Land South of Myton

Agricultural Land Classification

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Resource Planning Team
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FRCA Western Region

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LAND SOUTH OF MYTON

AGRICULTURAL LAND CLASSIFICATION SURVEY

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INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 187 7 ha of land south of Myton Warwick Field survey was based on 162 auger borings and 9 soil profile pits and was completed in January 1998 During the survey 8 samples were analysed for particle size distribution (PSD)

2 The survey was conducted by the Resource Planning Team of FRCA Western Region on behalf of MAFF in its statutory role in the preparation of the Warwickshire Structure Plan

3 Information on climate geology and soils and from previous ALC surveys was considered and is presented in the relevant section Apart from the published regional ALC map (MAFF 1977) which shows the site at a reconnaissance scale as grade 2 and 3 the site had not been surveyed previously However the current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988) and supersedes any previous ALC survey Grade descriptions are summarised in Appendix I

4 A survey (ADAS 1989) was undertaken on an area of land adjacent to the present site using the Revised Guidelines and creteria for Grading the Quality of Agricultural Land (MAFF 1988) This survey at Heathcote Home Farm shows Grade 2 and Subgrade 3a land north of Lower Heathcote Farm and the sewage works and Subgrade 3b land along the A452 and north of Grove Farm Attention was paid to the grading of the land from this survey for the grading of land from the present survey

5 At the time of survey land cover was cereal oilseed rape beans and permanent grass An area of 6 4 ha of agricultural land within the survey area was not surveyed because access could not be obtained Other land which was not surveyed included residential development farm buildings highways and tracks woodland and open water

SUMMARY

6 The distribution of ALC grades is shown on the accompanying 1 10000 scale ALC map The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas Areas are summarised in the Table 1

Table 1 Distribution of ALC grades Land South Of Myton

Grade	Area (ha)	% Surveyed Area (167 9ha)
1	10 5	6 0
2	83 1	47 7
3a	51 3	29 4
3b	23 0	13 2
Agricultural land not surveyed	6 4	
Other land	13 4	
Total site area	187 7	

7 Best and most versatile land occurs across the majority of the site small areas of subgrade 3b land occur as isolated patches where soils are heavy and limited by soil wetness Two small areas of land are limited in their agricultural use to subgrade 3b due to gradients of over 7° Grade 1 quality agricultural land occurs in the north of the site around Cottage Farm Here the soils have no limitations to their agricultural use Significant areas of Grade 2 land occur across the whole site generally on the higher land where soils are lighter and have a slight soil droughtiness limitation Subgrade 3a land is found largely in the centre and south of the site on the gently sloping land west and south of Lower Heathcote Farm and around Grove Farm These soils generally have moderate wetness limitations

CLIMATE

8 Estimates of climatic variables for this site were derived from the published agricultural climate dataset Climatological Data for Agricultural Land Classification (Meteorological Office 1989) using standard interpolation procedures Data for key points around the site are given in Table 2 below

9 Since the ALC grade of land is determined by the most limiting factor present overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions Parameters used for assessing overall climate are accumulated temperature a measure of relative warmth and average annual rainfall a measure of overall wetness The results shown in Table 2 indicate that there is no overall climatic limitation

10 Climatic variables also affect ALC grade through interactions with soil conditions The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes which are compared with the moisture available in each profile in assessing soil droughtiness limitations These are described in later sections

Table 2 Climatic Interpolations Land south of Myton

Grid Reference		SP 303647	SP 307627	SP 312623
Altitude (m)		55	70	60
Accumulated Temperature (day C)		1429	1413	1425
Average Annual Rainfall (mm)		636	613	621
Overall Climatic Grade		1	1	1
Field Capacity Days		139	136	134
Moisture deficit (mm)	Wheat	106	106	107
	Potatoes	98	97	100

RELIEF

11 Altitude ranges from 55 metres at Henry VIII farm in the north and along Tach Brook in the south to 72 metres west of the sewage works The site is generally gently sloping although at two small areas west of the sewage works gradients of 9 10 were recorded

GEOLOGY AND SOILS

12 The underlying geology of the site is shown on the published geology map (BGS 1984) as comprising river terrace deposits on the higher flatter land with Triassic Mercia mudstone on the gently sloping land and alluvium along the valley bottoms In the recent survey lighter soils were found on the higher plateau land heavier soils which passed onto red clay on the slopes and clayey alluvial soils at the base of the slopes

13 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1 250 000 (SSEW 1983) as Wick 1 Association which is found mainly on the higher level River terraces together with the Norton Soil series Dunnington Heath Association is mapped on the gently sloping ground with Worcester series at the base of the slopes Alluvium and Brockhurst series soils are found in the valley bottoms

14 The Wick 1 Association and associated Norton series are described as having deep well drained coarse loamy profiles the latter occurring on the oldest terrace remnants Dunnington Heath Association soils are stagno gleyic brown earths these occur on Triassic mudstones and have coarse loamy upper horizons The soils of the Worcester series are slowly permeable reddish clayey soils over mudstone Soils of Brockhurst series and the alluvial soils are surface water gleys and described as fine loamy over clayey

15 The majority of the soils in the present survey were found to closely follow the distribution described above soils were lighter and better drained on the higher ground became heavier on the slopes and were found to be heavy over clayey at the base of the slopes and on the alluvium in the valley bottoms

AGRICULTURAL LAND CLASSIFICATION

16 The distribution of ALC grades found by the current survey is shown on the accompanying 1 10000 scale map and areas are summarised in Table 1 The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas

Grade 1

17 An area of excellent quality agricultural land was identified around Henry VII Farm and Cottage Farm The soils were described as having sandy loam topsoil textures overlying sandy clay loam subsoils occasionally to depth but generally reaching clay below 65cm A profile pit confirmed the soils were not droughty and have only a minor wetness limitation which places the soils into Wetness Class II (see Appendix II) with the light textured topsoils this soil wetness does not impose any limitation on the overall agricultural use of this land

Grade 2

19 A significant area of the site was found to be of very good quality notably the areas south west of Cottage Farm and around Heathcote Hill Farm land both east and west of lower Heathcote Farm the area around Grove Farm on the higher land and in the extreme east of the survey area a narrow strip of land north east of Grove Plantation This Grade 2 land can be differentiated on the basis of its soil textures and therefore its limiting factors

20 The area of land around and east of Heathcote Hill Farm and that west of Grove Farm both of which are the higher plateau areas have soils that are limited by soil droughtiness These soils were described as having medium sandy loam topsoil textures which overlay variable ordered subsoil horizons of loamy sand sandy clay loam sand loam and sand generally passing onto a stonier horizon at depths of around 90 cm Two profile pits confirmed that the soils had no wetness limitation but that the soils were slightly droughty The area of Grade 2 soils identified north of Grove Farm have slightly heavier textures but again a profile pit confirmed there was no wetness limitation but that the soils were slightly droughty

21 South West of Cottage Farm the Grade 2 soils were also described as having sandy loam topsoil textures but these soils overlay sandy loam and sandy clay loam subsoils that passed onto clay above 60cm A profile pit confirmed that the clay is slowly permeable and this placed the soils into wetness class III

22 The Grade 2 land east of Lower Heathcote Farm are limited in their agricultural use by both a soil wetness and a soil droughtiness limitation The soils were described as having sandy clay loam topsoils over similar or heavy clay loam subsoils which passed onto clay below 70 cm A profile pit confirmed that this clay was slowly permeable placing the soil into wetness class II and that the soil was also slightly droughty

Subgrade 3a

23 Land of good quality has been identified east of Cottage Farm west of Lower Heathcote Farm west of the sewage works and around Grove Farm The soils were described as having medium clay loam and occasionally sandy clay loam topsoil textures overlying heavy clay loam subsoils and passing onto red clay below 40 cm Two profile pits confirmed that the red clay was slowly permeable placing the soils into Wetness Class III

Subgrade 3b

24 Land of moderate quality occurs as small isolated areas specifically along Tach Brook on lower lying land and around old marl pits In the south of the site along Tach Brook the alluvial soils were described as having heavy clay loam topsoils which overlay grey alluvial clay within 30 cm this clay was confirmed as slowly permeable by a soil profile pit and the soils placed into Wetness Class IV

25 On lower lying land several areas have been identified where both heavy and medium clay loam topsoils overlie red clay to depth The red clay had been confirmed as slowly permeable elsewhere and these soils were also placed into Wetness Class IV

26 During the survey a number of small isolated areas were identified as the sites of old marl pits on these the soils were found to have heavy clay loam topsoils which passed onto red clay within 30cm These soils were placed into Wetness Class IV

27 In the south of the site along Tach Brook west of the sewage works an area of land was downgraded due to slope gradients in excess of 7

Other Land

28 Other land across the site that was not surveyed included farm buildings residential development highways tracks woodland and open water

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February 1998

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APPENDIX I

DESCRIPTION OF GRADES AND SUBGRADES

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 include 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 (eg cereals and forage crops) the yields of which are variable In most 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

Source MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land MAFF Publications Alnwick

APPENDIX II

DEFINITION OF SOIL WETNESS CLASSES

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years

Wetness Class II

The soil profile is wet within 70 cm depth for 31 90 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 90 days but not wet within 40 cm depth for more than 30 days in most years

Wetness Class III

The soil profile is wet within 70 cm depth for 91 180 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31 and 90 days in most years

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 40 cm depth for 91 210 days in most years

Wetness Class V

The soil profile is wet within 40 cm depth for 211 335 days in most years

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years

Notes The number of days specified is not necessarily a continuous period

In most years is defined as more than 10 out of 20 years

Source Hodgson J M (Ed) (1997) Soil Survey Field Handbook Soil Survey Technical Monograph No 5 Silsoe

APPENDIX III

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report Terms used and abbreviations are set out below These conform to definitions contained in the Soil Survey Field Handbook (Hodgson 1997)

1 Terms used on computer database in order of occurrence

GRID REF National 100 km grid square and 8 figure grid reference

LAND USE At the time of survey

WHT	Wheat	**SBT**	Sugar Beet	**HTH**	Heathland
BAR	Barley	**BRA**	Brassicas	**BOG**	Bog or Marsh
OAT	Oats	**FCD**	Fodder Crops	**DCW**	Deciduous Wood
CER	Cereals	**FRT**	Soft and Top Fruit	**CFW**	Coniferous Woodland
MZE	Maize	**HRT**	Horticultural Crops	**PLO**	Ploughed
OSR	Oilseed Rape	**LEY**	Ley Grass	**FLW**	Fallow (inc Set aside)
POT	Potatoes	**PGR**	Permanent Pasture	**SAS**	Set Aside (where known)
LIN	Linseed	**RGR**	Rough Grazing	**OTH**	Other
BEN	Field Beans	**SCR**	Scrub		

GRDNT Gradient as estimated or measured by hand held optical clinometer

GLEY SPL Depth in centimetres to gleying or slowly permeable layer

AP (WHEAT/POTS) Crop adjusted available water capacity

MB (WHEAT/POTS) Moisture Balance (Crop adjusted AP crop potential MD)

DRT Best grade according to soil droughtiness

If any of the following factors are considered significant Y will be entered in the relevant column

MREL	Microrelief limitation	**FLOOD**	Flood risk	**EROSN**	Soil erosion risk
EXP	Exposure limitation	**FROST**	Frost prone	**DIST**	Disturbed land
CHEM	Chemical limitation				

LIMIT The main limitation to land quality The following abbreviations are used

OC	Overall Climate	**AE**	Aspect	**EX**	Exposure
FR	Frost Risk	**GR**	Gradient	**MR**	Microrelief

FL	Flood Risk	**TX**	Topsoil Texture	**DP**	Soil Depth
CH	Chemical	**WE**	Wetness	**WK**	Workability
DR	Drought	**ER**	Erosion Risk	**WD**	Soil Wetness/Droughtiness
ST	Topsoil Stoniness				

TEXTURE Soil texture classes are denoted by the following abbreviations

S	Sand	**LS**	Loamy Sand	**SL**	Sandy Loam
SZL	Sandy Silt Loam	**CL**	Clay Loam	**ZCL**	Silty Clay Loam
ZL	Silt Loam	**SCL**	Sandy Clay Loam	**C**	Clay
SC	Sandy clay	**ZC**	Silty clay	**OL**	Organic Loam
P	Peat	**SP**	Sandy Peat	**LP**	Loamy Peat
PL	Peaty Loam	**PS**	Peaty Sand	**MZ**	Marine Light Silts

For the sand loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

F Fine (more than 66% of the sand less than 0 2mm)
M Medium (less than 66% fine sand and less than 33% coarse sand)
C Coarse (more than 33% of the sand larger than 0 6mm)

The clay loam and silty clay loam classes will be sub divided according to the clay content **M** Medium (< 27% clay) **H** heavy (27 35% clay)

MOTTLE COL Mottle colour using Munsell notation

MOTTLE ABUN Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2 20% **M** many 20 40% **VM** very many 40%+

MOTTLE CONT Mottle contrast

F faint indistinct mottles evident only on close inspection
D distinct mottles are readily seen
P Prominent mottling is conspicuous and one of the outstanding features of the horizon

PED COL Ped face colour using Munsell notation

GLEY If the soil horizon is gleyed a Y will appear in this column If slightly gleyed an S will appear

STONE LITH Stone Lithology One of the following is used

HR All hard rocks and stones **SLST** Soft oolitic or dolimitic limestone

CH	Chalk	**FSST**	Soft fine grained sandstone
ZR	Soft argillaceous or silty rocks	**GH**	Gravel with non porous (hard) stones
MSST	Soft medium grained sandstone	**GS**	Gravel with porous (soft) stones
SI	Soft weathered igneous or metamorphic rock		

Stone contents are given in % by volume for sizes >2cm >6cm and total stone >2mm

STRUCT The degree of development size and shape of soil peds are described using the following notation

Degree of development	**WA**	Weakly developed Adherent	**WK**	Weakly developed
	MD	Moderately developed	**ST**	Strongly developed
Ped size	**F**	Fine	**M**	Medium
	C	Coarse	**VC**	Very coarse
Ped Shape	**S**	Single grain	**M**	Massive
	GR	Granular	**AB**	Angular blocky
	SAB	Sub angular blocky	**PR**	Prismatic
	PL	Platy		

CONSIST Soil consistence is described using the following notation

L	Loose	**VF**	Very Friable	**FR**	Friable	**FM**	Firm
VM	Very firm	**EM**	Extremely firm	**EH**	Extremely Hard		

SUBS STR Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** Good **M** Moderate **P** Poor

POR Soil porosity If a soil horizon has poor porosity with less than 0 5% biopores >0 5mm a Y will appear in this column

IMP If the profile is impenetrable to rooting a Y will appear in this column at the appropriate horizon

SPL Slowly permeable layer If the soil horizon is slowly permeable a Y will appear in this column

CALC If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a Y will appear this column

2 Additional terms and abbreviations used mainly in soil pit descriptions

STONE ASSESSMENT

VIS	Visual	**S**	Sieve	**D**	Displacement

MOTTLE SIZE

EF	Extremely fine <1mm	**M**	Medium 5 15mm
VF	Very fine 1 2mm>	**C**	Coarse >15mm
F	Fine 2 5mm		

MOTTLE COLOUR May be described by Munsell notation or as ochreous (OM) or grey (GM)

ROOT CHANNELS In topsoil the presence of rusty root channels should also be noted

MANGANESE CONCRETIONS Assessed by volume

N	None		**M**	Many	20 40%
F	Few	<2%	**VM**	Very Many	>40%
C	Common	2 20%			

POROSITY

P	Poor	less than 0 5% biopores at least 0 5mm in diameter
G	Good	more than 0 5% biopores at least 0 5mm in diameter

ROOT ABUNDANCE

The number of roots per 100cm^2		Very Fine and Fine	Medium and Coarse
F	Few	1 10	1 or 2
C	Common	10 25	2 5
M	Many	25 200	>5
A	Abundant	>200	

ROOT SIZE

VF	Very fine	<1mm	**M**	Medium	2 5mm
F	Fine	1 2mm	**C**	Coarse	>5mm

HORIZON BOUNDARY DISTINCTNESS

Sharp	<0 5cm	**Gradual**	6 13cm
Abrupt	0 5 2 5cm	**Diffuse**	>13cm
Clear	2 5 6cm		

HORIZON BOUNDARY FORM Smooth wavy irregular or broken *

* See Soil Survey Field Handbook (Hodgson 1997) for details

Review of MAFF Gradings South of Myton

Following discussions with Margetts regarding an area of Grade 1 mapped around Henry 8th Farm, Myton, Defra has looked at all the records for the survey (Ref. 78/97) and considered possible scenarios with regard to elements of the data recorded during the survey. In some cases there is clear new evidence for updating the data, such as laboratory PSD results but in other cases, a series of scenarios need to considered in reviewing the available data. There are no additional field notes available to provide assistance in drawing conclusions different from those originally presented, nor are the original surveyors available to consult.

Poor structured subsoil clays

During the MAFF ALC survey at Myton, soil profile pits in the northern part of the site (5P and 6P) showed that the lower clay subsoils had poor structural conditions. It is not easy to assess subsoil structure on auger borings and inferences can be made from soil pits in similar soils. It is possible that the clays identified in the borings in the north of the site also have poor subsoil structures. There is no additional notes available from the survey to indicate why the field surveyors did not modify the clay structural conditions recorded in the borings at the time of survey, in the light of the pit findings. Purely on the basis of the data provided it is not unreasonable to make an assumption that the clay structural condition is likely to be poor. If this scenario is followed then recalculation of the available water in each of the profiles affected, changes the final grades in some of the profiles.

A revised table of final grades is shown below, alongside the gradings obtained if moderate structure is used in the calculation.

Sample Point	Grade*	Main limitation	Grade**	Main Limitation
3	1	None	1	None
4	1	None	1	None
5P	1	None	1	None
6	1	None	1	None
7	2	Wetness/Dr	2	Wetness/Dr
8	2	Droughtiness	2	Droughtiness
9	1	None	2	Droughtiness
10	1	None	1	None
11	1	None	1	None
12	2	Wetness	2	Wetness/Dr
14	1	None	2	Droughtiness
15	1	None	2	Droughtiness
21	1	None	2	Droughtiness
22	1	None	2	Droughtiness

*Grade using Moderate structure in clay subsoils
** Grade using Poor structure in clay subsoils

Topsoil Texture

Some of the borings were recorded as having FSL topsoils. A PSD analysis was carried out for a topsoil sample collected at Pit 5. This showed that the texture, hand textured as FSL was in fact MSL. More recent PSD analysis carried out on behalf of Margetts showed that none of the topsoils thought to be FSL, by MAFF, were this texture but rather MSL. The analysis showed that around one third of the sand component was fine sand. The hand texture results could therefore be changed to reflect the laboratory results. It is unlikely that there are any FSL topsoils in this area, based on the two sets of laboratory findings. Soil texture affects the available water in the soil profile. Adjustments were made to reflect the findings of the PSD analysis.

Stone content of horizons

More accurate estimates and measurements of stone contents can be made in a soil profile pit, than in auger borings. Pit 5 in the north of the site showed the topsoil stone content to be visually estimated at 1%. The two upper subsoil horizons were also visually estimated at 1%. The stony horizon at depth (71cm+ in the pit) was found to contain 24% stone by sieving and displacement. The lowest horizon in the pit was stoneless. These stone contents can be used to adjust the estimates made during augering. Stone contents in the profile affect the available water. Readjustment of stone contents recorded in auger borings in the light of findings at a pit are more difficult as stone contents can be variable. However, they can be used as a guide. The stone contents in the borings around Henry 8th Farm were adjusted to reflect those found in Pit 5, usually less stony than estimated during augering.

Revision to Gradings around Henry 8th Farm

If the scenarios discussed above are taken on board and revisions to the soils data as outlined above are made, there are changes in the final grading at some of the profiles previously mapped as Grade 1 around Henry 8th Farm.

Profiles in the rest of the survey (187.7ha Ref. 78/97) have also been reassessed but there is no change to the grading in other areas.

Revised droughtiness calculations from a combination of modified textures, stone contents and subsoil structural conditions lead to the following final gradings for the borings in the area previously mapped as Grade 1. The revised soil profiles are presented in Appendix 1.

Revised gradings around Henry 8th Farm

Sample Point	Grade*	Main limitation	Grade**	Main Limitation
3	1	None	1	None
4	1	None	1	None
5P	2	Droughtiness	2	Droughtiness
6	1	None	1	None
7	2	Wetness/Dr	2	Wetness/Dr
8	2	Droughtiness	1	None
9	1	None	2	Droughtiness
10	1	None	1	None
11	1	None	1	None
12	2	Wetness	2	Wetness/Dr
14	1	None	2	Droughtiness
15	1	None	2	Droughtiness
21	1	None	2	Droughtiness
22	1	None	2	Droughtiness

*Original Grade

** Revised Grade using Poor structure in clay subsoils, MSL rather than FSL topsoils and modified stone contents, where applicable.

Conclusions

In the light of discussions with Margetts regarding the area of Grade 1 mapped around Henry 8th Farm, Myton, Defra has reviewed the survey data. Defra is prepared to agree that it is likely that the area of Grade 1 land may be smaller than originally mapped, but that there remains an area of better land (Grade 1) within the larger surrounding Grade 2 land. The changes to the mapped grades are based on a series of scenarios which have been assessed as part of a desk exercise and no further field work has taken place except for a series of PSD analysis presented by Margetts. Gradings in other parts of the survey area are unaffected.

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Appendix 1: Original Grade 1 area survey data Myton

Changes are shown in italics

Sample Point 3

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
3	SP30706490	cereal	N/01	0-30	*MSL*	10YR32				1/0	*1 HR*							
				30-40	SCL	75YR43					*1 HR*			M				
				40-90	SCL	10YR53	75YR56/C		Y		*1 HR*			M				
				90-120	SCL	10YR53	75YR58/C		Y		*24 HR*			M				

+ pits only
Augered to 120cm

Gleyed	Not
SPL	None
Wetness Class	I
Wheat AP	*143*
Potatoes AP	110
Wheat MD	106
Potatoes MD	98
Wheat MB	*37*
Potatoes MB	12
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 4

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
4	SP30806490	cereal	N/01	0-29	*MSL*	10YR32												
				29-55	SCL	75YR43/ 44					*1 HR*			M				
				55-70	SCL	10YR53	75YR56/C		Y		*1 HR*			M				
				70-100	SC	10YR53	75YR58/M		Y		*24 HR*			M		Y		
				100-120	SC									M				inferred

+ pits only
Augered to 100cm, SC horizon inferred to extend to 120cm.

Gleyed	55cm
SPL	None
Wetness Class	I
Wheat AP	*139*
Potatoes AP	110
Wheat MD	106
Potatoes MD	98
Wheat MB	*33*
Potatoes MB	12
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 5P

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	manganese/ Mottles colour/Abun dance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen- etrable	SPL	Comments
5P	SP30606480	cereal		0-36	MSL	10YR32	NR				1 HR							
				36-43	SCL	75YR43	NR				1 HR	MDCSAB	FR	M				
				43-60	SCL	75YR43/ 44	Mn/F				1 HR	MDCSAB	FR	M				
				60-71	SCL	75YR53	Mn/C		Y		24 HR	MDCPL	FR	P	>0.5			
				71-120	C	05YR43	05YR43/C	05YR52	Y		0	MASS	VM	P	<0.5		Y	

+ pits only
Pit dug to 95 cm, augered to 120 cm

Gleyed	60 cm
SPL	71 cm
Wetness Class	II
Wheat AP	132
Potatoes AP	106
Wheat MD	106
Potatoes MD	98
Wheat MB	26
Potatoes MB	8
Droughtiness Grade	2
Wetness Grade	1
Overall Grade	**2**
Main limitation	**Dr**

(Porosity shown in horizon 5 on pit form incorrectly types as G. It should be P as indicated on data sheet presented with full ALC report. Droughtiness calculation shown incorrectly on Pit form)

Sample point 6

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Manganese/ Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
6	SP30546480	cereal	N/01	0-25	*MSL*	10YR32				2/0	*1 HR*							
				25-35	*MSL*	10YR43					*1 HR*			M				
				35-70	SCL	10YR53	Mn/ 75YR56/C		Y		*1 HR*			M				
				70-85	SCL	75YR53	Mn/ 75YR58/C		Y		0			M				
				85-120	C	05YR44	Mn/ 05YR58/C		Y		0			*P*				

+ pits only
Augered to 120 cm

Gleyed	35 cm
SPL	None
Wetness Class	II
Wheat AP	*139*
Potatoes AP	109
Wheat MD	106
Potatoes MD	98
Wheat MB	*33*
Potatoes MB	11
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 7

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure+	Porosity+	Impen-etrable	SPL	Comments
7	SP30606480	cereal	N/01	0-30	*MSL*	10YR32				*1*	*1 HR*							
				30-52	SCL	10YR42/52	75YR56/C		Y		*1 HR*			M				
				52-65	SCL	10YR53	75YR56/M		Y		*1 HR*			M				
				65-100	C	05YR44	Mn/ 05YR58/C		Y		*1 HR*			*P*		Y	Y	
				100-120	C				Y		*1 HR*			*P*			Y	Inferred

+ pits only
Augered to 100cm, C horizon inferred to extend to 120cm.

Gleyed	30 cm
SPL	65 cm
Wetness Class	II/III
Wheat AP	*133*
Potatoes AP	*109*
Wheat MD	106
Potatoes MD	98
Wheat MB	*27*
Potatoes MB	*11*
Droughtiness Grade	2
Wetness Grade	1 / 2
Overall Grade	**2**
Main limitation	**We/Dr**

Sample Point 8

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
8	SP30706480	cereal	N/01	0-28	MCL	10YR33				2	*1 HR*							
				28-45	SCL	75YR43					*1 HR*			M				
				45-55	SCL	75YR44	75YR56/C				*1 HR*			M				
				55-70	SC	05YR44	Mn/ 75YR58/C		Y		*24 HR*			M				
				70-120	SC						*24 HR*			M				Inferred

+ pits only
Augered to 70cm where stony layer made penetration difficult, SC horizon inferred to extend to 120cm.

Gleyed	55 cm
SPL	None
Wetness Class	I
Wheat AP	*138*
Potatoes AP	*108*
Wheat MD	106
Potatoes MD	98
Wheat MB	*32*
Potatoes MB	*10*
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 9

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
9	SP30806480	cereal	N/3	0-30	*MSL*	10YR32				2	*1 HR*							
				30-50	SCL	75YR43/44					*0*			M				
				50-65	SCL	75YR44	Mn/C				*1 HR*			M				
				65-100	C	05YR44	Mn/M				*1 HR*			*P*			Y	
				100-120	C						*1 HR*			*P*			Y	Inferred

+ pits only
Augered to 100cm, C horizon inferred to extend to 120cm.

Gleyed	Not
SPL	65 cm
Wetness Class	II
Wheat AP	*134*
Potatoes AP	*109*
Wheat MD	106
Potatoes MD	98
Wheat MB	*28*
Potatoes MB	*11*
Droughtiness Grade	*2*
Wetness Grade	1
Overall Grade	***2***
Main limitation	***Dr***

Sample Point 10

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
10	SP30406470	beans	1	0-34	MSL	75YR32					*1 HR*							
				34-45	MSL	75YR43					*1 HR*			M				
				45-64	MSL	75YR44					*1 HR*			M				
				64-77	SCL	75YR53	Mn/C		Y		0			M				
				77-100	C	05YR44	Mn/C		Y		0			*P*			Y	
				100-120	C				Y		0			*P*			Y	inferred

+ pits only
Augered to 100cm, C horizon inferred to extend to 120cm.

Gleyed	64
SPL	77
Wetness Class	II
Wheat AP	*139*
Potatoes AP	*111*
Wheat MD	106
Potatoes MD	98
Wheat MB	*33*
Potatoes MB	*13*
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 11

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
11	SP30506470	beans	1	0-35	MSL	10YR32					*1 HR*							
				35-46	MSL	75YR54					*1 HR*			M				
				46-67	MSL	75YR53	75YR58/M		Y		*1 HR*			M				
				67-90	SCL	05YR44	Mn/C		Y		0			M				
				90-120	SCL				Y		0			M				Inferred

+ pits only
Augered to 90cm, SCL horizon inferred to extend to 120cm.

Gleyed	46
SPL	None
Wetness Class	I
Wheat AP	*153*
Potatoes AP	*111*
Wheat MD	106
Potatoes MD	98
Wheat MB	*47*
Potatoes MB	*13*
Droughtiness Grade	1
Wetness Grade	1
Overall Grade	**1**
Main limitation	**None**

Sample Point 12

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
12	SP30606470	cereal	N/2	0-27	*MSL*	10YR32				*1*	*1 HR*							
				27-38	SCL	75YR44	75YR58/C				*1 HR*			M				
				38-80	C	05YR44	Mn/C				0			*P*			Y	
				80-120	C						0			*P*			Y	Inferred

+ pits only
Augered to 80cm, C horizon inferred to extend to 120cm.

Gleyed	Not
SPL	38
Wetness Class	III
Wheat AP	*126*
Potatoes AP	*103*
Wheat MD	106
Potatoes MD	98
Wheat MB	*20*
Potatoes MB	*5*
Droughtiness Grade	*2*
Wetness Grade	2
Overall Grade	**2**
Main limitation	**We/Dr**

(The original data sheet in the report for this survey showed Sample point 12 final grade as 1. This is an error and should have shown 2. The wetness grade should be shown as Grade 2 rather than Subgrade 3a.)

Sample Point 14

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
14	SP30406460	beans	1	0-33	MSL	75YR43					*1 HR*							
				33-45	SCL	75YR53	Mn/F				*1 HR*			M				
				45-58	SCL	75YR53	75YR46/C		Y		0			M				
				58-120	C	05YR46	Mn/C		Y		0			*P*			Y	

+ pits only
Augered to 120 cm

Gleyed	45
SPL	58
Wetness Class	II
Wheat AP	*132*
Potatoes AP	*109*
Wheat MD	106
Potatoes MD	98
Wheat MB	*26*
Potatoes MB	*11*
Droughtiness Grade	*2*
Wetness Grade	1
Overall Grade	***2***
Main limitation	***Dr***

Sample Point 15

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
15	SP30506457	Perm grass	1	0-33	MSL	75YR43												
				33-49	SCL	75YR54	75YR46/F							M				
				49-60	SCL	75YR53	75YR46/C		Y					M				
				60-100	C	05YR54	Mn/F		Y					*P*			Y	
				100-120	C				Y					*P*			Y	Inferred

+ pits only
Augered to 100cm, C horizon inferred to extend to 120cm (see Sample point 14 as similar)

Gleyed	49
SPL	60
Wetness Class	II
Wheat AP	*134*
Potatoes AP	*110*
Wheat MD	106
Potatoes MD	98
Wheat MB	*28*
Potatoes MB	*12*
Droughtiness Grade	*2*
Wetness Grade	1
Overall Grade	***2***
Main limitation	***Dr***

Sample Point 21

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
21	SP30406450	Perm grass	1	0-24	MSL	75YR43												
				24-46	MSL	75YR44								M				
				46-66	SCL	75YR43	75YR46/C							M				
				66-80	C	05YR44	Mn/C		Y					*P*			Y	
				80-120	C	05YR44			Y					*P*				Inferred

+ pits only
Augered to 80cm, C horizon inferred to extend to 120cm.

Gleyed	66
SPL	66
Wetness Class	II
Wheat AP	*134*
Potatoes AP	*109*
Wheat MD	106
Potatoes MD	98
Wheat MB	*28*
Potatoes MB	*11*
Droughtiness Grade	*2*
Wetness Grade	1
Overall Grade	***2***
Main limitation	***Dr***

Sample Point 22

Sample	Grid ref	Use	Aspect/ Gradient	depth	texture	Colour	Mottles colour/Abundance	Ped colour	Gleyed	Stones >2/ Stones >6	Stone Total/ lithology	Structure+	Consistency+	Subsoil structure	Porosity+	Impen-etrable	SPL	Comments
22	SP30506450	Perm grass	1	0-26	MSL	75YR43												
				26-57	SCL	75YR44	75YR46/C							M				
				57-100	C	05YR44	Mn/C		Y					*P*			Y	
				100-120	C				Y					*P*			Y	Inferred

+ pits only
Augered to 100cm, C horizon inferred to extend to 120cm.

Gleyed	57
SPL	57
Wetness Class	II
Wheat AP	*131*
Potatoes AP	*108*
Wheat MD	106
Potatoes MD	98
Wheat MB	*25*
Potatoes MB	*10*
Droughtiness Grade	*2*
Wetness Grade	1
Overall Grade	***2***
Main limitation	***Dr***

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land south of Myton	Pit 1 (ASP54 59)	Level	CER	Av Rainfall 640mm ATO 1488 day C	River Terrace gravels
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days Climatic Grade 1 Exposure Grade	PSD SAMPLES TAKEN
78/97	17/12/97	SP30186385	JL/RR		TS (0 25cm) MSL s 69% z 20% c 11%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	37	MSL	10YR33	4% >2cm 2% 2 m 6% HR			MDM CSAB	FR		G	C		Clear wavy
2	78	MSL	75YR44	23% HR (S&D)			MD CSAB	FR	M	G	F		Clear wavy
3	90	LMS	75YR46	34% HR (S&D)			WD CAB	FR	G	G			Gradual wavy
4	115	MS	75YR46	44% HR (S&D)			WD FSAB	VFR	M	G			

Profile Gleyed From

Slowly Permeable Horizon From

Wetness Class I

Wetness Grade 1

Available Water	Wheat	112mm
	Potatoes	98mm
Moisture Deficit	Wheat	105mm
	Potatoes	97mm
Moisture Balance	Wheat	7mm
	Potatoes	1mm

Droughtiness Grade (Calculated to 120 cm)

Final ALC Grade 2

Main Limiting Factor(s) DR

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land south of Myton	Pit 2(ASP 131)	2 SE	CER	Av Rainfall 613mm ATO 1413 day C	Mercia Mudstone Group
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 136 Climatic Grade 1 Exposure Grade	PSD SAMPLES TAKEN TS (0 25CM) SCL/MSL s 56% z 26% c 18%
78/97	17/12/97	SP31546268	SH/SK(JL/RR)		

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	30	MCL/ SCL	10YR 4/3			F	MDC MSAB	FR			CF		Smooth clear
2	50	SCL	75YR 4/4	3% 2 m 24% 2 m 26% HR (S&D)		F	MD SCAB	FR/FM	M	G	FFeVF		Smooth clear
3	77	SCL layers of C	75YR 4/4			C/M	MD SCAB	FM	M	G	FFeVF		Gradual clear
4	90	SCL layers of C	75YR 5/3		c d f 75YR 5/8	M	MD SCAB	FM	M	G			Wavy clear
5	120	MS					MDC MPL	FM	M	G			

Profile Gleyed From 71cm

Slowly Permeable Horizon From

Wetness Class I

Wetness Grade 1

Available Water	Wheat	121mm
	Potatoes	96mm
Moisture Deficit	Wheat	106mm
	Potatoes	97mm
Moisture Balance	Wheat	+15mm
	Potatoes	1mm
Droughtiness Grade 2		(Calculated to 120 cm)

Final ALC Grade 2

Main Limiting Factor(s) DR

Remarks

*H3 Fe pan from 59cm 69cm (10cm deep) This is indurated but broken and not continuous around pit easily penetrable to water

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land south of Myton	Pit 3(ASP 158)	2 SW	PLO	Av Rainfall 625 mm ATO 1420 day C FC Days 135 Climatic Grade 1 Exposure Grade	River Terrace Gravels
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
78/97	17/12/97	SP31006250	JL/RR (SH)		TS 0 25cm MSL s 66% z 22% c 12%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	35	MSL	75YR3/3	2% > 2cm 2% < 2cm 4% HR (vis)			MDCSAB	FR	M	G	CF+VF		Smooth abrupt
2	53	MSL	75YR4/4			F	MDCAB	FR	M	G	FF+VF		Irregular clear
3	89	LMS	75YR5/6			F	WDMPL breaking to MDMSAB	FR	M	G	FVF		Smooth sharp
4	120	SCL	75YR4/4 4/6		c d f 75YR 5/8 p t h f 10YR 6/1		MDCPL	FR	P	G			

Profile Gleyed From

Slowly Permeable Horizon From

Wetness Class I

Wetness Grade 1

Available Water Wheat 125mm

Potatoes 97mm

Moisture Deficit Wheat 107mm

Potatoes 99mm

Moisture Balance Wheat 18mm

Potatoes 2mm

Droughtiness Grade 2 (Calculated to 120 cm)

Final ALC Grade 2

Main Limiting Factor(s) DR

Remarks

At base of H2 for 1 2cm (53 55cm) Fe pan slightly cemented

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE			PARENT MATERIAL
Land south of Myton	Pit 4(ASP 182)	4 SW	Cereals	Av Rainfall	621mm	Mercia Mudstone Group
				ATO	1425 day C	
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days	134	PSD SAMPLES TAKEN
78/97	17/12/97	SP31226230	RR + JLP	Climatic Grade	1	Topsoil (0 25cm)
				Exposure Grade	1	ACL/C s 26% z 39% c 35%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	34	HCL	75YR 3/3	2% HR ( )			MDCSAB	FM		G	CF+ VF		Abrupt smooth
2	70	C	5YR 44/34			F	MDCAB breaking down to MSAB	FM		G	FF + VF		Gradual smooth
3	80	C and mudstone fragments	25YR 34				MASS breaking to small fragments of mudstone	FM		P			

Profile Gleyed From

Slowly Permeable Horizon From 70 ? porosity declining no roots but crumbly

Wetness Class II Looks more like mudstone

Wetness Grade 3a

Available Water	Wheat	125mm
	Potatoes	117mm
Moisture Deficit	Wheat	107mm
	Potatoes	100mm
Moisture Balance	Wheat	+18mm
	Potatoes	+17mm

Droughtiness Grade 2 (Calculated to 100 cm)

Final ALC Grade 3a

Main Limiting Factor(s) We

Remarks

Subsoil very dry Pit dug to 80
Augered to 100

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land south of Myton	Pit5 (ASP7)	1 N	CER	Av Rainfall 636mm ATO 1429 day C FC Days 139 Climatic Grade 1 Exposure Grade 1	Mercia Mudstone Group
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
78/79	17/12/97	SP30606480	SH/SK		T S 0 25cm MSL s 63% z 23% c 14%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	36	MSL	10YR 3/2	1% HR ( )						G	MF + VF		Wavy abrupt
2	43	SCL	75YR 4/3	1% HR ( )			MDCSAB	FR	M	G	CF		Sharp clear
3	60	SCL	75YR4/3 4/4	1% HR ( )		mn at bottom of horizon	MDCAB CPL towards bottom of horizon	FR	M	G	FF+VF		Sharp clear
4	71	SCL	75YR5/3	24% HR (S & D)		common	MDCPL breaking to MAB	FR	P	G	FVF		Sharp abrupt
5	Dug to 95 augered to 120	C	05YR4/3 25YR4/6 (05YR5/2)	0%	05YR5/8	common	MASS	FM/VM	P	~~G~~ VP	FVF		

Profile Gleyed From 60

Slowly Permeable Horizon From 71

Wetness Class II

Wetness Grade 1

Available Water Wheat ~~136~~mm 132

Potatoes ~~110~~mm 106

Moisture Deficit Wheat 106mm

Potatoes 98mm

Moisture Balance Wheat ~~30~~mm 26

Potatoes ~~12~~mm 8

Droughtiness Grade ~~1~~ 2 (Calculated to 120 cm)

Final ALC Grade ~~1~~ 2

Main Limiting Factor(s) ~~NONE~~ Droughtiness

Remarks

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land of Mynton	ASP 33 Pit 6	2 SW	PGR	Av Rainfall 640mm ATO 1418day C	Mercia Mudstone Group
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 139 Climatic Grade 1 Exposure Grade	PSD SAMPLES TAKEN
78/97	17/12/98	SP30206430	SK/SH		TS 0 25cm MSL s 62% z 25% c 13%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	32	MSL	75YR43	2% HR ( )							CF+VF		Smooth abrupt
2	37 58	SCL	75YR53/52 (75YR52)	40%HR (S&D)	75YR46 Common	common	MDMSAB	FR	G	G	FF+VF		Wavy gradual
3	Dug 70 Augered 120	C	5YR44	0%	75YR 4/6 Many	common	Massive (WKCPR)	VM	P	P	FVF		

Profile Gleyed From 32

Slowly Permeable Horizon From 37 58

Wetness Class III

Wetness Grade 2

Available Water Wheat 124mm

Potatoes 101mm

Moisture Deficit Wheat 105mm

Potatoes 97mm

Moisture Balance Wheat 21mm

Potatoes 2mm

Droughtiness Grade 2 (Calculated to 120cm)

Final ALC Grade 2

Main Limiting Factor(s) We /Dr

Remarks

Although H2 has wavy lower boundary both highest and lowest depths fall within limits of WCIII

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
South of Myton	Pit 7 (ASP 92)	1 NW	CER	Av Rainfall 6 31 mm ATO 1424 day C	River Terrace Gravels
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 137 Climatic Grade 1 Exposure Grade	PSD SAMPLES TAKEN
78/97	7/12	SP 3068 6308	SK/SH		TS 0 25 cm MSL/SCL s 56% z 27% c 17%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	32	SCL	75YR43	2% VIS HR							CF		Smooth gradual
2	49	SCL	75YR53	1% HR VIS	Common 75YR46	Common	MDC SAB	FR	M	G	FF		Smooth gradual
3	88	SCL	10YR52 From 77 88 to 25Y62	Ba ds of HR t d m 40% HR T t l b 77 m	c d f 75YR4/6	C	MDCPL breaking to MDCAB	FR	P	G P from 77cm			Smooth abrupt
4	dug to 90 120	C	25762		c d f 75 YR 416	C	MDCPL CPR	FM	M	P			

Profile Gleyed From 32

Slowly Permeable Horizon From 77

Wetness Class II

Wetness Grade 2

Available Water Wheat 124mm

Potatoes 96mm

Moisture Deficit Wheat 106mm

Potatoes 98mm

Moisture Balance Wheat 18mm

Potatoes 2mm

Droughtiness Grade 2 (Calculated to 120 cm)

Final ALC Grade 2

Main Limiting Factor(s) We/Dr

Remarks

* Below 77 cm
SCL = MDCPL FR < 0 5 porosity (P)

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
South of Myton	Pit 8 ASP 106	2 NE	CER	Av Rainfall 631 mm ATO 1413 day C	Mercia Mudstone Group
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 136 Climatic Grade 1 Exposure Grade	PSD SAMPLES TAKEN
78/97	17/12/97	SP30606480	SH/SK		TS (0 25 cm) MCL s 49% z 30% c 21%

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	30	MCL	75YR3/2	3% HR ( )						G	CF+VF		Wavy clear
2	43	HCL	75YR5/2	5% HR ( )	c distinct f 75YR 5/6		WKCSAB	FM	M	G	FF+VF		Smooth abrupt
3	70 augered to 120	C	25YR3/4 4/6	0	c d f 5YR 5/6	C	MASS	FM		P	FVF		

Profile Gleyed From 30

Slowly Permeable Horizon From 43

Wetness Class III

Wetness Grade 3a

Available Water	Wheat	130mm
	Potatoes	107mm
Moisture Deficit	*Wheat*	*106mm*
	Potatoes	97mm
Moisture Balance	Wheat	24mm
	Potatoes	10mm
Droughtiness Grade 2		(Calculated to 120 cm)

Final ALC Grade 3a

Main Limiting Factor(s) We

Remarks

*H2 at top of horizon 8% HR becoming less with depth to 1 2% at bottom (overall 5%)

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Land south of Myton	Pit 9 (ASP)	Level 2 S	CER	Av Rainfall 621mm ATO 1425 day C FC Days 134 Climatic Grade 1 Exposure Grade	Alluvium
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
78/97	22/1/98	SP31086215	SH & SK		NONE

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	22	HCL	10YR42		0	0	0				CF		Smooth clear
2	30	C	25YR52		m d f 75YR 46/56	Few	WKCSAB	FM		P	FF+VF		Smooth clear
3	60	C	05Y 51/52		m d f 75YR 46/56	Few	MDCPR	FM		P	FF + VF		

Profile Gleyed From 22cm

Slowly Permeable Horizon From 30cm

Wetness Class IV

Wetness Grade 3b

Available Water Wheat mm

Potatoes mm

Moisture Deficit Wheat mm

Potatoes mm

Moisture Balance Wheat mm

Potatoes mm

Droughtiness Grade (Calculated to cm)

Final ALC Grade 3b

Main Limiting Factor(s) We

Remarks