation Locations and Soil Types

DESIGN / DRAWN:
LM

DATE:
November 2022

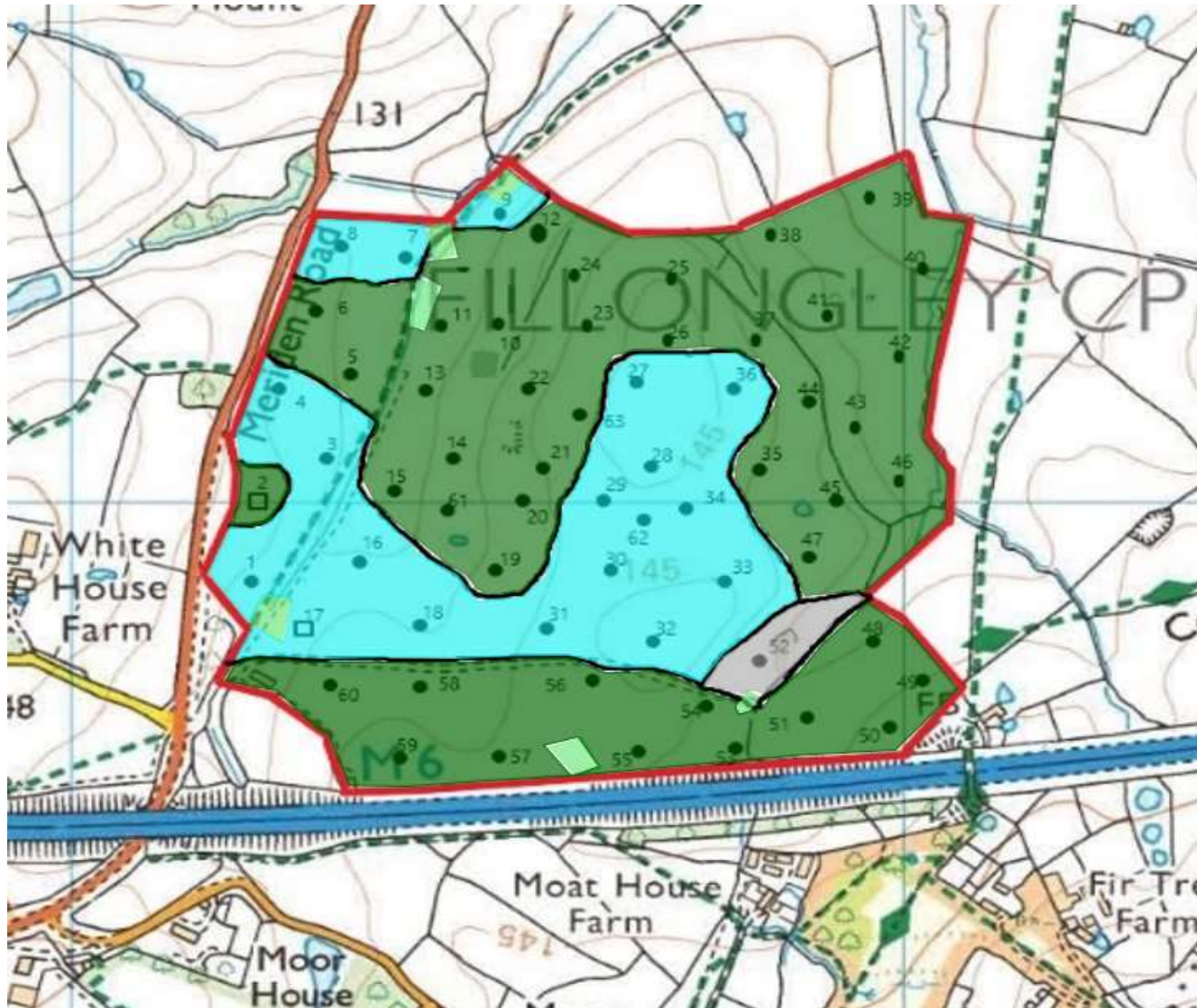
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221105

DRAWING NO:
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DO NOT SCALE

Key

- Grade 2
- Grade 3a
- Grade 3b
- Non-Agricultural Land

CLIENT:

Environmena

PROJECT:

Land at Nailcote Farm, Fillongley

TITLE:

ALC Grades

DESIGN / DRAWN:

LM

DATE:

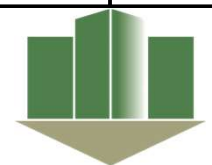
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APPENDIX II

SITE SURVEY LOGS

BH No.	Depth (cm)	Texture	Colour	Stones (%)	Mottles	Structure
1	0-35	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	35-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
2	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
Pit 2	0-15	Sandy Clay Loam (SCL)	Dark brown (10YR 3/3)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/2)	Moderate Medium Sub Angular Blocky
	15-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-35	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
3	0-32	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	15	No	Moderate Medium Sub Angular Blocky
	32-60	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	60-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
4	0-36	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	15	No	Moderate Medium Sub Angular Blocky
	36-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
5	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Brown (7.5YR 5/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
6	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-30	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	30-120	Clay (C)	Reddish brown (5YR 4/3)	5	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
7	0-30	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	30-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	5	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
8	0-30	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	30-70	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	70-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
9	0-30	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	15	No	Moderate Medium Sub Angular Blocky
	30-70	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	35	No	Weak Coarse Sub Angular Blocky
	70-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	15	No	Weak Coarse Angular Blocky
10	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Reddish brown (5YR 4/4)	5	Many Medium Grey (2.5Y 6/2)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
11	0-22	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	22-30	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	30-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
12	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/2)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
13	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	15	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic


14	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Sub Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
15	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-30	Heavy Clay Loam (HCL)	Brown (7.5YR 5/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	30-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
16	0-30	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	30-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	5	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
Pit 17	0-15	Sandy Clay Loam (SCL)	Red (2.5YR 4/6)	5	No	Moderate Medium Sub Angular Blocky
	15-35	Medium Sandy Loam (MSL)	Dark yellowish brown (10YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
18	0-30	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	30-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
19	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	15	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
20	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
21	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	5	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
22	0-15	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	15-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Yellowish red (5YR 4/6)	5	Many Medium Grey (10YR 6/2)	Strong Coarse Prismatic
23	0-30	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	30-40	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	40-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
24	0-15	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	15-25	Heavy Clay Loam (HCL)	Brown (7.5YR 5/4)	15	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
25	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-30	Heavy Clay Loam (HCL)	Brown (7.5YR 5/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	30-120	Clay (C)	Reddish brown (5YR 4/3)	5	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
26	0-18	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	18-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	15	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
27	0-35	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky
	35-70	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	70-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
	0-40	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	5	No	Moderate Medium Sub Angular Blocky





57	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
58	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Moderate Coarse Prismatic
59	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Brown (7.5YR 4/3)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
60	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
61	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	15	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic
62	0-35	Sandy Clay Loam (SCL)	Dark reddish brown (5YR 3/3)	15	No	Moderate Medium Sub Angular Blocky
	35-65	Medium Sandy Loam (MSL)	Dark reddish brown (2.5YR 3/4)	15	No	Weak Coarse Sub Angular Blocky
	65-120	Coarse Loamy Sand (CLS)	Red (2.5YR 4/6)	5	No	Weak Coarse Angular Blocky
63	0-20	Sandy Clay Loam (SCL)	Dark brown (7.5YR 3/2)	5	Many Medium Ochreous and Few Fine Grey (2.5YR 5/6 and 7.5YR 6/1)	Moderate Medium Sub Angular Blocky
	20-25	Heavy Clay Loam (HCL)	Dark brown (7.5YR 3/4)	5	Many Medium Ochreous and Grey (5YR 5/8 and 10YR 6/1)	Friable Weak Medium Angular Blocky
	25-120	Clay (C)	Reddish brown (5YR 4/3)	0	Many Medium Ochreous and Grey (2.5YR 5/6 and 10YR 7/2)	Strong Coarse Prismatic

APPENDIX III

SITE SURVEY PHOTOGRAPHS

Photograph Number	Photograph Description	Photograph
1.	<p>Land at Nailcote Farm General view of the west of the site.</p>	
2.	<p>Land at Nailcote Farm General view of the centre of the site.</p>	
3.	<p>Land at Nailcote Farm General view of the east of the site.</p>	

Photograph Number	Photograph Description	Photograph
4.	<p>Land at Nailcote Farm</p> <p>General view of the southeast of the site with the area of Non-Agricultural Land shown. The Non-Agricultural Land was in use as a clay pigeon shooting area.</p>	
5.	<p>Land at Nailcote Farm</p> <p>General view of the southwest of the site.</p>	
6.	<p>Land at Nailcote Farm</p> <p>General view from the southwest of the site looking towards the north.</p>	

<p>7.</p>	<p>Land at Nailcote Farm Profile of Soil Type 1.</p>	
<p>8.</p>	<p>Land at Nailcote Farm Profile of Soil Type 2.</p>	
<p>9.</p>	<p>Land at Nailcote Farm Pit 17 – Soil Type 1.</p>	
<p>10.</p>	<p>Land at Nailcote Farm Pit 17 – Soil Type 1; structure of subsoil.</p>	

11.	Land at Nailcote Farm Pit 2 – Soil Type 2.	
12.	Land at Nailcote Farm Pit 2 – Soil Type 2; structure of subsoil.	

APPENDIX IV

SUMMARY OF FINDINGS

Job Name:	Nailcote Farm, Fillongley
Job Number:	221105
Date:	30/11/2022
Completed By:	Lauren Manning



Site Altitude:	134
Centre Grid Ref:	4276 2860

AAR	702.75
ATO	1330.39
FCD	158.62
MDMWHT	95.60
MDMPOT	83.27

	Soil Type 1	Soil Type 2	Soil Type 3
AP WHT	122.91	133.48	0.00
MB WHT	27.31	37.88	-95.60
AP POT	101	109.475	0
MB POT	17.73	26.21	-83.27

Site Limitations Summary			
	Soil Type 1	Soil Type 2	Soil Type 3
Wetness Class	I	IV	
Wetness Grading	1	3a	
Droughtiness Wheat	2	1	
Droughtiness Potato	1	1	
Gradient Limitaion	1	1	
Soil Depth Limitation	1	1	
Stoniness Limitation	1	1	
	Overall		
Site Climatic Limitation	1	1	
Flooding Limitation	1	1	
Overall Grade	2	3a	

APPENDIX V

TERMINOLOGY

Agricultural Land Classification (ALC)

The Agricultural Land Classification (ALC) provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways: they may affect the range of crops which can be grown; the level of yield; the consistency of yield and the cost of obtaining it. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, but the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

These factors form the basis for classifying agricultural land into one of five grades (with Grade 3 land divided into Subgrades 3a and 3b since the guidelines were revised in 1988), ranked from Excellent (Grade 1) to Very Poor (Grade 5). ALC grading is determined using the Ministry of Agriculture Food and Fisheries (MAFF) '*Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*'.

Definition of Agricultural Land Classification Grades

ALC Grade	Description
Grade 1	Excellent quality agricultural land No or very minor limitations to agricultural use.
Grade 2	Very good quality agricultural land Minor limitation which affect crop yield, cultivation or harvesting.
Subgrade 3a (pre-1988 Grade 3)	Good quality agricultural land Capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
Subgrade 3b (pre-1988 Grade 3)	Moderate quality agricultural land Capable of producing moderate yields of a narrow range of arable crops and/or lower yields of a wider range of crops.
Grade 4	Poor quality agricultural land Severe limitations which significantly restrict the range of crops and/or levels of yield.
Grade 5	Very poor quality agricultural land Very severe limitations which restrict use to permanent pasture or rough grazing.

Best and Most Versatile (BMV) Agricultural Land

The National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2012) defines Best and Most Versatile (BMV) agricultural land as land of Excellent (ALC Grade 1), Very Good (Grade 2) and Good (Grade 3a) agricultural quality. BMV land is provided a degree of protection against development within planning policy, with most Local Plans including specific policies which refer to the protection of BMV agricultural land.

Non-BMV agricultural land, i.e. Moderate, Poor and Very Poor quality agricultural land is designated subgrade 3b or Grades 4 and 5 respectively, and is restricted to a narrower range

of agricultural uses. Limited to no protection is provided against development on this grade land within planning policy.

Soil Series

Soil series is the lowest categorical level used for classifying soils in England and Wales. According to the Soil Survey of England and Wales 1984:

“Soil series are defined using a combination of three main properties, the broad type of parent material present (substrate type), the texture of the soil material (textural grouping) and the presence or absence of material with a distinctive mineralogy.”

Higher categories are: Major Soil Group, Soil Group, and Soil Subgroup, which are not explicitly used in this report.

Soil Association

A soil association is a geographic grouping of soils identified by the name of the most frequently occurring soil series and by the combination of additional soil series.

Gleying

Gleying is the process of iron reduction (opposite to oxidation) in soils from ferric (reddish in colour) to ferrous compounds (grey or colourless), by microorganisms or by-products of decomposing organic matter. Gleying occurs in areas devoid of oxygen when the soil is waterlogged. The resulting mottling (spots or blotches of colour) can therefore be used to identify the existence of a Slowly Permeable Layer (SPL); as defined within the MAFF ALC guidance.