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MEDWAY TOWNS LOCAL PLAN
Site 43, Hoo St Werburgh

Agricultural Land Classification
February 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

ADAS Reference: 2008/008/96
MAFF Reference: EL 20/1376
LUPU Commission: 02367

AGRICULTURAL LAND CLASSIFICATION REPORT
MEDWAY TOWNS LOCAL PLAN, SITE 43, HOO ST WERBURGH

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 79 ha of land on the north-western side of the village of Hoo St Werburgh, Kent. The survey was carried out in February 1996.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) Land Use Planning Unit Reading in connection with the Medway Towns Local Plan. This survey supersedes any previous ALC surveys on this land.

3. The work was carried out under sub-contracting arrangements by NA Duncan & Associates and was supervised by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey, the agricultural land on the site comprised an area of permanent grass at the northern end around Mill Farm, with the remaining area either sown to winter cereals, ploughed or in set-aside. Also included within the site boundary is the A 228 road with areas alongside the road used for residential or industrial development. On the southern side of the site is an area of playing fields associated with the school, whilst on the eastern boundary on the northern edge of the village is an area of public open space, including a childrens play area.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000 it is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% agricultural area	% total site area
3a	20.8	36.9	26.3
3b	35.5	63.1	44.9
Other	22.8		28.8
Total survey area	56.3	100.0	
Total site area	79.1		100.0

7. The fieldwork was conducted at an average density of one auger boring per hectare. A total of 62 borings and 3 soil pits were described.

8. The site has been principally mapped as Subgrade 3b, moderate quality agricultural land, with good quality agricultural land, Subgrade 3a or the more steeply sloping land. The presence of heavy textured clayey soils developed on the London Clay mean that wetness and workability restrictions affect the whole of the site and the severity of the limitation reflects the land grading. The flatter land at the northern and southern ends of the site has a moderately severe wetness and workability limitation due to the presence of clay textured soils with slowly permeable subsoil horizons, whilst on the more steeply sloping land the soils are better drained, with fine loamy upper horizons overlying slowly permeable clay at depth giving rise to a moderate wetness and workability limitation.

FACTORS INFLUENCING ALC GRADE

Climate

9. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	TQ 769 725
Altitude	m, AOD	40
Accumulated Temperature	day°C	1453
Average Annual Rainfall	mm	618
Field Capacity Days	days	118
Moisture Deficit, Wheat	mm	122
Moisture Deficit, Potatoes	mm	119

11. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

12. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that the area is relatively dry and warm. The site is not considered to be exposed or subject to any particular frost risk and as such no climatic limitation exists on this site.

Site

14. The site generally has a southwesterly aspect falling from a high point of 60 m AOD at the north eastern end of the site to approximately 25 m AOD on the flatter land in the south. Slopes at the northern and southern ends of the site are typically in the range 0-2°, whilst the central part has gradients of 3-5°. The site is not prone to flooding. There are therefore no site limitations that will affect the grading of the area.

Geology and soils

15. The published geological information (BGS, 1977), shows the solid geology of the area to comprise London Clay which is overlain by Head in the north-east and south of the site.

16. There is no detailed published soil map for this district but the reconnaissance soil survey map (SSEW, 1983) shows the area to comprise soils of the Ratsborough association, with Windsor association occurring to the west of the A 228 road. Ratsborough soils are developed on thick drift of varied origin and can be highly variable in nature. They are described as 'fine silty or fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging, with some slowly permeable seasonally waterlogged fine loamy over clayey and clayey soils' (SSEW, 1983). The Windsor soils are described as 'slowly permeable seasonally waterlogged clayey soils mostly with brown subsoils' (SSEW, 1983).

AGRICULTURAL LAND CLASSIFICATION

17. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

18. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix III.

Subgrade 3a

19. Two areas of Subgrade 3a, good quality agricultural land, have been mapped, which generally occur on the more steeply sloping land of the site. The major limitation associated with these areas is due to wetness and workability imperfections. The soils in these areas typically comprise Head deposits overlying London Clay, or the better drained soils developed directly on the London Clay. In the case of the former, the soils typically have a heavy clay loam topsoil with few small flint stones overlying a mottled, slightly stony clay loam, sandy clay loam or sandy clay upper subsoil with moderate structure. Below 50-70 cm depth, the lower subsoil is typically poorly structured clay which is considered to be slowly permeable. These soils are assessed as Wetness Class II (see Appendix II). In some profiles, stony subsoil horizons occur, which in this low rainfall area will also give rise to a droughtiness restriction. On the lower slopes at the southern edge of the main Subgrade 3a area, well or moderately well drained clay soils developed on the London Clay have been mapped. These soils have a clay topsoil over a moderately structured clay subsoil with little or no ochreous mottling and are assessed as Wetness Class I or II. Consequently with the heavy clay loam or clay topsoil textures and the associated drainage imperfections these areas will suffer a moderate wetness and workability limitation restricting the land to this subgrade.

Subgrade 3b

20. On the lower lying land and on the flatter land at the top of the hill, moderate quality agricultural land, Subgrade 3b, has been mapped. These areas comprise heavy textured soils developed on the London Clay, which typically have clay textured topsoils overlying mottled, slowly permeable clay subsoils, which have been assessed as Wetness Class III. These soils therefore have a moderately severe wetness and workability limitation, restricting the versatility of the land, principally in terms of timing of cultivations and stocking, if structural damage to the soils is to be avoided, limiting the land quality to Subgrade 3b.

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APPENDIX I

DESCRIPTIONS OF THE 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 includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this 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 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When 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 the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years.[2]
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 only wet within 40 cm depth for 30 days in most years.
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 present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

[1] The number of days is not necessarily a continuous period.
[2] 'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used:

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

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)**: Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT**: Best grade according to soil droughtiness.

8. 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				

9. **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				

Soil Pits and Auger Borings

1. **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)

2. **MOTTLE COL**: Mottle colour using Munsell notation.

3. **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% +

4. **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

5. **PED. COL**: Ped face colour using Munsell notation.

6. **GLEY**: If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **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 sandston	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock		

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

degree of development	**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	

9. **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

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness:
G: good **M**: moderate **P**: poor

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations:

APW: available water capacity (in mm) adjusted for wheat
APP: available water capacity (in mm) adjusted for potatoes
MBW: moisture balance, wheat
MBP: moisture balance, potatoes.

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ77307310	PGR	N	02	030	055	3	3A	144	22	104	-15	3A				WE	3A	DR
1P	TQ77407250	SET	SE	02	030		1	3A	125	3	102	-17	3A				WE	3A	DROUGHT
2	TQ77407310	PGR	N	01	050	075	2	3A	000	0	000	0					WE	3A	
2P	TQ77007270	SET	SW	02	045	055	2	3A	133	11	107	-12	3A				WE	3A	DROUGHT
3	TQ77207300	PGR	N	02	030	030	3	3B	000	0	000	0					WE	3B	
3P	TQ76707230	PLO	S	01	033	050	3	3B	126	4	103	-16	3A				WE	3B	
4	TQ77307300	FCD	N	01	030	030	3	3B	000	0	000	0					WE	3B	
5	TQ77407300	PGR	N	01	035	035	3	3B	000	0	000	0					WE	3B	
6	TQ77507300	PGR	N		035	035	3	3B	000	0	000	0					WE	3B	
7	TQ77007290	PGR	S		032	032	3	3B	000	0	000	0					WE	3B	
10	TQ77307290	FCD	N		030	030	3	3B	000	0	000	0					WE	3B	
11	TQ77407290	PGR	N		045	045	2	3A	000	0	000	0					WE	3A	NEAR 3B
14	TQ76907280	PGR	SW	05	033	055	2	3A	000	0	000	0					WE	3A	
16	TQ77107280	PGR	S	01	030	030	3	3B	000	0	000	0					WE	3B	
17	TQ77207280	PGR	S	01	030	030	3	3B	000	0	000	0					WE	3B	
18	TQ77307280	PGR	SW	01	030	055	2	3A	000	0	000	0					WE	3A	
19	TQ77407280	PGR	S	01	000		1	2	105	-17	116	-3	3A				DR	3A	DIST
22	TQ76807270	CER	S	02	030	060	2	3A	000	0	000	0					WE	3A	NEAR
24	TQ77007270	SET	SW	02	050	050	2	3A	129	7	103	-16	3A				WE	3A	DR
25	TQ77107270	PGR	S	02	030	060	2	3A	000	0	000	0					WE	3A	
26	TQ77207270	PGR	S	04	065	065	2	3A	000	0	000	0					WE	3A	
27	TQ77307270	PGR	SW	03	030	060	2	3A	127	5	101	-18	3A				WE	3A	DR
28	TQ77407270	PGR	SW	02	000	080	1	2	147	25	116	-3	2				WE	2	DR
29	TQ76707260	CER	S	03	035	035	3	3B	000	0	000	0					WE	3B	
30	TQ76807260	PLO	SW	03	030	030	3	3B	000	0	000	0					WE	3B	
31	TQ76907260	CER	W	02	027	027	2	3A	000	0	000	0					WE	3A	
32	TQ77007260	CER	SW	02	027	027	3	3B	000	0	000	0					WE	3B	
33	TQ77107260	CER	SE	02	065	065	2	3A	121	-1	108	-11	3A				WE	3A	DR
34	TQ77207260	PGR	S	04	030	065	2	3A	000	0	000	0					WE	3A	
35	TQ77307260	PGR	SW	04	037	037	3	3B	000	0	000	0					WE	3B	
36	TQ77407260	PGR	SW	02	070	070	2	3A	000	0	000	0					WE	3A	DR
37	TQ76607250	CER	SW	03	035	035	3	3B	000	0	000	0					WE	3B	
38	TQ76707250	PLO	S	02	030	030	3	3B	000	0	000	0					WE	3B	
39	TQ76807250	PLO	SW	03	035	035	3	3B	000	0	000	0					WE	3B	
40	TQ76907250	PLO	S	05	033	033	3	3B	000	0	000	0					WE	3B	
41	TQ77007250	CER	S	04	025	070	2	3A	000	0	000	0					WE	3A	
42	TQ77107250	CER	S	03	000		1	3A	137	15	113	-6	2				WE	3A	
43	TQ77207250	PGR	S	03	030	050	3	3B	000	0	000	0					WE	3B	SPL 30
44	TQ77307250	SET	S	02	035	035	2	3A	000	0	000	0					WE	3A	
45	TQ77407250	SET	SE	02	030	030	2	3A	000	0	000	0					WE	3A	
46	TQ77507250	SET	S	03	030	030	3	3B	118	-4	095	-24	3A				WE	3B	
47	TQ76507240	CER	SW	02	035	035	3	3B	000	0	000	0					WE	3B	

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
48	TQ76607240	PLO	S	02	033	033	3	3B	000	0	000	0					WE	3B	
49	TQ76707240	PLO	S	02	030	030	3	3B	000	0	000	0					WE	3B	
50	TQ76807240	PLO	S	01	030	030	3	3B	000	0	000	0					WE	3B	
51	TQ76907240	CER	SW	01	027	027	3	3B	000	0	000	0					WE	3B	
52	TQ77007240	CER	SW	03	028	028	3	3B	000	0	000	0					WE	3B	
53	TQ77107240	CER	S	03	028	028	3	3B	000	0	000	0					WE	3B	
54	TQ77207240	SET	S	01	035	035	3	3B	000	0	000	0					WE	3B	
55	TQ77307240	SET	S	02	027	027	3	3B	000	0	000	0					WE	3B	
56	TQ77407240	SET	S	03	033	033	2	3A	000	0	000	0					WE	3A	NEAR 3B
58	TQ76507230	PLO	S		030	030	3	3B	000	0	000	0					WE	3B	
59	TQ76607230	PLO	S		030	030		3B	000	0	000	0					WE	3B	
60	TQ76707230	PLO	S	01	030	030	3	3B	000	0	000	0					WE	3B	
65	TQ76407220	CER	N		028	028			000	0	000	0					WE	3B	
66	TQ76507220	CER	N		032	032	3	3B	000	0	000	0					WE	3B	
67	TQ76607220	CER	N		030	030	3	3B	000	0	000	0					WE	3B	
68	TQ76707220	PLO	N		035	035	3	3B	000	0	000	0					WE	3B	
73	TQ76307210	CER	N	01	033	033	3	3B	000	0	000	0					WE	3B	
74	TQ76407210	CER	N	02	030	030	3	3B	000	0	000	0					WE	3B	
75	TQ76507210	CER	N	02	036	036	3	3B	000	0	000	0					WE	3B	
76	TQ76607210	CER	N	02	030	030	3	3B	000	0	000	0					WE	3B	
77	TQ76707210	CER	N	01	030	030	3	3B	000	0	000	0					WE	3B	
78	TQ76607200	CER	N	01	033	033	3	3B	125	3	102	-17	3A				WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-30	scl	10YR43 00						0	0	HR	3						
	30-45	scl	10YR43 00	10YR21 00	M			Y	0	0	HR	5		M				
	45-55	sc	10YR53 00	75YR56 00	C			Y	0	0	HR	5		M				
	55-80	c	25Y 72 00	75YR58 00	M			Y	0	0	HR	2		P			Y	
	80-120	msl	10YR54 00	75YR56 00	C			Y	0	0		0		M			Y	
1P	0-30	c	10YR53 00						2	0	HR	2						
	30-120	c	75YR54 00				75YR65 00	S	0	0		0	STMAB	FM	P	Y		
2	0-35	hcl	10YR33 00						0	0	HR	5						
	35-50	hcl	10YR55 00						0	0	HR	4						
	50-75	hcl	10YR63 00	75YR56 00	C			Y	0	0	HR	2						
	75-110	c	10YR63 00	75YR58 00	M			Y	0	0	HR	2					Y	
2P	0-30	hcl	75YR44 00						4	0	HR	8						
	30-45	sc	10YR54 00						0	0	HR	15	MDMSAB	FR	G			
	45-55	sc	10YR54 00	75YR56 00	C			S	0	0	HR	8	MDCSB	FM	M			
	55-75	sc	10YR64 00	75YR56 58	M			Y	0	0	HR	2	WKVCSB	FM	P	Y	Y	
	75-120	c	75YR64 00	05Y 72 00	M			Y	0	0		0	MDVCAB	FM	P	Y	Y	
3	0-30	c	10YR44 00						0	0	HR	3						
	30-70	c	10YR63 00	10YR68 00	M			Y	0	0		0					Y	
	70-90	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	90-120	c	75YR54 00	75YR56 00	C			Y	0	0		0					Y	
3P	0-33	c	10YR53 00						2	0	HR	3						
	33-50	c	10YR64 00	75YR56 00	C			Y	0	0		0	STMAB	FM	P	Y		
	50-120	c	10YR63 00	75YR56 00	M		25Y 72 00	Y	0	0		0	STCAB	FM	P	Y	Y	
4	0-30	hcl	10YR33 00						4	0	HR	7						
	30-50	c	10YR63 00	75YR56 00	M			Y	0	0	HR	8					Y	
	50-80	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
	80-120	c	75YR63 00	75YR65 00	C			Y	0	0		0					Y	
5	0-35	hcl	10YR43 00						0	0	HR	4						
	35-75	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	75-120	c	25Y 73 00	10YR66 00	C			Y	0	0		0					Y	
6	0-35	hcl	10YR43 00						0	0	HR	5						
	35-80	c	25Y 73 00	75YR58 00	C			Y	0	0	HR	1					Y	
	80-120	c	05Y 82 00	10YR68 00	M			Y	0	0	HR	1					Y	
7	0-32	hcl	10YR43 00						0	0	HR	3						
	32-60	c	10YR64 00	75YR56 00	C			Y	0	0	HR	3					Y	
	60-120	c	10YR63 00	75YR58 00	C			Y	0	0		0					Y	
10	0-30	hcl	75YR33 00						3	0	HR	6						
	30-50	c	10YR53 63	10YR56 00	M			Y	0	0	HR	7					Y	
	50-120	c	25Y 63 00	75YR58 00	M			Y	0	0		0					Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
11	0-35	hcl	10YR43 00						0	0	HR	0						
	35-45	hcl	10YR43 54						0	0	HR	18						
	45-70	c	10YR64 00	75YR58 00	M			Y	0	0		0					Y	
	70-120	c	75YR64 00	75YR66 00	C			Y	0	0		0					Y	
14	0-33	hcl	10YR33 00						0	0	HR	0						
	33-55	hcl	10YR54 00	75YR56 00	C			S	0	0	HR	12						
	55-120	c	10YR63 00	75YR56 00	M			Y	0	0	HR	3					Y	
16	0-30	hcl	75YR43 00						0	0	HR	5						
	30-50	hcl	10YR64 00	75YR56 00	C			Y	0	0	HR	7					Y	
	50-80	c	25Y 63 00	75VR58 00	M			Y	0	0	HR	5					Y	
	80-120	c	75YR54 00	75YR56 00	C			Y	0	0		0					Y	
17	0-30	hcl	75YR43 00						0	0	HR	5						
	30-50	c	10YR64 00	75YR56 00	C			Y	0	0	HR	8					Y	
	50-85	c	25Y 63 00	75YR56 00	C			Y	0	0	HR	1					Y	
	85-120	c	25Y 62 00	75YR58 00	M			Y	0	0		0					Y	
18	0-30	hcl	10YR43 00						0	0	HR	7						
	30-55	c	10YR54 00	10YR56 00	C			S	0	0	HR	8						
	55-80	c	10YR63 00	10YR66 00	M			Y	0	0		0					Y	
	80-120	c	75YR54 00	75VR56 00	C			Y	0	0		0					Y	
19	0-50	hcl	75YR43 00						0	0	HR	5						
	50-70	hcl	75YR33 00						0	0	HR	5		M				
22	0-30	hcl	10YR43 00						0	0	HR	3						
	30-60	hcl	10YR64 00	75YR56 00	C			Y	0	0	HR	2						
	60-120	c	10YR73 00	75YR56 00	C			Y	0	0		0					Y	
24	0-30	hcl	10YR43 00						4	0	HR	8						
	30-50	hcl	10YR44 54						0	0	HR	15		M				
	50-80	sc	10YR63 00	75YR56 00	C			Y	0	0	HR	3		P			Y	
	80-120	c	75YR63 00	75YR56 61	C			Y	0	0		0		P			Y	
25	0-30	hcl	75YR43 00						0	0	HR	5						
	30-60	c	10YR54 00	75YR56 00	C			S	0	0	HR	10						
	60-75	c	10YR64 00	75YR56 00	C			Y	0	0		0					Y	
	75-120	c	75YR54 00	75YR56 00	F			S	0	0		0					Y	
26	0-30	hcl	10YR43 00						0	0	HR	5						
	30-65	hcl	75YR55 00						0	0	HR	2						
	65-90	c	10YR64 00	75YR56 00	C			Y	0	0	HR	5					Y	
	90-120	c	10YR63 00	75YR58 00	M			Y	0	0	HR	15					Y	
27	0-30	hcl	10YR43 00						0	0	HR	10						
	30-60	scl	75YR54 00	05YR56 00	C			S	0	0	HR	12		M				
	60-120	sc	75YR54 00	75YR56 00	C			Y	0	0	HR	11		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
28	0-60	hcl	75YR43 00						0	0	HR	7						
	60-80	hcl	75YR44 00						0	0	HR	8		M				
	80-120	scl	75YR55 00						0	0	HR	15		P			Y	
29	0-35	c	10YR53 00						2	0	HR	3						
	35-70	c	10YR64 00	10YR66 00	M			Y	0	0		0					Y	
	70-120	c	75YR64 00	75YR66 00	F			Y	0	0		0					Y	
30	0-30	hcl	10YR43 00						2	0	HR	4						
	30-60	c	10YR63 00	75YR58 00	C			Y	0	0		0					Y	
	60-120	c	10YR63 00	10YR56 00	C			Y	0	0		0					Y	
31	0-27	c	10YR43 00						2	0	HR	4						
	27-70	c	75YR54 00	75YR55 00	C			S	0	0		0					Y	
	70-120	c	75YR54 00	75YR56 00	C			S	0	0		0					Y	
32	0-27	c	10YR53 00						2	0	HR	5						
	27-65	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	65-120	c	75YR54 00	75YR55 00	F			Y	0	0		0					Y	
33	0-30	hcl	10YR43 00						3	0	HR	7						
	30-65	hcl	75YR44 54						0	0	HR	8		M				
	65-100	sc	75YR54 00	75YR56 00	C			S	0	0	HR	5		P			Y	
34	0-30	hcl	10YR43 00						0	0	HR	5						
	30-65	hcl	10YR55 00	10YR56 00	F			S	0	0	HR	5						
	65-80	c	10YR64 00	75YR56 00	C			Y	0	0	HR	3					Y	
	80-120	c	10YR63 00	75YR58 00	M			Y	0	0	HR	1					Y	
35	0-37	hcl	10YR43 00						0	0	HR	0						
	37-60	c	75YR64 00	75YR56 00	C			Y	0	0	HR	2					Y	
	60-120	c	75YR54 00	75YR55 00	F			S	0	0		0					Y	
36	0-30	hcl	75YR43 00						0	0	HR	8						
	30-70	scl	75YR55 00						0	0	HR	12						
	70-90	sc	75YR54 00	75YR56 00	C			Y	0	0	HR	15					Y	
	90-120	c	75YR54 00	75YR58 61	C			Y	0	0	HR	10					Y	
37	0-35	c	10YR43 00						2	0	HR	4						
	35-70	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
	70-120	c	75YR64 00	75YR66 00	C			Y	0	0		0					Y	
38	0-30	c	10YR43 00						1	0	HR	2						
	30-65	c	10YR64 00	10YR66 00	C			Y	0	0	HR	2					Y	
	65-120	c	75YR54 00	75YR56 00	F			Y	0	0		0					Y	
39	0-35	c	10YR43 00						1	0	HR	2						
	35-65	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	65-120	c	25Y 63 00	75YR56 00	M			Y	0	0		0					Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
40	0-33	c	10YR43 00						2	0	HR	4						
	33-70	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	70-120	c	75YR54 00	75YR55 00	F			Y	0	0		0					Y	
41	0-25	c	10YR43 00						2	0	HR	3						
	25-70	c	10YR55 00	10YR56 00	F			S	0	0		0						
	70-120	c	75YR54 00					S	0	0		0					Y	
42	0-28	c	10YR43 00						2	0	HR	4						
	28-120	c	75YR54 00						0	0		0		M				
43	0-30	c	10YR43 00						0	0	HR	2						
	30-50	c	10YR64 00	75YR56 00	C			Y	0	0		0						
	50-80	c	10YR63 00	75YR56 00	M			Y	0	0		0					Y	
	80-120	c	75YR53 00	75YR55 00	F			Y	0	0		0					Y	
44	0-35	c	10YR53 00						0	0	HR	2						
	35-120	c	75YR64 00	75YR65 00	C			S	0	0		0					Y	
45	0-30	c	10YR43 00						1	0	HR	3						
	30-120	c	75YR54 00	75YR55 00	F			S	0	0		0					Y	
46	0-30	c	10YR43 00						4	0	HR	10						
	30-55	c	10YR64 00	10YR68 00	C			Y	0	0	HR	10		P			Y	
	55-80	c	75YR65 00	75YR56 00	C			Y	0	0		0		P			Y	
	80-120	c	75YR54 63	75YR56 00	C			Y	0	0		0		P			Y	
47	0-35	c	10YR43 00						2	0	HR	4						
	35-60	c	10YR53 64	75YR56 00	C			Y	0	0		0					Y	
	60-120	c	10YR64 00	10YR66 00	M			Y	0	0	CH	1					Y	
48	0-33	c	10YR53 00						2	0	HR	3						
	33-70	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
	70-120	c	75YR64 00	75YR66 00	F			Y	0	0		0					Y	
49	0-30	c	10YR53 00						3	0	HR	6						
	30-65	c	25Y 63 62	75YR58 00	M			Y	0	0	HR	4					Y	
	65-120	c	75YR64 00	75YR66 00	C			Y	0	0	HR	4					Y	
50	0-30	c	10YR53 00						2	0	HR	2						
	30-70	c	25Y 63 00	10YR68 00	C			Y	0	0		0					Y	
	70-90	c	25Y 52 53	75YR56 00	C			Y	0	0		0					Y	
	90-120	c	25Y 62 72	75YR68 00	M			Y	0	0		0					Y	
51	0-27	c	10YR53 00						1	0	HR	2						
	27-55	c	10YR63 00	75YR58 00	C			Y	0	0	HR	10					Y	
	55-120	c	10YR54 00	10YR56 00	F			Y	0	0		0					Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
52	0-28	c	10YR53 00						1	0	HR	2						
	28-70	c	10YR63 00	75YR56 00	C			Y	0	0		0					Y	
	70-120	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
53	0-28	c	10YR53 00						2	0	HR	3						
	28-50	c	10YR64 00	10YR66 00	C			Y	0	0	HR	5					Y	
	50-70	c	10YR54 00	10YR56 00	F			Y	0	0		0					Y	
	70-120	c	75YR54 00	10YR56 00	F			Y	0	0		0					Y	
54	0-35	c	10YR43 00						1	0	HR	2						
	35-60	c	10YR54 00	10YR66 00	C			Y	0	0	HR	1					Y	
	60-80	c	25Y 63 00	75YR58 00	M			Y	0	0		0					Y	
	80-120	c	25Y 62 00	75YR58 61	M			Y	0	0		0					Y	
55	0-27	c	10YR53 00						2	0	HR	3						
	27-70	c	10YR64 00	75YR66 00	C			Y	0	0		0					Y	
	70-120	c	10YR54 00	10YR56 00	F			Y	0	0		0					Y	
56	0-120	c	75YR64 00	75YR56 00	C			S	0	0		0					Y	
58	0-30	c	10YR53 00						0	0	HR	2						
	30-90	c	10YR63 00	10YR56 00	M			Y	0	0		0					Y	
	90-120	c	75YR64 00	75YR66 00	F			Y	0	0		0					Y	
59	0-30	c	10YR43 00						2	0	HR	3						
	30-70	c	10YR64 00	75YR66 00	C			Y	0	0		0					Y	
	70-120	c	10YR54 00	10YR56 00	F			Y	0	0		0					Y	
60	0-30	c	10YR53 00						2	0	HR	4						
	30-50	c	10YR64 00	75YR66 00	C			Y	0	0	HR	1					Y	
	50-95	c	10YR63 00	10YR66 00	C			Y	0	0		0					Y	
	95-120	c	75YR53 00	75YR56 51	C			Y	0	0		0					Y	
65	0-28	c	10YR43 00						0	0	HR	2						
	28-55	hcl	10YR63 00	75YR56 00	M			Y	0	0		0					Y	
	55-120	c	25Y 63 00	10YR66 62	M			Y	0	0		0					Y	
66	0-32	c	10YR43 00						1	1	HR	3						
	32-50	c	25Y 63 00	10YR56 00	M			Y	0	0		0					Y	
	50-120	c	10YR62 00	75YR56 00	M			Y	0	0		0					Y	
67	0-30	c	10YR43 00						2	3	HR	6						
	30-50	c	10YR64 00	75YR56 00	C			Y	0	0		0					Y	
	50-120	c	25Y 63 00	75YR58 00	M			Y	0	0		0					Y	
68	0-35	c	10YR52 00						0	0		0						
	35-60	c	25Y 63 00	10YR66 00	C			Y	0	0		0					Y	
	60-120	c	25Y 62 00	75YR58 00	M			Y	0	0		0					Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
73	0-33	c	10YR43 00						1	0	HR	3						
	33-70	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
	70-120	c	10YR63 00	10YR68 00	M			Y	0	0		0					Y	
74	0-30	hcl	10YR43 00						1	0	HR	3						
	30-120	c	10YR64 00	10YR66 00	M			Y	0	0		0					Y	
75	0-36	c	10YR43 00						0	0	HR	2						
	36-70	c	10YR64 00	75YR66 00	C			Y	0	0		0					Y	
	70-120	c	10YR64 00	75YR68 62	M			Y	0	0		0					Y	
76	0-30	c	10YR43 00						1	0	HR	2						
	30-55	c	10YR64 00	10YR66 00	C			Y	0	0		0					Y	
	55-120	c	10YR63 00	75YR66 00	C			Y	0	0		0					Y	
77	0-30	c	10YR43 00						0	0	HR	2						
	30-70	c	25Y 63 00	75YR56 00	C			Y	0	0		0					Y	
	70-120	c	10YR64 00	75YR68 00	M			Y	0	0		0					Y	
78	0-33	c	10YR43 00						3	0	HR	4						
	33-70	c	25Y 62 00	10YR66 00	C			Y	0	0		0		P			Y	
	70-120	c	25Y 51 00	10YR66 72	C			Y	0	0		0		P			Y	

SOIL PIT DESCRIPTION

Site Name : MEDWAY TOWNS LP SITE 43 Pit Number : 1P

Grid Reference: TQ77407250 Average Annual Rainfall : 618 mm
Accumulated Temperature : 1453 degree days
Field Capacity Level : 118 days
Land Use :
Slope and Aspect : 02 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	C	10YR53 00	2	2	HR					
30-120	C	75YR54 00	0	0			STMAB	FM	P	

Wetness Grade : 3A Wetness Class : I
Gleying :030 cm
SPL : No SPL

Drought Grade : 3A APW : 125mm MBW : 3 mm
APP : 102mm MBP : -17 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : MEDWAY TOWNS LP SITE 43 Pit Number : 2P

Grid Reference: TQ77007270 Average Annual Rainfall : 618 mm
Accumulated Temperature : 1453 degree days
Field Capacity Level : 118 days
Land Use :
Slope and Aspect : 02 degrees SW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	HCL	75YR44 00	4	8	HR					
30- 45	SC	10YR54 00	0	15	HR		MDMSAB	FR	G	
45- 55	SC	10YR54 00	0	8	HR	C	MDCSB	FM	M	
55- 75	SC	10YR64 00	0	2	HR	M	WKVCSB	FM	P	
75-120	C	75YR64 00	0	0		M	MDVCAB	FM	P	

Wetness Grade : 3A Wetness Class : II
Gleying :045 cm
SPL :055 cm

Drought Grade : 3A APW : 133mm MBW : 11 mm
APP : 107mm MBP : -12 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : MEDWAY TOWNS LP SITE 43 Pit Number : 3P

Grid Reference: TQ76707230 Average Annual Rainfall : 618 mm
Accumulated Temperature : 1453 degree days
Field Capacity Level : 118 days
Land Use : Ploughed
Slope and Aspect : 01 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 33	C	10YR53 00	2	3	HR					
33- 50	C	10YR64 00	0	0		C	STMAB	FM	P	
50-120	C	10YR63 00	0	0		M	STCAB	FM	P	

Wetness Grade : 3B Wetness Class : III
Gleying :033 cm
SPL :050 cm

Drought Grade : 3A APW : 126mm MBW : 4 mm
APP : 103mm MBP : -16 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness