

**LAND AT
CLIMPING, WEST SUSSEX**

**AGRICULTURAL LAND
CLASSIFICATION**

January 2019





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1 INTRODUCTION

Purpose

- 1.1 This report sets out the findings of an agricultural land classification of approximately 5 hectares of agricultural land lying between Gravett's Bridge and Gravett's Lane.

The Site

- 1.2 The site is part of a single field, which is cultivated and ready for sowing.

The Agricultural Land Classification System

- 1.3 The Agricultural Land Classification (ALC) system 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 ALC system divides agricultural land into five grades. Grade 1 of the ALC is described as being of excellent quality and Grade 5, at the other end of the scale, is described as being of very poor quality. The current guidelines and criteria for ALC were published by the Ministry of Agriculture, Fisheries and Food (MAFF) in 1988 ('Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land'¹).
- 1.4 Agricultural land within Grades 1, 2 and Subgrade 3a of the ALC is considered the "**best and most versatile agricultural land**" (BMV) as defined in the National Planning Policy Framework (2018). This is land which is most flexible, productive and efficient in response to inputs. Further details of the ALC system and policy implications are set out by Natural England in its Technical Information Note 049, given as **Appendix KCC1**.

¹ Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land', October, 1988. The Ministry of Agriculture, Fisheries and Food (MAFF) was incorporated within the Department for Environment, Food and Rural Affairs (Defra) in June 2001

2 FACTORS AFFECTING LAND QUALITY

- 2.1 The site was surveyed in December 2018 and has been graded according to the current Defra guidelines and criteria (MAFF 1988). Five points were examined with spade and auger over the site and a single profile was excavated and described to look in more detail at the soils covering this piece of land. The auger locations of the soil survey are shown on **Plan KCC2670/01**.

Climate

- 2.2 Climate affects the grading of land through the assessment of an overall climatic limitation and also through the interaction with soils.
- 2.3 The Met Office (1989) provides the key climatic variables for this site. The figures quoted in the table below are from a point roughly in the centre of the site.

Table 1: Climate and altitude data

Grid reference	SU 9870 0140
Altitude	4m AOD
Average annual rainfall	733mm
Accumulated temperature >0°C (Jan-June)	1544 degree days
Moisture deficit, wheat	122 mm
Moisture deficit, potatoes	120 mm
Field capacity period	150 days

- 2.4 The climate of this area is typical of a position on the Sussex Coastal Plain with moderate amounts of rainfall and high temperatures. There is a high plant-water demand reflecting the high summer temperatures and the field capacity period, that period when soils are potentially wet, at 150 days, accords with the moderate rainfall amounts of the area. The combination of rainfall and temperature imposes no direct **climatic limitation** upon land quality over this ground.
- 2.5 The field is about 4m AOD and there is very little relief. **Gradient** has no negative impact and is not a limitation to land quality.
- 2.6 The soils have a very high available water content and hold sufficient water to sustain plant growth in most season. **Soil drought** is, therefore, not a limitation to land quality.
- 2.7 The soils in this low lying area are often affected by a fluctuating groundwater table which will be within about 40cm depth in the wettest periods of winter, and **soil wetness** is likely

to be limiting to land quality. The soils have a slowly permeable substrate, which also contributes to the general soil wetness of this land

Geology and Soils

- 2.8 The surface of this ground is covered with silty drift (brickearth) which supports deep water retentive soils. Detailed soil mapping (SSEW 1967) shows soils of the Park Gate series over this small area with both deep phases and shallow phases over calcareous materials present.

Relief and Drainage

- 2.9 The ground is very gently sloping towards the south with drainage to the Ryebank Rife, which forms the southern limits of the survey area. The principal movement of excess water is mainly by vertical flow to a relatively shallow water table, although high groundwater in winter will favour conditions for surface flow.

3 AGRICULTURAL LAND CLASSIFICATION

Published ALC Data

- 3.1 There is no published ALC survey data for this site.
- 3.2 Data available in the Government's Nature on the Map series for land quality shows where ALC survey data is available locally, and is set out in **Appendix KCC2**. Nearby surveys show a mix of quality, from Grade 2 to the south west, with land to the immediate south shown as being Subgrade 3b.

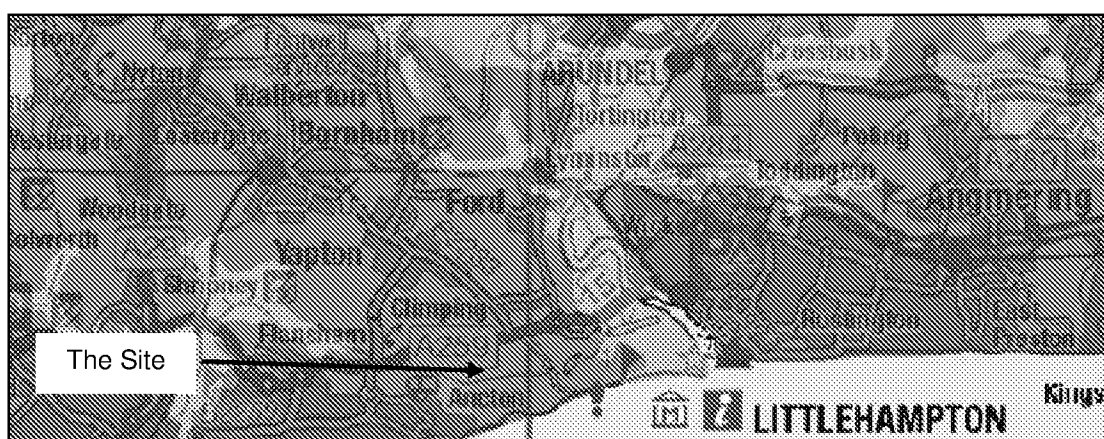
Results of ALC Survey

- 3.3 The location of the auger sample points is set out on **Plan KCC2670/01**. The site data for these points is set out in **Appendix KCC4**, and a soil profile description is given in **Appendix KCC5**.
- 3.4 **Subgrade 3a quality land** has been identified across the whole of this small site. The bulk of the soils examined are deep and virtually stoneless with weakly structured silt loam topsoils. In the recently cultivated example described below, there are few roots, but many fine fissures. The immediate silt loam subsoil is brown and strongly mottled, indicating periodic waterlogging. Structures are weakly formed and the horizon is relatively permeable, allowing excess surface water to drain vertically. The soils become heavier in texture between about 40 and 50cms depth and the subsoil is of weakly, but coarsely structured medium silty clay loam and presents a slowly permeable layer that restricts vertical drainage. The matrix is strongly mottled and there are many manganiferous conceptions and stains, which indicate a fluctuating water table.
- 3.5 The similarly textured deeper subsoil is of mottled silty clay loam with weak prismatic peds and is slowly permeable. In places the deep subsoil is of structureless chalky material derived from the underlying chalk or slip material from the higher land of the South Downs, which lie to the north.
- 3.6 The profiles described in the bulletin covering the detailed soil survey (Hodgson 1967) fit closely with the soils examined in the current survey.
- 3.7 The results are shown on **Plan KCC2670/02**.

Wider Pattern of Land Quality

- 3.8 Soils developed in Brickearth cover large areas of the low lying ground of the coastal plain (see **Appendix KCC3**). The areas dominated by freely drained profiles and those with only slight wetness (Hook (hK) and Hamble (hL) series) will be of Grade 1 and Grade 2 quality. The seasonally wet soils of the Park Gate series (Pz) have a wetness limitation and will be mainly of Subgrade 3a quality. The boundaries of the fields in which the wetter soils occur are generally marked by deep ditches and these areas will have been tile drained in the past. The wet alluvial soils, which cover broad floodplains adjacent to the streams, will have to poorest quality (Subgrade 3b and Grade 4) land and will generally be covered by permanent or long term grassland.
- 3.9 The Predictive Best and Most Versatile maps produced by Natural England show that the site lies in an area of high likelihood of bmv (>60% area bmv), in common with most of the land in the area, as shown below.

Insert 1: Predictive BMV Map



Predictive BMV Land Assessment © Defra

- High likelihood of BMV land (>60% area bmv)
- Moderate likelihood of BMV land (20 - 60% area bmv)
- Low likelihood of BMV land (<= 20% area bmv)
- Non-agricultural use
- Urban / Industrial

- 3.10 Accordingly the general land quality of the area is expected to be mostly BMV.

4 REFERENCES

HODGSON, J.M. (1967) Soils of the West Sussex Coastal Plain) Bull. Soil Survey GT. Br.

MAFF (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.

METEOROLOGICAL OFFICE (1989). Climatological data for Agricultural Land Classification.

SSEW (1967) 1:25,000 scale soil map: sheet SU09 (Littlehampton)

APPENDIX KCC1
Natural England TIN 049

Agricultural Land

Classification: protecting the best and most versatile agricultural land

Most of our land area is in agricultural use. How this important natural resource is used is vital to sustainable development. This includes taking the right decisions about protecting it from inappropriate development.

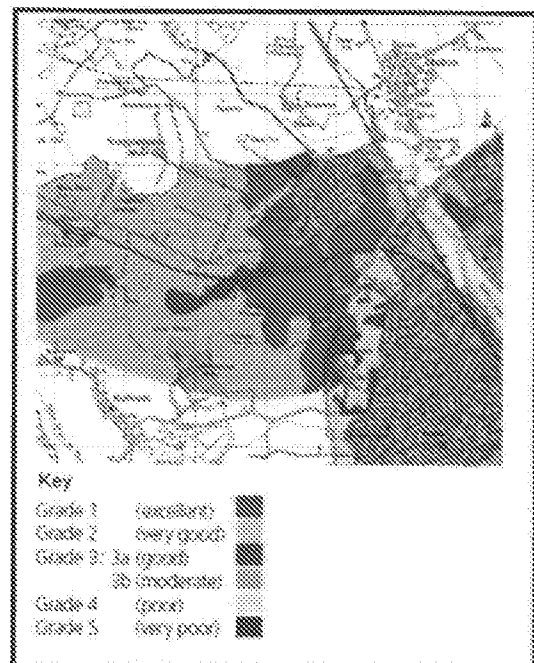
Policy to protect agricultural land

Government policy for England is set out in the National Planning Policy Framework (NPPF) published in March 2012 (paragraph 112). Decisions rest with the relevant planning authorities who should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. The Government has also re-affirmed the importance of protecting our soils and the services they provide in the Natural Environment White Paper *The Natural Choice: securing the value of nature* (June 2011), including the protection of best and most versatile agricultural land (paragraph 2.35).

The ALC system: purpose & uses

Land quality varies from place to place. The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. It helps

underpin the principles of sustainable development.



Agricultural Land Classification - map and key

Second edition 19 December 2012

www.naturalengland.org.uk



Agricultural Land Classification: protecting the best and most versatile agricultural land

The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a by policy guidance (see Annex 2 of NPPF). This is the land which is most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals. Current estimates are that Grades 1 and 2 together form about 21% of all farmland in England; Subgrade 3a also covers about 21%.

The ALC system is used by Natural England and others to give advice to planning authorities, developers and the public if development is proposed on agricultural land or other greenfield sites that could potentially grow crops. The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended) refers to the best and most versatile land policy in requiring statutory consultations with Natural England. Natural England is also responsible for Minerals and Waste Consultations where reclamation to agriculture is proposed under Schedule 5 of the Town and Country Planning Act 1990 (as amended). The ALC grading system is also used by commercial consultants to advise clients on land uses and planning issues.

Criteria and guidelines

The Classification is based on the long term physical limitations of land for agricultural use. Factors affecting the grade are climate, site and soil characteristics, and the important interactions between them. Detailed guidance for classifying land can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988):

- **Climate:** temperature and rainfall, aspect, exposure and frost risk.
- **Site:** gradient, micro-relief and flood risk.
- **Soil:** texture, structure, depth and stoniness, chemical properties which cannot be corrected.

The combination of climate and soil factors determines soil wetness and droughtiness.

Wetness and droughtiness influence the choice of crops grown and the level and consistency of yields, as well as use of land for grazing livestock. The Classification is concerned with the inherent potential of land under a range of farming systems. The current agricultural use, or intensity of use, does not affect the ALC grade.

Versatility and yield

The physical limitations of land have four main effects on the way land is farmed. These are:

- the range of crops which can be grown;
- the level of yield;
- the consistency of yield; and
- the cost of obtaining the crop.

The ALC gives a high grading to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which requires lower inputs, but also takes into account ability to produce consistently high yields of a narrower range of crops.

Availability of ALC information

After the introduction of the ALC system in 1966 the whole of England and Wales was mapped from reconnaissance field surveys, to provide general strategic guidance on land quality for planners. This Provisional Series of maps was published on an Ordnance Survey base at a scale of One inch to One Mile in the period 1967 to 1974. These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended and can be downloaded from the Natural England website. This data is also available on 'Magic', an interactive, geographical information website <http://magic.defra.gov.uk/>.

Since 1976, selected areas have been re-surveyed in greater detail and to revised

Agricultural Land Classification: protecting the best and most versatile agricultural land

guidelines and criteria. Information based on detailed ALC field surveys in accordance with current guidelines (MAFF, 1988) is the most definitive source. Data from the former Ministry of Agriculture, Fisheries and Food (MAFF) archive of more detailed ALC survey information (from 1988) is also available on <http://magic.defra.gov.uk/>. Revisions to the ALC guidelines and criteria have been limited and kept to the original principles, but some assessments made prior to the most recent revision in 1988 need to be checked against current criteria. More recently, strategic scale maps showing the likely occurrence of best and most versatile land have been prepared. Mapped information of all types is available from Natural England (see *Further information* below).

New field survey

Digital mapping and geographical information systems have been introduced to facilitate the provision of up-to-date information. ALC surveys are undertaken, according to the published Guidelines, by field surveyors using handheld augers to examine soils to a depth of 1.2 metres, at a frequency of one boring per hectare for a detailed assessment. This is usually supplemented by digging occasional small pits (usually by hand) to inspect the soil profile. Information obtained by these methods is combined with climatic and other data to produce an ALC map and report. ALC maps are normally produced on an Ordnance Survey base at varying scales from 1:10,000 for detailed work to 1:50 000 for reconnaissance survey.

There is no comprehensive programme to survey all areas in detail. Private consultants may survey land where it is under consideration for development, especially around the edge of towns, to allow comparisons between areas and to inform environmental assessments. ALC field surveys are usually time consuming and should be initiated well in advance of planning decisions. Planning authorities should ensure that sufficient detailed site specific ALC survey data is available to inform decision making.

Consultations

Natural England is consulted by planning authorities on the preparation of all development

plans as part of its remit for the natural environment. For planning applications, specific consultations with Natural England are required under the Development Management Procedure Order in relation to best and most versatile agricultural land. These are for non agricultural development proposals that are not consistent with an adopted local plan and involve the loss of twenty hectares or more of the best and most versatile land. The land protection policy is relevant to all planning applications, including those on smaller areas, but it is for the planning authority to decide how significant the agricultural land issues are, and the need for field information. The planning authority may contact Natural England if it needs technical information or advice.

Consultations with Natural England are required on all applications for mineral working or waste disposal if the proposed afteruse is for agriculture or where the loss of best and most versatile agricultural land agricultural land will be 20 ha or more. Non-agricultural afteruse, for example for nature conservation or amenity, can be acceptable even on better quality land if soil resources are conserved and the long term potential of best and most versatile land is safeguarded by careful land restoration and aftercare.

Other factors

The ALC is a basis for assessing how development proposals affect agricultural land within the planning system, but it is not the sole consideration. Planning authorities are guided by the National Planning Policy Framework to protect and enhance soils more widely. This could include, for example, conserving soil resources during mineral working or construction, not granting permission for peat extraction from new or extended mineral sites, or preventing soil from being adversely affected by pollution. For information on the application of ALC in Wales, please see below.

Agricultural Land Classification: protecting the best and most versatile agricultural land

Further information

Details of the system of grading can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

Please note that planning authorities should send all planning related consultations and enquiries to Natural England by e-mail to consultations@naturalengland.org.uk. If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Natural England
Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
Cheshire
CW1 6GJ

ALC information for Wales is held by Welsh Government. Detailed information and advice is available on request from Ian Rugg (ian.rugg@wales.gsi.gov.uk) or David Martyn (david.martyn@wales.gsi.gov.uk). If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
Ceredigion
SY23 3UR

Natural England publications are available to download from the Natural England website: www.naturalengland.org.uk.

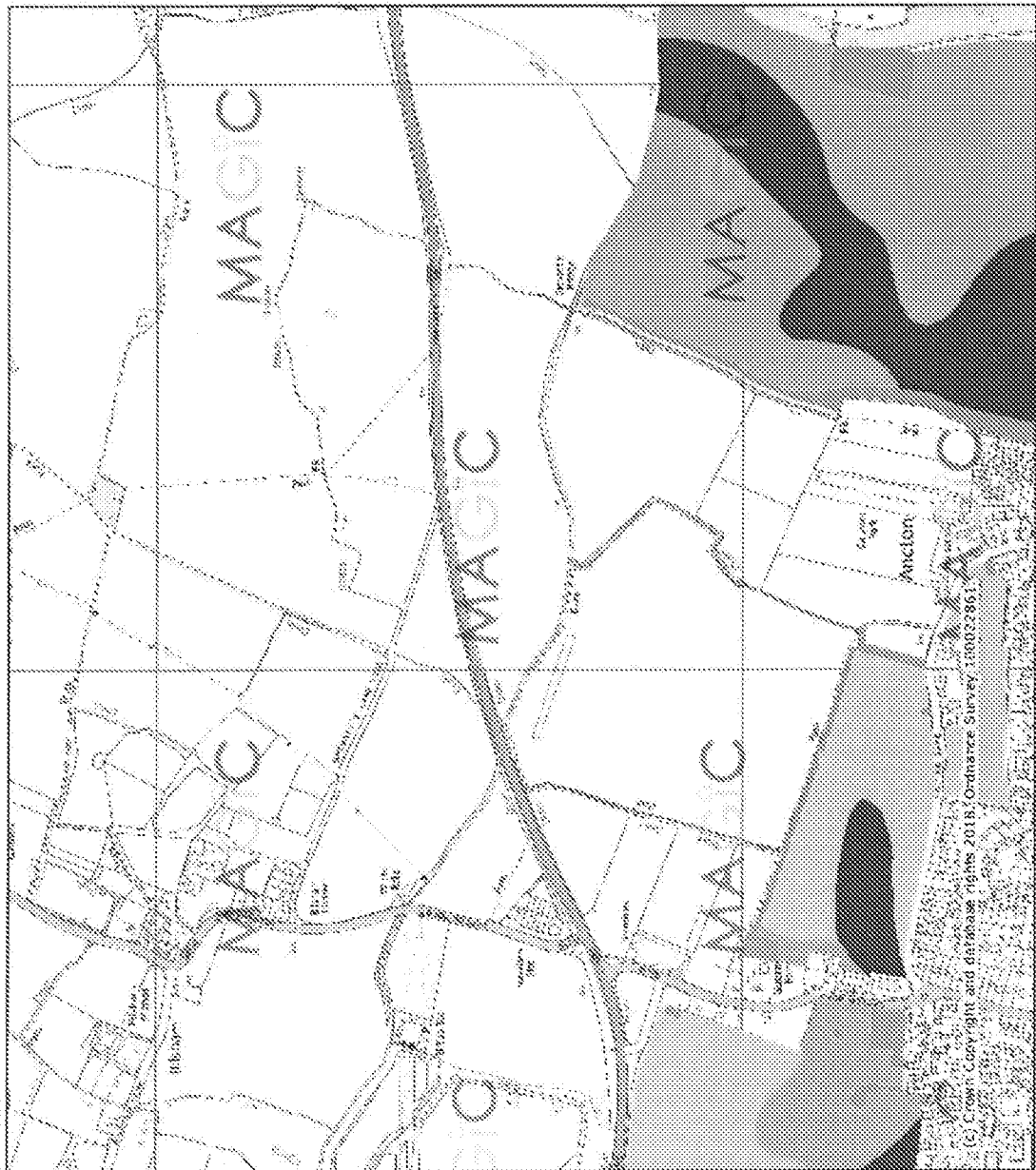
For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

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APPENDIX KCC2
Extract from Nature on the Map
Showing ALC Locally



APPENDIX KCC3

Soil Map Showing Area Around Yapton

Soil Map Showing Area Around Yapton



Appendix KCC4
Site Data

Site Data

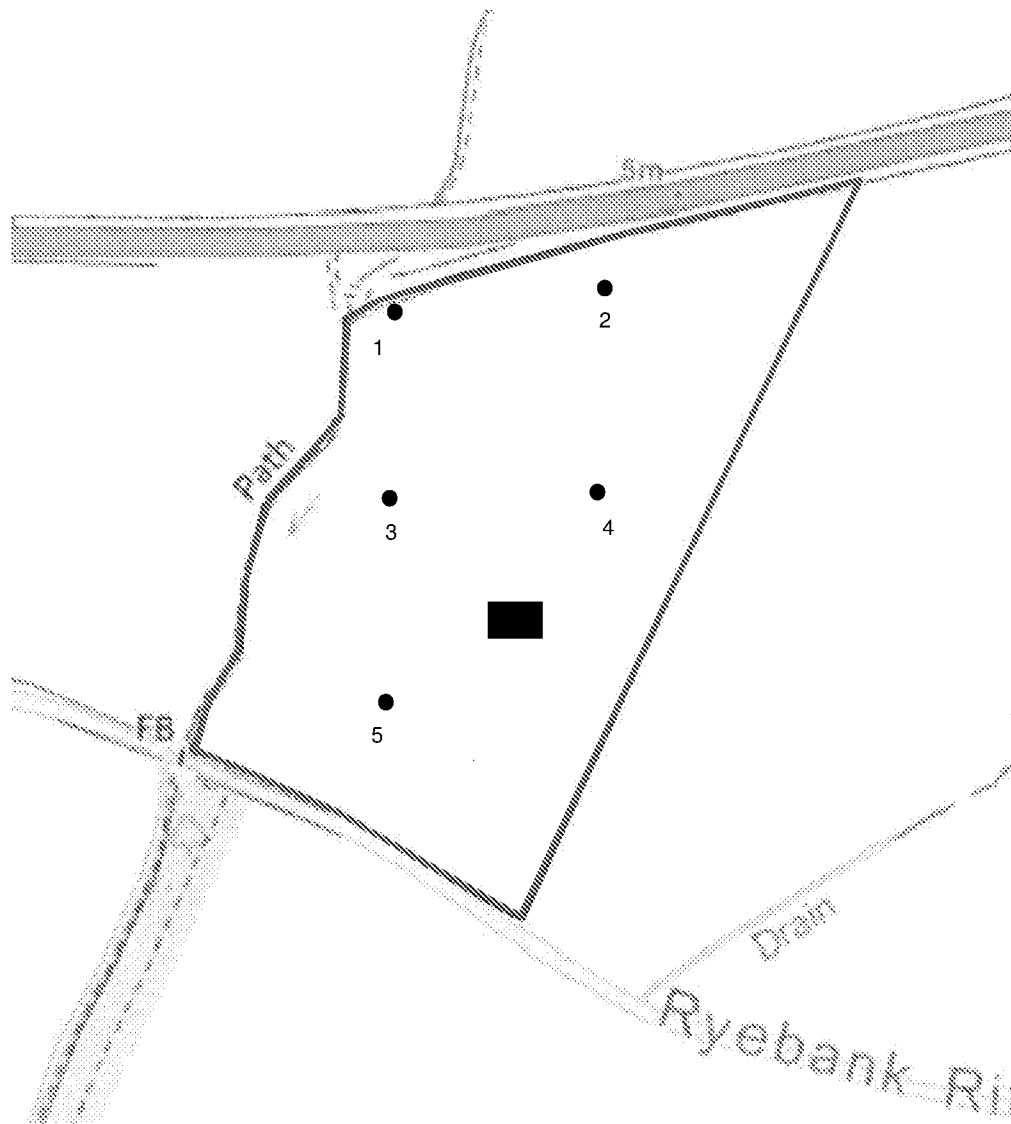
No	Depth (cm)	Colour matrix	Mottles	Stones (%)	Texture	Grade AP-MD		WC	Limit	ALC
						Wht	Pot			
1	0-28	10YR 3/3	PM PM PM	1	ZL	1	1	III	WT	3a
	28-51	10YR 4/4			ZL					
	51-80	10YR 4/4			MZCL					
	80-120	10Y 4/5			MZCL					
2	0-28	10YR 3/3	PM PM	2	ZL	1	1	III	WT	3a
	28-48	10YR 44			ZL					
	48-120	10YR 4/5			MZCL					
3	0-27	10YR 3/3	PM PM Mn PM	1	ZL	1	1	III	WT	3a
	27-46	10YR 4/3			ZL					
	46-70	10YR 4/5			MZCL					
	70-120	10YR 4/5			MZCL					
4	0-27	10YR 3/3	PM PM Mn PM Mn	1	ZL	1	1	III	WT	3a
	27-43	10YR 4/3			ZL					
	43-70	10YR 4/5			MZCL					
	70-120	10YR 4/5			MZCL					
5	0-28	10YR 3/3	PM PM Mn PM	1	ZL	1	1	III	WT	3a
	28-47	10YR 4/3			ZL					
	47-70	10YR 4/5			MZCL					
	70-120	10YR 4/5			MZCL Ca					
KEY										
Texture					Limitation					
ZL – silt loam					DR – soil droughtiness					
MZCL – medium siltyclay loam					WT – soil wetness					

Appendix KCC5
Profile Description

Profile Description

0-27cm	Dark brown (10YR 3/3) silt loam with a few small flint fragments (1%); weak medium and fine subangular blocky structure; low packing density, very porous; many fissures in recently prepared ground; some ploughed in straw; moist; sharp boundary
27-43cm	Dark yellowish brown (10YR 4/4) silt loam with common, clear ochreous and greyish mottles; weak medium angular blocky structure; medium packing density, moderately porous; common fine fissures, occasional root channels; smooth boundary
43-64cm	Dark yellowish brown (10YR 4/5) medium silty clay loam with many prominent and clear ochreous mottles; many soft manganiferous concretions; weak to very weak medium angular blocky and prismatic structure; medium to high packing density, slightly porous; few fine fissures; moist smooth boundary
64-80cms+	Similar to above but with large patches of manganiferous stains and soft accumulations.

Plan KCC2670/01
Auger Point Plan



KEY

- Auger sample location
- Soil Pit

PLAN	KCC2670/01		
TITLE	Auger Points Plan		
SITE	Climping, West Sussex		
CLIENT	Southern Co-operative Ltd		
NUMBER	KCC2670/01 12/18tk		
DATE	December 2018	SCALE	NTS

KERNON COUNTRYSIDE CONSULTANTS LTD
GREENACRES BARN, PURTON STOKE, SWINDON,
WILTSHIRE SN5 4LL

Tel 01793 771 333 Email: info@kernon.co.uk

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Plan KCC2670/02
Agricultural Land Classification



KEY		Ha	%	PLAN	KCC2670/02
	Grade 1			TITLE	Agricultural Land Classification
	Grade 2			SITE	Climping, West Sussex
	Grade 3a	5.2	100	CLIENT	Southern Co-operative Ltd
	Grade 3b			NUMBER	KCC2670/02 12/18 tk
	Grade 4			DATE	December 2018
	Grade 5			SCALE	NTS
	Non-agricultural			KERNON COUNTRYSIDE CONSULTANTS LTD GREENACRES BARN, PURTON STOKE, SWINDON, WILTSHIRE, SN5 4LL Tel 01793 771 333 Email: info@kernon.co.uk This plan is reproduced from the Ordnance Survey under copyright license 100015226	
	Urban				
	Not surveyed				

