
Agricultural Land Classification Report Arborfield

Prepared for: David Wilson Homes

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1.0 Introduction

Strutt and Parker have been instructed by David Wilson Homes to carry out an agricultural assessment of a 23 hectare (57 acre) site in Berkshire and to investigate the Agricultural Land Classification of this area by means of a detailed survey of the site and soil characteristics.

2.0 Site and Climatic Conditions

2.1 Soil Description

The area is part of the Wickham 4 soil association and therefore is classified as 'slowly permeable, seasonally waterlogged, fine loamy over clayey' (Soil Survey of England and Wales 1:250,000 1983). The underlying geology is drift over tertiary clay and the structure is shown in Appendix 1. The site is situated northwest of Arborfield Garrison and consists of nine permanent grass fields as highlighted on the map below in figure 1. The map indicates how according to Post 1998 land classification, the site is classed as grade 3. However, in order to assess the agricultural value of land, grade 3 land needs to be sub-classed; for example 3a land is capable of growing high yielding combinable crops as well as potatoes and sugar beet whereas grade 3b land will grow successful combinable crops with lower yield potential. Therefore, in order to assess a true classification to this land, it is important to carry out a site specific classification inspection.

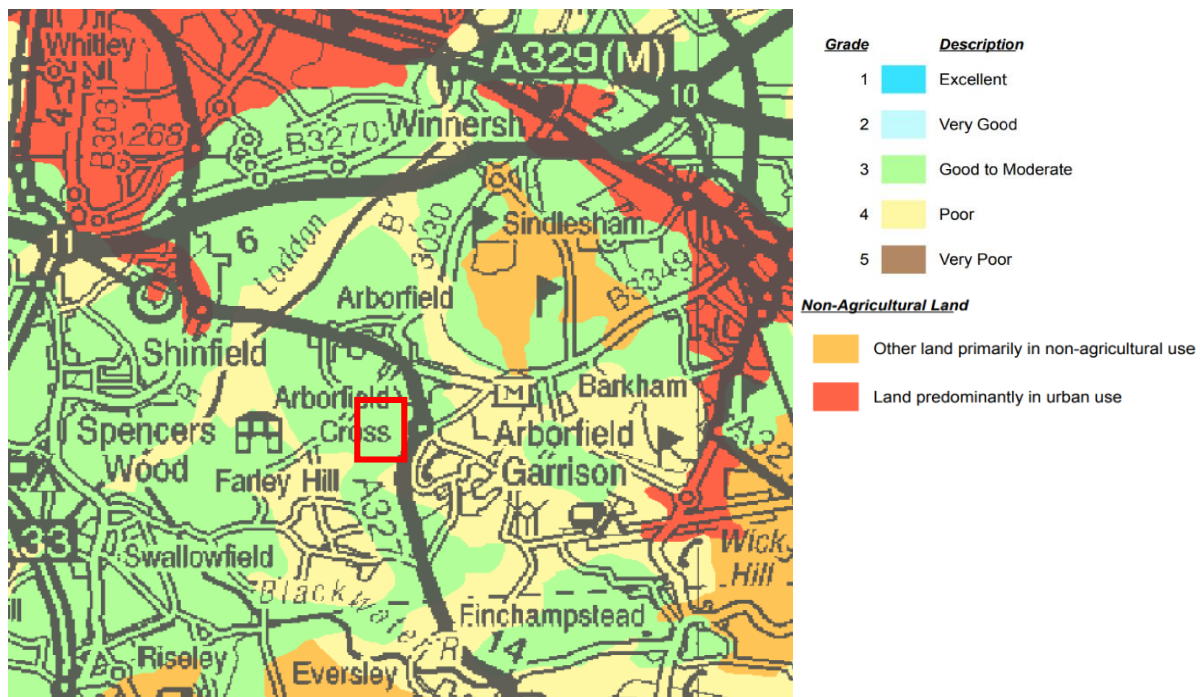


Figure 1 Post 1998 Agricultural Land Classification map (Natural England, 2010)

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2.2 Agro-Climate Conditions

Agro-climatic data for the site has been obtained from the Meteorological Office standard 5km grid point data set at reference point SU750 650. The following features have been included as they are relevant in assessing the classification of the land.

- **Altitude**
- **Accumulated Temperature** – excess of daily air temperatures above a selected threshold temperature, summed over a specific period. It is used as an indication of heat energy input and soil drying potential in relation to crop growth and yield throughout the growing season.
- **Average Annual Rainfall (AAR)** – Measure of overall wetness
- **Field Capacity Days (FCD)** – Measures the duration of climatic wetness. When the field is at capacity it is considered too wet to cultivate and usually corresponds to the start of agricultural drains flowing.
- **Moisture deficit (MD)** – the balance between water entering the soil via rainfall and water being lost through evapotranspiration. In lowland areas, deficits usually occur from April and peak in July or August. As temperatures decrease in the autumn, so does evapotranspiration which therefore reduces the MD.

Table 1 shows the micro-climatic values for Arborfield.

Table 1 Micro-climatic values for the site at Arborfield obtained from the Meteorological Office

Factor	Units	Values
Altitude	m, AOD	75
Accumulated Temperature (Jan-June)	Day	1440
Accumulated temperature (April- September)	Degrees	2409
Average Annual Rainfall	mm	684
Field Capacity Days	days	104
Moisture Deficit, Wheat	mm	111
Moisture Deficit, Potatoes	mm	104

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3.0 Methodology

3.1 MAFF Protocol

This survey has been conducted by a farming consultant who is a member of the British Society of Soil Science and was completed according to the Ministry of Agriculture, Fisheries and Food (MAFF) Agricultural Land Classification of England and Wales 1988 revised guidelines. The method provides a framework to identify the class of land according to the extent to which its physical or chemical characteristics impose long term limitations on agricultural use. The three factors considered are climate, site and soil as they are the key determinants of potential yield. The interactions between these factors are assessed to allow the classification of land into five grades; 1 is the highest quality of land. The grading works on the basis of 'most limiting factor'; if a number of limiting factors exist, both standalone and interactive, the most limiting one determines the grade. Standalone factors have the ability to restrict land irrespective of any climatic factors. The physical survey was carried out on the 21st November 2018 following desk data collection and preparation.

3.2 Soil Survey Features

As the guidelines suggest, one soil auger boring was taken per ha across the site in a systematic way shown on the map in Appendix 2 with a further four deep pits being dug to assess sub soil structures.

3.2.1 Soil characteristics

At each observation point the following characteristics were assessed for each soil horizon up to a maximum of 120cm or to any impenetrable layer:

- Soil texture
- Soil stone content and size
- Colour, including gleying and mottling
- Consistency
- Structural condition
- Depth

Using the above characteristics along with the agro-climatic data, it was possible to determine the following:

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- **Soil wetness class** – determined by calculating the depth to the slowly impermeable layer and extent of gleying in the key included in Appendix 3. The grade could then be obtained by considering the wetness class in relation to the soil type and the Field Capacity Days (FCD) using the table shown in Appendix 3.

- **Soil droughtiness** – this was calculated using the moisture balance equations and raw data shown in Appendix 3. Crop adjusted Available Profile Water (AP) is estimated from texture, stone content and depth in each of the soil layers for the crop standard wheat and potatoes. The moisture balance (MB) is calculated by subtracting the AP value from the moisture deficit (MD) obtained from the climatic data. The thresholds used to then determine the grade are shown in Appendix 4.

3.2.2 Site limitations

These refer to the physical lie of the land being assessed including gradient, flooding and micro-relief.

3.2.3 Interactive limitations

Soil - This refers to soil depth, stone content and chemical presence and texture.

Wetness – This assesses if the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing of livestock. It considers soil disturbance, occurrence of gleying, depth to the semi-permeable layer and field capacity days.

Droughtiness – This assess the ability of the soil to provide an adequate supply of soil moisture through the growing season to achieve full yield potential. Two reference crops, potatoes and wheat, are used to provide an estimate for average soil moisture balance (MB). This is calculated using crop-adjusted available water capacity of the soil profile (AP) and moisture deficit (MD). This is calculated using the values in Appendix 4.

Soil erosion - If there is significant soil erosion, this could be a limiting factor that would determine grade.

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4.0 Results

The raw data collected at each boring point is included in the tables in Appendix 5; this data will show the extent of variation of soil characteristics and stone content at each point. Photos taken at the date of excavation are included in Appendix 6 to demonstrate the features measured. Table 2 below shows the maximum grade calculated using the raw data in Appendix 5 for the factors measured at each data point.

4.1 Soil grades based on data collected from soil borings

Table 2 Summary of the maximum grade assigned for the limiting soil features for each boring taken

Boring	Site limit	Soil depth	Stone content	Wetness
<u>FIELD 1</u>				
1	1	2	1	2
<u>FIELD 2</u>				
2	2	3a	1	3a
3	2	2	1	3a
<u>FIELD 3</u>				
4	2	2	1	3a
5	2	2	1	3a
6	2	3a	1	3a
<u>FIELD 4</u>				
7	1	2	1	3a
8	1	2	1	3a
9	1	2	1	3a
<u>FIELD 5</u>				
10	1	2	1	3a
<u>FIELD 6</u>				
11	1	2	2	2
12	1	2	2	2
13	1	2	2	2
14	1	2	2	2
<u>FIELD 7</u>				
15	1	1	2	2
16	1	1	2	2
17	1	1	2	2
18	1	1	2	2

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FIELD 8				
19	2	2	2	2
20	3a	2	2	3a
21	3a	3b	2	3a
22	3a	3b	2	3a
23	2	3a	2	3a
24	2	3a	2	3a

Across all the points examined, although fields 2 and 3 had a gradient of between 5 and 10 degrees, there were no site limitations as reflected in the land being assigned as grade 1 or 2 under this limitation.

The topsoil texture was identified as a mixture of sandy clay and medium clay loam; this varied depending on the specific field. The middle two horizons are largely medium clay and then below 50cm the sand content increases again; at the same time, the stone content increases considerably. However, because the stone content is not significant within the top 25cm of the profile, this feature does not act as a limiting factor; nor does the soil structure. Figure 2 demonstrates these changes in texture.



Figure 2 Left: top soil structure showing high sand content, middle) the clay content increases in the middle horizons, right) the stone content increases hugely in the lower horizons

Table 2 shows how across the majority of the site, soil depth is not a limiting factor. Fields 2 and 3 have some areas of shallow soil and there is large variation in soil depth in field 8 due to the gradient giving an overall range of 1-3b for this feature. In addition, in some of the boring points where soil depth seems

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low, it may be the case that the measurement is a reflection of the slowly permeable layer preventing the auger from penetrating any deeper rather than the soil profile being shallow. Therefore, even though some core assessments would identify soil depth as a limiting factor, the level of variation means that these figures should not be looked at in isolation when assigning a soil class to the whole site.



Figure 4 Evidence of gleying in the pit in field 7 at around 40cm depth

With the exception of fields 1 and 2, there was evidence of gleying at all the examination points in each field at this site as demonstrated in figure 3. With gleying occurring around 40cm deep into the profile and a slowly permeable layer occurring within 80cm, a soil wetness class II was assigned for this site using the graph in appendix 3. When considered in conjunction with the soil texture of the top 25cm, the grade for soil wetness was calculated as either 2 or 3a.

4.2 Soil grades based on data collected from soil pits

Measurements were taken from the soil pits dug in fields 4 and 7 to calculate soil droughtiness using the tables included in Appendix 4. A maximum grade of 3b was assigned for wheat and 3a/3b for potatoes. Of all the data collected from both the soil pits and borings, this measurement of 3b was the lowest grade recorded at this site.

5.0 Discussion

Having undertaken an assessment of the various limitations to determine the ALC of the land at Arborfield, it can be concluded that the land should be classified as Grade 3b based on soil droughtiness. The maximum grade for the site was either grade 1 or 2 depending on the field but the gradient was not significant enough to make this feature the limiting factor. As seen in the results, there is quite a lot of variation for the grade assigned due to the soil both within and between fields; however, this is likely to be due not to true variation in depth but actually in the quality of the soil structure. In places where the soil depth is measured as below 50cm, this is also the same depth at which the slowly permeable layer is measured. Therefore, although the soil is probably deeper than that, it is very unlikely that agricultural crops can penetrate that layer and make use of the resources within it if a soil auger cannot be pushed into it. All fields on the site are in permanent grass and so any existing compaction caused by a mixture of soil type, land use and historic cultivations will not have been remedied recently; this compaction will have contributed to the level of gleying present in the middle horizons and if left to get worse could influence the reduction in soil wetness class for the site. However, the ALC guidelines advise that if a slowly permeable layer exists within the depth that can be alleviated by agricultural practice, this should be taken into account when deciding whether this feature should be assigned as the limiting factor for grading the site.

Soil droughtiness is assessed by looking at the relationship between the total depth of the soil profile, the depth and texture of each horizon and also the permeability of each horizon due to soil structure; the calculations used to work this out are included in Appendix 3. Soil depth was not a limiting factor, and the clay content in the soil would suggest that the soils would not easily drought by being too free-draining. However, the poor blocky structure that existed in the lower horizons along with the increasing sand and stone content at the bottom of the profile will contribute to water retention being relatively poor at depth. Therefore, the soil texture combined with the quality of soil structure in the lower horizons have caused soil droughtiness to be the most limiting factor.

Grade 3b land is defined under the Agricultural Land Classification of England and Wales as '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. At the time of inspection, both sheep and cattle were grazing the fields; considering the time of the year, the grass looked in condition and was providing plenty of grazing for the stock density present. Assessment by BASIS qualified consultants found that the grass would be capable of producing good yields of high quality grass for both grazing and cutting if managed properly. It is difficult to assess the potential of the site to grow arable crops as all of the fields were in long term leys but

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there was nothing to suggest that the site would not grow combinable crops of moderate yields; especially in fields where the gradient was less than 5%.

In conclusion, the blocky soil structure and high stone content at depth in the fields at Arborfield have caused droughtiness to be the limiting factor to the agricultural production potential of the farm and is therefore graded as 3b according to the agricultural land classification terminology.

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10/12/18:

Charles Ireland
For and on behalf of Strutt & Parker
269 Banbury Road
Oxford
Oxfordshire
OX2 7LL

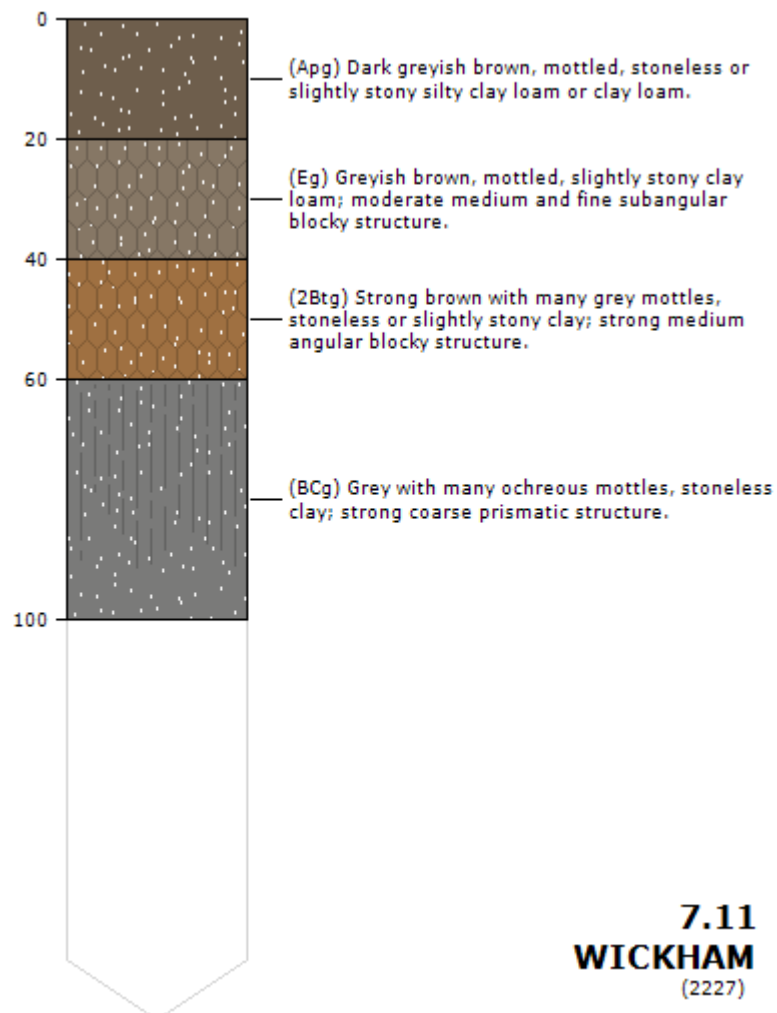
10/12/18:

Alice Montrose
For and on behalf of Strutt & Parker
269 Banbury Road
Oxford
Oxfordshire
OX2 7LL

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APPENDIX 1 – Soil profile description

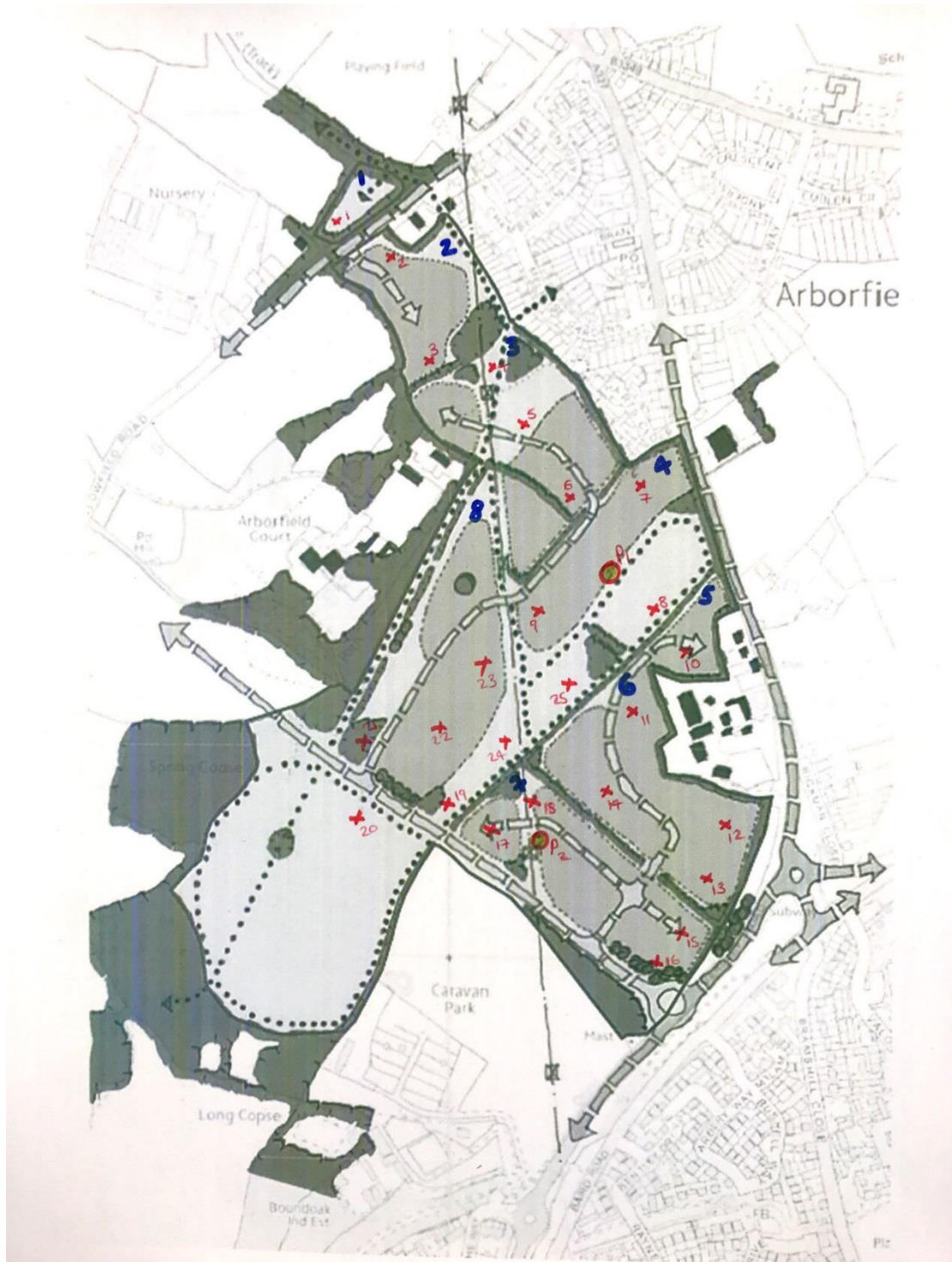


Cranfield University 2018. *The Soils Guide*. Available: www.landis.org.uk. Cranfield University, UK. Last accessed 10/12/2018

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APPENDIX 2 – Site Map



Field numbers are labelled in blue, soil pit sites are highlighted in green and soil auger points are indicated with red, numbered crosses.

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APPENDIX 3 – Soil wetness calculations

APPENDIX 3.1

The below flow chart was used to determine the wetness class of the site taking into consideration depth to semi-permeable layer and depth to gleyed horizon.

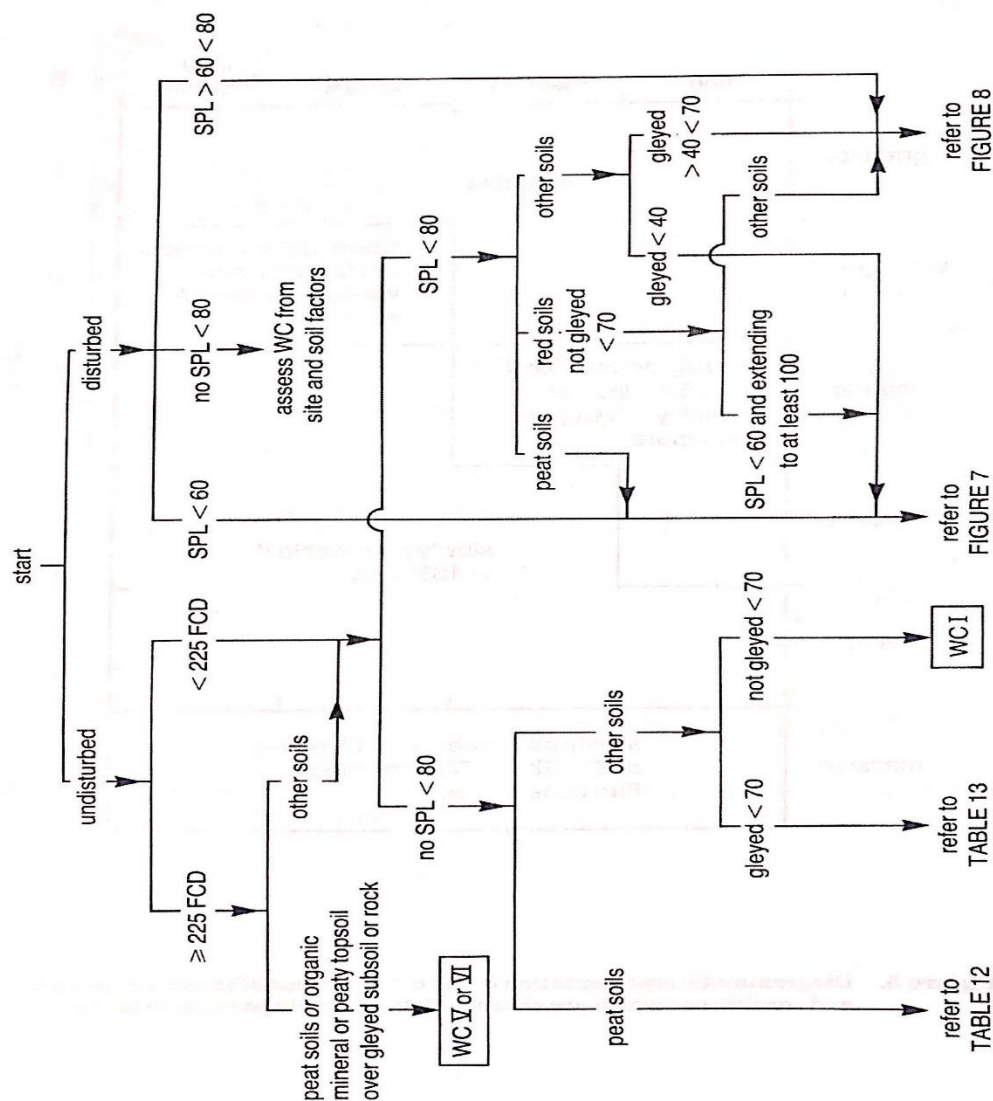


Figure 6. Flow diagram for assessing soil wetness class (WC) from field capacity days (FCD), depth to gleying (in cm) and depth to a slowly permeable layer (SPL, in cm)

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APPENDIX 3.2

The below graph was used to determine the wetness class once the flow chart in Appendix 2.1 established the appropriate graph to use.

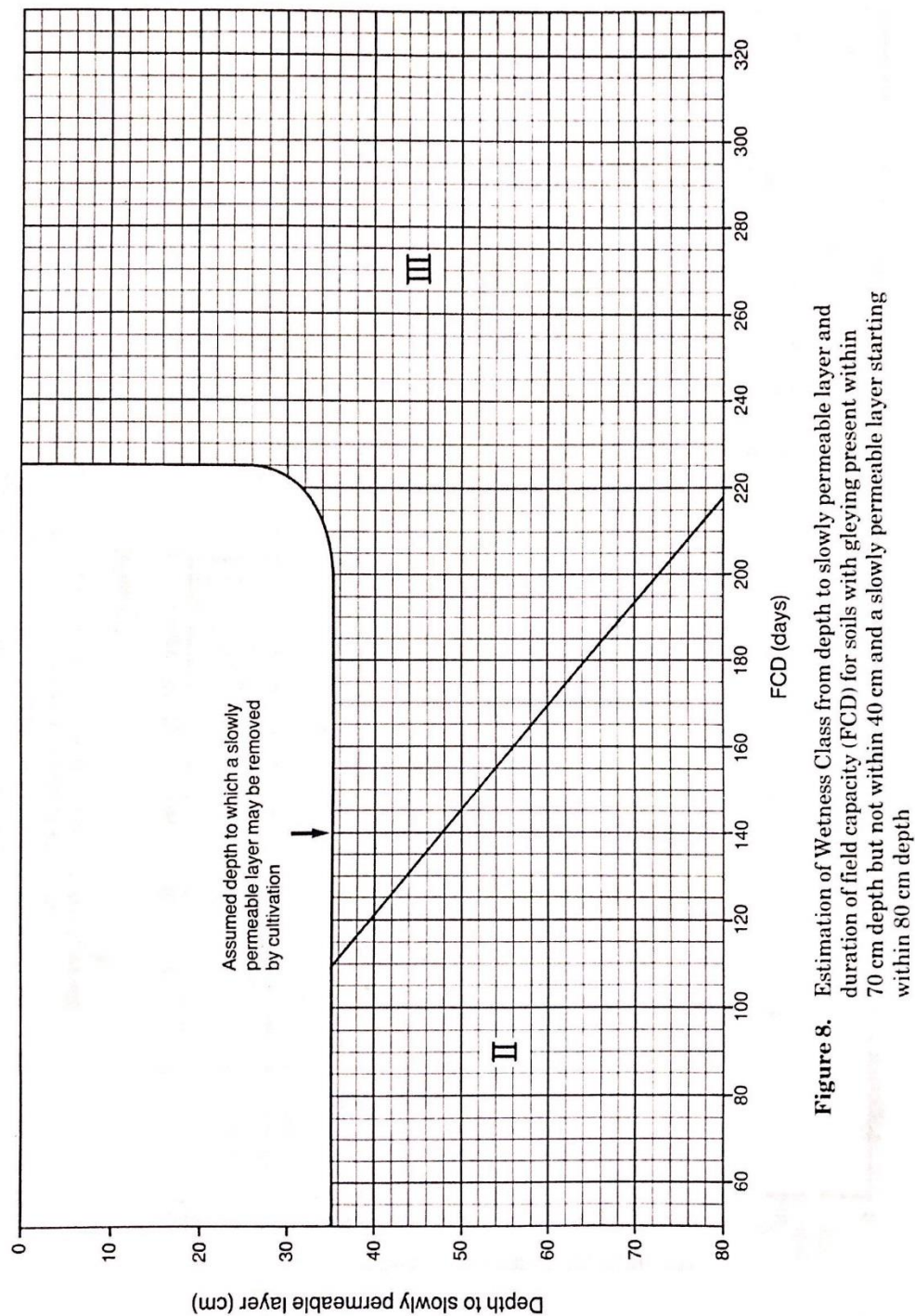


Figure 8. Estimation of Wetness Class from depth to slowly permeable layer and duration of field capacity (FCD) for soils with gleying present within 70 cm depth but not within 40 cm and a slowly permeable layer starting within 80 cm depth

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APPENDIX 3.3

The below table was used to determine wetness grade using the wetness class, soil texture and FCD

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Table 6 Grade according to soil wetness - mineral soils

Wetness Class	Texture ¹ of the top 25 cm	Field Capacity Days				
		<126	126-150	151-175	176-225	>225
I	S ² LS ³ SL SZL	1	1	1	1	2
	ZL MZCL MCL SCL	1	1	1	2	3a
	HZCL HCL	2	2	2	3a	3b
	SC ZC C	3a(2)	3a(2)	3a	3b	3b
II	S ² LS ³ SL SZL	1	1	1	2	3a
	ZL MZCL MCL SCL	2	2	2	3a	3b
	HZCL HCL	3a(2)	3a(2)	3a	3a	3b
	SC ZC C	3a(2)	3b(3a)	3b	3b	3b
III	S ² LS SL SZL	2	2	2	3a	3b
	ZL MZCL MCL SCL	3a(2)	3a(2)	3a	3a	3b
	HZCL HCL	3b(3a)	3b(3a)	3b	3b	4
	SC ZC C	3b(3a)	3b(3a)	3b	4	4
IV	S ² LS SL SZL	3a	3a	3a	3b	3b
	ZL MZCL MCL SCL	3b	3b	3b	3b	3b
	HZCL HCL	3b	3b	3b	4	4
	SC ZC C	3b	3b	3b	4	5
V	S LS SL SZL	4	4	4	4	4
	ZL MZCL MCL SCL	4	4	4	4	4
	HZCL HCL	4	4	4	4	4
	SC ZC C	4	4	4	5	5

Soils in Wetness Class VI - Grade 5

¹For naturally calcareous soils with more than 1% CaCO₃ and between 18% and 50% clay in the top 25 cm, the grade, where different from that of other soils, is shown in brackets (see page 16).

² Sand is not eligible for Grades 1, 2 or 3a (see page 16).

³ Loamy sand is not eligible for Grade 1 (see page 16).

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APPENDIX 4 – Soil droughtiness calculations and data

APPENDIX 4.1

The following equations were used to calculate soil droughtiness

$$\text{AP wheat (mm)} = \frac{TA_{vt} \times LT_t + \sum (TA_{vs} \times LT_{50}) + \sum (EA_{vs} \times LT_{50-120})}{10}$$

where

TA_{vt} is Total available water (TA_v) for the topsoil texture

TA_{vs} is Total available water (TA_v) for each subsoil layer

EA_{vs} is Easily available water (EA_v) for each subsoil layer

LT_t is thickness (cm) of topsoil layer

LT_{50} is thickness (cm) of each subsoil layer to 50 cm depth

LT_{50-120} is thickness (cm) of each subsoil layer between 50 and 120 cm depth

Σ means 'sum of'.

For potatoes no adjustments using EA_v are necessary. The soil available water capacity is calculated simply by multiplying the TA_v of each layer by its thickness, adding the products to a depth of 70 cm and dividing by 10. Thus:

$$\text{AP potatoes (mm)} = \frac{TA_{vt} \times LT_t + \sum (TA_{vs} \times LT_{70})}{10}$$

APPENDIX 4.2

The following table was used to obtain the appropriate TA_v and EA_v values for the site's top soil and sub soil.

Table 14 Estimation of available water (%) from texture class, horizon and structural conditions

Texture Class	Topsoil TA_v	Subsoil TA_v (EA_v in brackets)		
		<i>good</i> ¹	<i>moderate</i> ¹	<i>poor</i> ¹
Clay	17	21 (15)	16 (8)	13 (7)
Silty clay	17	21 (15)	15 (8)	12 (7)
Sandy clay	17	19 (14)	15 (10)	13 (8)
Sandy clay loam	17	19 (14)	15 (10)	13 (8)
Clay loam	18	21 (14)	16 (10)	12 (7)
Silty clay loam	19	21 (12)	17 (10)	12 (6)
Silt loam	23	23 (17)	22 (14)	15 (9)
Fine sandy silt loam	22	22 (16)	21 (15)	15 (9)
Medium sandy silt loam	19	19 (13)	17 (11)	15 (9)
Coarse sandy silt loam	19	23 (17)	19 (11)	15 (7)
Fine sandy loam	18	22 (17)	18 (13)	17 (11)
Medium sandy loam	17	17 (13)	15 (11)	11 (8)
Coarse sandy loam	17	22 (15)	16 (11)	11 (8)
Loamy fine sand	18	15 (13)	15 (13)	*
Loamy medium sand	13	12 (9)	9 (6)	*
Loamy coarse sand	11	11 (7)	8 (6)	*
Fine sand	*	14 (12)	14 (12)	*
Medium sand	12	7 (5)	7 (5)	*
Coarse sand	*	5 (4)	5 (4)	*
Marine light silts ²		33 (30)	28 (22)	*

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APPENDIX 4.3

The following table was used to determine the maximum grade for the sites in respect to soil droughtiness.

Table 8 Grade according to droughtiness

Grade/ Subgrade	Moisture Balance limits (mm)		
	<i>wheat</i>		<i>potatoes</i>
1	+30	<i>and</i>	+10
2	+5	<i>and</i>	-10
3a	-20	<i>and</i>	-30
3b	-50	<i>and</i>	-55
4	<-50	<i>or</i>	<-55

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APPENDIX 5 - Raw Data

Factor	Boring
Field 1	1
SITE	
Gradient	<5%
Limitation?	N
Flooding Micro-relief	N
Max Grade	1
SOIL	
Soil depth	47
Grade	2
Stone content to 25cm (%)	<5
Grade	1
Chemical presence	N
Texture of top 25cm	SCL
Max Grade	2
WETNESS	
disturbed soil	N
depth to gleyed horizon	/
Depth to SP layer	47
Wetness class	II
Max Grade	2

Factor	Boring	
Field 2	2	3
SITE		
Gradient	5-10%	5-10%
Limitation?	N	N
Flooding Micro-relief	N	N
Max Grade	2	2
SOIL		
Soil depth	38	47
Grade	3a	2
Stone content to 25cm (%)	<5	<5
Grade	1	1
Chemical presence	N	N
Texture of top 25cm	SC	SC
Max Grade	3a	2
WETNESS		
disturbed soil	N	N
depth to gleyed horizon	/	/
Depth to SP layer	35	47
Wetness class	II	II
Max Grade	3a	3a

Factor	Boring		
Field 3	4	5	6
SITE			
Gradient	5-10%	5-10%	5-10%
Limitation?	N	N	N
Flooding Micro-relief	N	N	N
Max Grade	2	2	2
SOIL			
Soil depth	52	55	36
Grade	2	2	3a
Stone content to 25cm	<5	<5	<5
Grade	1	1	1
Chemical presence	N	N	N
Texture of top 25cm	SC	SC	SC
Max Grade	2	2	3a
WETNESS			
disturbed soil	N	N	N
depth to gleyed horizon	38	34	33
Depth to SP layer	36	33	30
Wetness class	II	II	II
Max Grade	3a	3a	3a

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Factor	Boring		
Field 4	7	8	9
SITE			
Gradient	5-10%	5-10%	5-10%
Limitation?	N	N	N
Flooding Micro-relief	N	N	N
Max Grade	2	2	2
SOIL			
Soil depth	54	42	45
Grade	2	2	3a
Stone content to 25cm	<5	<5	<5
Grade	1	1	1
Chemical presence	N	N	N
Texture of top 25cm	SC	SC	SC
Max Grade	2	2	3a
WETNESS			
disturbed soil	N	N	N
depth to gleyed horizon	45	35	40
Depth to SP layer	54	42	45
Wetness class	II	II	II
Max Grade	3a	3a	3a

Factor	Boring
Field 5	10
SITE	
Gradient	<5%
Limitation?	N
Flooding Micro-relief	N
Max Grade	1
SOIL	
Soil depth	52
Grade	2
Stone content to 25cm (%)	<5
Grade	1
Chemical presence	N
Texture of top 25cm	SC
Max Grade	2
WETNESS	
disturbed soil	N
depth to gleyed horizon	33
Depth to SP layer	48
Wetness class	II
Max Grade	3a

Factor	Boring			
Field 6	11	12	13	14
SITE				
Gradient	<5%	<5%	<5%	<5%
Limitation?	N	N	N	N
Flooding Micro-relief	N	N	N	N
Max Grade	1	1	1	1
SOIL				
Soil depth	52	48	55	54
Grade	2	2	2	2
Stone content to 25cm	5-10	5-10	5-10	5-10
Grade	2	2	2	2
Chemical presence	N	N	N	N
Texture of top 25cm	MCL	MCL	MCL	MCL
Max Grade	2	2	2	2
WETNESS				
disturbed soil	N	N	N	N
depth to gleyed horizon	40	43	52	50
Depth to SP layer	35	36	42	40
Wetness class	II	II	II	II
Max Grade	2	2	2	2

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Factor	Boring			
Field 7	15	16	17	18
SITE				
Gradient	<5%	<5%	<5%	<5%
Limitation?	N	N	N	N
Flooding Micro-relief	N	N	N	N
Max Grade	1	1	1	1
SOIL				
Soil depth	46	45	54	52
Grade	2	2	2	2
Stone content to 25cm	5-10	5-10	5-10	5-10
Grade	2	2	2	2
Chemical presence	N	N	N	N
Texture of top 25cm	MCL	MCL	MCL	MCL
Max Grade	2	2	2	2
WETNESS				
disturbed soil	N	N	N	N
depth to gleyed horizon	40	36	45	48
Depth to SP layer	46	45	54	52
Wetness class	II	II	II	II
Max Grade	2	2	2	2

Factor	Plot Number						
Field 8	19	20	21	22	23	24	25
SITE							
Gradient	<5%	5-10%	5-10%	5-10%	5-10%	<5%	<5%
Limitation?	N	N	N	N	N	N	N
Flooding Micro-relief	N	N	N	N	N	N	N
Max Grade	2	3a	3a	3a	3a	2	2
SOIL							
Soil depth	54	52	29	19	33	32	57
Grade	2	2	3b	3b	3a	3a	2
Stone content to 25cm	5-10	5-10	5-10	5-10	5-10	5-10	5-10
Grade	2	2	2	2	2	2	2
Chemical presence	N	N	N	N	N	N	N
Texture of top 25cm	MCL	SC	SC	SC	SC	MCL	MCL
Max Grade	2	2	3b	3b	3a	3a	2
WETNESS							
disturbed soil	N	N	N	N	N	N	N
depth to gleyed horizon	48	35	/	/	/	/	/
Depth to SP layer							
Wetness class							
Max Grade	2	3a	3a	3a	3a	3a	3a

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The following tables contain the data used to calculate the moisture deficits in relation to wheat and potato production. These values are then used to identify the soil droughtiness grade using the table in appendix 3.3

Pit	Horizon	Top Soil ?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Stone %	Structural Condition for AW	Wheat Droughtiness				Potatoes Droughtiness			
									TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	Tav (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil
Pit 1	1	Y	0	15	15	SC	5%	good	1	17	24		1	17	24	
field 4	2		15	25	10	MC	5%	mod	1	16	15		1	16	15	
	3		25	30	10	MC	15%	poor	1	13	11		1	13	11	
	4		30	50	30	SC	20%	poor	1	7	20		1	13	32	
	5		50	60	10	SC	50%	poor	0.5	7	20		1	13	7	
									91		0		89		0	
									AP Wheat (mm)	91			AP Potatoes	89		
									MD				MD			
									Wheat (mm)	121			Potatoes (mm)	117		
									MB				MB			
									Wheat (mm)	-30			Potatoes (mm)	-28		
									Droughtiness Grade	3b			Droughtiness Grade	3a		

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										Wheat Droughtiness					Potatoes Droughtiness				
Pit	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Stones %	Structural Condition for AW		TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil		TAv (stones) %	Tav (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	
Pit 2	1	Y	0	20	20	MCL	5%	good		1	17	32			1	17	32		
field 7	2		20	45	25	MCL	5%	mod		1	16	38			1	16	38		
	3		45	50	5	MC	10%	mod		1	16	7			1	16	7		
	4		50	60	10	MC	30%	poor		0.5	7	5			1	15	11		
	5		60	70	10	SC	50%	poor		0.5	8	4			1	13	7		
			70	75	5	SC		poor		0.5	8	4			0				
										91			0		95			0	
										AP Wheat (mm)			91		AP Potatoes			95	
										MD Wheat (mm)			121		MD Potatoes (mm)			117	
										MB Wheat (mm)			-30		MB Potatoes (mm)			-22	
										Droughtiness Grade			3b		Droughtiness Grade			3a	

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APPENDIX 6 – Site Images

FIELD 2



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FIELD 3



FIELD 4



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FIELD 7



FIELD 8

