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Aylesbury Vale Local Plan
Option B - Aston Clinton Road
Agricultural Land Classification Report
Semi-detailed Survey
May 1996.

Resource Planning Team
Guildford Statutory Group
ADAS Reading

ADAS Reference: 0301/040/96
MAFF Reference: EL 03/01385
LUPU Commission: 2511

AGRICULTURAL LAND CLASSIFICATION REPORT

AYLESBURY VALE DISTRICT LOCAL PLAN
OPTION B - ASTON CLINTON ROAD

Introduction

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey on 67.5 hectares of land on the Aston Clinton Road, near Aylesbury, in Buckinghamshire. The survey was carried out during May 1996.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit, in Reading, in connection with the Aylesbury Vale Local Plan. The results of this survey supersede any previous ALC information for this land.

3. The work was conducted 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 majority of the agricultural land was under permanent grassland. To the south west of the site a small area of arable land, including barley and set-aside, occurs. The area to the north east shown as 'Other Land' comprised a farm trackway.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
3a	8.6	12.7	12.8
3b	55.1	81.6	82.2
4	3.3	5.0	5.0
Other land	0.5	0.7	-
Total surveyed area	67.0	-	100
Total site area	67.5	100	-

7. The fieldwork was conducted at an average density of just under 1 boring per hectare. A total of 39 borings were described. Four soil inspection pits from the adjacent site (ADAS Ref:: 0301/087/96) were used in the classification of this land.

8. The majority of the agricultural land on this site has been classified as Subgrade 3b (moderate quality) the key limitation being soil wetness. A small area of Subgrade 3a land (good quality) has also been mapped in the south of the site where soil wetness and droughtiness are limiting. Grade 4 land (poor quality) occurs towards the north east as the land is thought to have been disturbed.

9. The Subgrade 3b land corresponds to the Gault Clay and as such comprises poorly drained clayey profiles. Shallow slowly permeable clay horizons impede drainage and cause prolonged waterlogging thus inhibiting seed germination and growth. Given the local climatic regime the heavy topsoil textures can also limit the timing of cultivations as trafficking by farm machinery and grazing livestock can lead to structural damage. The majority of these profiles have therefore been classified as Subgrade 3b due to soil wetness. Occasional better quality profiles also occur within this mapping unit but these were too limited in number and extent to map separately at this scale.

10. To the south of the site the soil profiles comprise very slightly to moderately flinty (1-2% >2cm, 3-10% total flint) clay loams and clays over gravelly horizons (chalk, flint or limestone) at shallow depths. In this local climatic regime the combination of soil textures, structures, stone contents and depth to gravel acts to reduce the amount of profile available water for crops. As a result the level and consistency of crop yields is restricted. The gleyed upper subsoils also indicate a slight drainage restriction which in combination with the heavy topsoil textures results in a moderate soil wetness limitation. Seed germination and development may be slightly affected while topsoils workability restrictions can reduce the flexibility of cropping and stocking. This land has therefore been classified as Subgrade 3a on the basis of moderate soil wetness and soil droughtiness limitations. Occasional borings of better and worse quality occur within this mapping unit. However, these were not shown separately as they were too limited in number and extent.

11. A small area of Grade 4 land has been mapped in the north east. This land comprised a derelict trackway surrounded by embankments and uneven land. The entire area is therefore believed to have been disturbed.

FACTORS INFLUENCING ALC GRADE

Climate

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

13. 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).

14. 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.

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SP 851 132
Altitude	m, AOD	85
Accumulated Temperature	day°C (Jan-June)	1405
Average Annual Rainfall	mm	650
Field Capacity Days	days	140
Moisture Deficit, Wheat	mm	109
Moisture Deficit, Potatoes	mm	101

15. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

16. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation (Climatic Grade 1). However, climatic factors can interact with soil properties to influence soil wetness and droughtiness. At this locality the crop adjusted soil moisture deficits are slightly high thus increasing the likelihood of soil droughtiness. Correspondingly the field capacity day values are low thus decreasing the likelihood of soil wetness.

17. Local climatic factors such as frost risk and exposure are not thought likely to adversely affect agricultural land use on this site.

Site

18. The land on this site is relatively flat ranging from 81m AOD in the north west to 88m AOD in the south east.

19. Flooding is not likely to affect land quality in this area.

Geology and soils

20. The relevant geological sheet (BGS, 1972) maps Cretaceous Upper Greensand and Gault Clay across the majority of the site with a very narrow strip of alluvium to the extreme north of the site.

21. The most recently published soils information for this area (SSEW, 1983) maps the Grove soil association across the majority of the site. These soils are described as 'moderately permeable fine loamy calcareous soils over chalky gravel affected by groundwater. Some fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged clayey soils.' (SSEW, 1983). Soils derived

from the alluvium are described as the Denchworth association 'slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. Some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils. Landslips and associated irregular terrain locally.' (SSEW, 1983).

22. Detailed field examination revealed soils of a similar nature to those described above across the site.

Agricultural Land Classification

23. 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.

24. 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

25. A small area of good quality agricultural land (Subgrade 3a) has been mapped to the south of the site where the land is moderately well drained. The soil profiles here are typically non-calcareous, comprising slightly stony (5-10% total flints) heavy clay loam topsoils over slightly stonier (10% total flints), gleyed, clay upper subsoils. At 30-48cm depth the profiles generally become impenetrable to the soil auger over chalky gravel deposits. A soil inspection pit (Pit 1), within a similar soil unit on an adjacent site (ADAS Ref: 0301/087/96), revealed that the soil resource continues to depth. The subsoil horizons are moderately well structured, comprising a moderately stony (30% flint and 15% Chalk) heavy clay loam over a very stony (55% flint and 10% Chalk) medium clay loam lower subsoil. In this locally cool and dry climatic regime the combined effects of soil texture, structure, stone content and the depth to gravelly deposits lead to a moderate soil droughtiness limitation as the amount of profile available water for crops is slightly reduced. Where the profile is impenetrable at very shallow depths the land has been graded Subgrade 3a. Elsewhere it is consistent with Grade 2, although no Grade 2 is mapped due to the limited number and extent of such observations.

26. Soil wetness is also slightly limiting on this site within the Subgrade 3a unit. The combination of heavy topsoil textures and impeded drainage, as evidencee by gleying from the upper subsoil, results in a slight wetness and workability limitation which is consistent with Wetness Class II (Appendix III), Subgrade 3a. Wet soils such as these can inhibit seed germination and growth. The heavy topsoils are also more susceptible to structural damage through trafficking by grazing livestock and agricultural machinery. Occasional borings of slightly higher and lower quality were also recorded in this mapping unit. They were not mapped separately, however, due to their limited number and extent.

Subgrade 3b

27. The majority of the site has been classified as moderate quality agricultural land (Subgrade 3b) due to a significant soil wetness limitation. The soil profiles are variably calcareous, generally comprising very slightly stony (2-5% flint) medium or heavy clay loam topsoils over very slightly or slightly stony (1-10% flint, 2% chalk), poorly structured clay to

depth. Soil inspection Pit 5, from an adjacent site (ADAS Ref: 0301/087/96) showed the clay subsoils to be slowly permeable and thus responsible for a significant drainage impedance. These soils have therefore been assessed as Wetness Class IV (Appendix III), Subgrade 3b as wet soils such as these can restrict seed development and growth. The medium and heavy topsoil textures can also restrict the flexibility of cropping and stocking as over trafficking of the land can lead to structural damage. Again, occasional borings of higher or lower quality occur within this mapping unit but, were not mapped separately due to their limited number and extent.

Grade 4

28. A small area in the north east of the site has been classified as Grade 4 on the basis of significant disturbance. This area comprises a derelict trackway surrounded by a series of uneven embankments where additional soils is believed to have been dumped. This combination of micro-relief and 'Other land' make cultivation by agricultural equipment extremely difficult. Soil mixing may also adversely affect crop growth and yields particularly where the topsoil is either buried or removed.

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ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1972) *Sheet No. 238, Aylesbury.* 1:50,000 Series. Solid & Drift. BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land.*
MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification.*
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6, Soils of South East England.*
SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
SSEW: Harpenden

SOIL PIT DESCRIPTION

Site Name : AYLES VLP,OPTION B Pit Number : 1P

Grid Reference: SP85101240 Average Annual Rainfall : 650 mm
Accumulated Temperature : 1405 degree days
Field Capacity Level : 140 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	HCL	10YR42 00	2	5	HR					
25- 43	C	25Y 52 00	0	10	HR	M	MDCAB	FM	P	
43- 80	HCL	10YR64 00	0	30	HR	C	WKCSAB	FR	M	Y
80-120	MCL	25Y 63 64	0	55	HR	M		FR	M	Y

Wetness Grade : 3A Wetness Class : II
Gleying :025 cm
SPL : No SPL

Drought Grade : 2 APW : 113mm MBW : 7 mm
APP : 95 mm MBP : -3 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : AYLES VLP,OPTION B Pit Number : 2P

Grid Reference: SP85701260
Average Annual Rainfall : 650 mm
Accumulated Temperature : 1405 degree days
Field Capacity Level : 140 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	HCL	10YR32 00	2	5	HR					
28- 65	C	25 Y52 00	0	3	HR	C	MDCSAB	FR	M	
65- 75	C	25 Y64 00	0	15	HR	C			M	Y
75- 85	SCL	25 Y62 00	0	30	HR	C			M	Y

Wetness Grade : 3A
Wetness Class : II
Gleying :028 cm
SPL : No SPL

Drought Grade : 3A
APW : 105mm MBW : -1 mm
APP : 111mm MBP : 13 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : AYLES VLP,OPTION B . Pit Number : 3P

Grid Reference: SP85401250 Average Annual Rainfall : 650 mm
Accumulated Temperature : 1405 degree days
Field Capacity Level : 140 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	HCL	10YR42 00	2	5	HR					
27- 37	C	10YR53 00	0	5	HR	C	WKCSAB	FM	P	
37- 60	C	25Y 62 00	0	2	CH	M	MDCAB	FM	P	Y

Wetness Grade : 3B Wetness Class : IV
Gleying :027 cm
SPL :027 cm

Drought Grade : 3B APW : 83 mm MBW : -23 mm
APP : 88 mm MBP : -10 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : AYLES VLP,OPTION B Pit Number : 5P

Grid Reference: SP84201190
Average Annual Rainfall : 650 mm
Accumulated Temperature : 1405 degree days
Field Capacity Level : 140 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 19	HCL	10YR32 00	1	5	HR					
19- 29	C	10YR52 00	0	5	HR	C	WKCSAB	FM	P	
29- 52	C	25Y 52 00	0	0		M	MDCAB	FM	P	

Wetness Grade : 3B
Wetness Class : IV
Gleying :019 cm
SPL :019 cm

Drought Grade : 3B
APW : 74 mm MBW : -32 mm
APP : 75 mm MBP : -23 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

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	SP84501360	PGR					1	1	80	-26	80	-18	3B					DR	3A	Impen50 see4P
1P	SP85101240	WHT		025			2	3A	113	7	95	-3	2					WE	3A	See 0301/87/96
2	SP84601360	PGR		0	028		4	3B		0		0						WE	3B	Hummocky
2P	SP85701260	CER		028			2	3A	105	-1	111	13	3A					WD	3A	See 0301/87/96
3	SP84701360	PGR					1	1	39	-67	39	-59	4				Y	DB	3B	Microrelief
3P	SP85401250	WHT		027	027		4	3B	83	-23	88	-10	3B					WE	3B	See 0301/87/96
4	SP84801290	PGR		030	030		4	3B		0		0						WE	3B	
5	SP84601350	PGR		025	025		4	3B		0		0						WE	3B	Hummocky
5P	SP84201190	PGR		019	019		4	3B	74	-32	75	-23	3B					WE	3B	See 0301/87/96
6	SP84851350	PGR		0	028		4	3B		0		0						WE	3B	
7	SP85001350	PGR		0	025		4	3B		0		0						WE	3B	I60chalky grvl
8	SP84701340	PGR		030	030		4	3B		0		0						WE	3B	
9	SP84901340	PGR		0	025		4	3B		0		0						WE	3B	
10	SP85101340	PGR		0	028		4	3B		0		0						WE	3B	
11	SP84621332	PGR					1	1	65	-41	65	-33	3B				Y	DB	3B	Disturbed
12	SP84801330	PGR		0	025		4	3B		0		0						WE	3B	
13	SP85001330	PGR		025	040		3	3A		0		0						WE	3A	Calc. topsoil
14	SP85201330	PGR		0	025		4	3B		0		0						WE	3B	Borderline 3a
15	SP84901320	PGR		025	025		4	3B		0		0						WE	3B	
16	SP85101320	PGR		025	025		4	3B		0		0						WE	3B	
17	SP85281322	RGR		0	030		4	3B		0		0						WE	3B	
18	SP84651316	PGR		0			5	4	60	-46	60	-38	3B					WE	4	Rushy;I38flnty
19	SP84801310	PGR		0	028		4	3B		0		0						WE	3B	
20	SP85201310	RGR		0	005		4	3B		0		0						WE	3B	
21	SP85401310	CER		0	028		4	3B		0		0						WE	3B	
22	SP84701300	PGR		0			2	3A	65	-41	65	-33	3B					WE	3A	Imp45 see 1P
23	SP85301290	PGR		015	015		4	3B		0		0						WE	3B	
24	SP84901360	PGR		0	022		4	3B		0		0						WE	3B	
25	SP85201290	PGR		015	015		4	3B		0		0						WE	3B	
26	SP84701280	PGR		0	030		4	3B		0		0						WE	3B	
27	SP84901280	PGR		030	030		4	3B		0		0						WE	3B	
28	SP85101280	PGR		0	030		4	3B		0		0						WE	3B	
29	SP85301280	PGR		0	030		4	3B		0		0						WE	3B	
30	SP84801270	SAS		025			2	2	41	-65	41	-57	4					DR	3A	Imp30 see 4P
31	SP84901270	SAS		028			2	2	58	-48	58	-40	3B					DR	3A	Imp38 see 1P
32	SP85001270	PGR		0	020		4	3B		0		0						WE	3B	
33	SP85101270	PGR		0	055		3	3A	103	-3	109	11	3A					WE	3A	Ridge + furrow
34	SP85201270	WHT		0	028		4	3B		0		0						WE	3B	
35	SP84801260	PGR		030			2	3A	78	-28	81	-17	3B					WE	3A	Imp48 see 1P
36	SP84901260	WHT		028	028		4	3B		0		0						WE	3B	
37	SP85201260	WHT		030			2	3A	75	-31	75	-23	3B					WE	3A	Imp48 see 1P
38	SP84801250	WHT		030			2	2	63	-43	63	-35	3B					DR	2	Imp40 see 1P

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
39	SP84901250	WHT	030		2	3A		73	-33	73	-25	3B				WE	3A	Imp48 see 1P

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	0-28	mcl	10YR32 00						1	0	HR	5							
	28-50	hcl	10YR32 00						0	0	HR	10		M					Impen50 flinty
1P	0-25	hcl	10YR42 00						2	0	HR	5							
	25-43	c	25Y 52 00	10YR58 00	M		00MN00 00	Y	0	0	HR	10	MDCAB FM	P	Y				
	43-80	hcl	10YR64 00	10YR58 00	C			Y	0	0	HR	30	WKCSAB FR	M				Y	+ 15% Chalk
	80-120	mcl	25Y 63 64	10YR58 00	M			Y	0	0	HR	55	FR	M				Y	+ 10% Chalk
2	0-28	hcl	10YR41 00	75YR58 00	C			Y	1	0	HR	5							
	28-45	c	10YR51 00	10YR56 00	M			Y	0	0	HR	5		P		Y			
	45-70	c	25Y 61 00	10YR56 00	M			Y	0	0		0		P		Y			
2P	0-28	hcl	10YR32 00						2	0	HR	5							
	28-65	c	25 Y52 00	10YR56 00	C			Y	0	0	HR	3	MDCSAB FR	M					
	65-75	c	25 Y64 00	10YR58 00	C			Y	0	0	HR	15		M				Y	+ 15% chalk
	75-85	scl	25 Y62 00	75YR58 00	C			Y	0	0	HR	30		M				Y	+ 20% chalk
3	0-25	hcl	10YR52 00						0	0	HR	15							Imp-brick;distd
3P	0-27	hcl	10YR42 00						2	0	HR	5							
	27-37	c	10YR53 00	10YR56 00	C			Y	0	0	HR	5	WKCSAB FM	P	Y		Y		Tending AB
	37-60	c	25Y 62 00	10YR58 00	M			Y	0	0	CH	2	MDCAB FM	P	Y		Y	Y	Very heavy
4	0-22	hcl	10YR42 00	10YR56 00	C			Y	0	0		0							
	22-30	hcl	10YR42 32						0	0	HR	10						Y	
	30-50	c	10YR52 00	10YR58 00	M			Y	0	0	HR	5		P		Y			Heavy
	50-38	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	5		P		Y		Y	Very firm
	38-60	c	10YR72 00	10YR58 00	M			Y	0	0	HR	5		P		Y		Y	
	60-60	hcl	25Y 41 00	75YR58 00	C			Y	0	0	SLST	5		P		Y		Y	Firm
5	0-25	hcl	10YR42 00						0	0	HR	3							
	25-45	c	10YR52 00	10YR58 00	C			Y	0	0	HR	5		P		Y			Very heavy
	45-70	c	25Y 61 00	10YR56 00	C			Y	0	0	CH	2		P		Y		Y	
5P	0-19	hcl	10YR32 00						1	0	HR	5							
	19-29	c	10YR52 00	10YR56 00	C			Y	0	0	HR	5	WKCSAB FM	P	Y		Y		
	29-52	c	25Y 52 00	10YR58 51	M			Y	0	0		0	MDCAB FM	P	Y		Y		Very plastic
6	0-28	hcl	10YR42 00	10YR56 00	C			Y	0	0	HR	2						Y	
	28-60	c	10YR52 00	10YR58 00	M		00MN00 00	Y	0	0	CH	4		P		Y		Y	
7	0-25	hcl	10YR42 00	10YR56 00	C			Y	0	0	HR	2						Y	
	25-60	c	10YR52 00	75YR58 00	M			Y	0	0	CH	2		P		Y		Y	I60chalky gravel
8	0-30	hcl	10YR42 00	10YR58 00	F				0	0	HR	3							
	30-55	c	25Y 52 00	10YR68 00	C			Y	0	0	HR	5		P		Y			
	55-75	c	25Y 62 00	75YR58 00	M		00MN00 00	Y	0	0	HR	8		P		Y			

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
9	0-25	hcl	10YR52 00	75YR58 00	M			Y	0	0	HR	2							
	25-60	c	25Y 62 00	75YR58 00	M			Y	0	0	HR	2		P			Y		
10	0-28	hcl	10YR42 00	75YR46 00	C			Y	0	0	HR	2						Y	
	28-45	c	10YR52 53	75YR58 00	M			Y	0	0	HR	1		P			Y	Y	Firm
	45-60	c	10YR71 00	10YR58 00	M			Y	0	0	CH	2		P			Y	Y	Very firm
11	0-25	hcl	10YR32 00						0	0	HR	5							
	25-40	c	10YR32 31						0	0	HR	10		M					Incl. brick+ash
12	0-25	hcl	10YR52 00	75YR58 00	M			Y	0	0	HR	2							
	25-60	c	25Y 62 00	75YR58 00	M			Y	0	0	HR	2		P			Y		
13	0-25	hcl	10YR42 00						0	0	HR	2						Y	
	25-40	c	10YR53 00	10YR68 62	C			Y	0	0	HR	2		M				Y	Friable
	40-60	c	25Y 71 00	75YR58 00	M		00MN00 00	Y	0	0	HR	2		P			Y	Y	
14	0-25	hcl	10YR42 52	75YR46 00	M			Y	0	0	HR	2						Y	
	25-50	c	10YR52 53	75YR58 00	M			Y	0	0	HR	2		P			Y	Y	
	50-60	c	10YR52 53	75YR58 00	M			Y	0	0	CH	2		M				Y	Incl. shells
15	0-25	hcl	10YR42 00						0	0	HR	2							
	25-40	c	10YR62 00	75YR58 00	C			Y	0	0	HR	2		P			Y		
	40-70	c	25Y 62 00	75YR58 00	M		00MN00 00	Y	0	0	HR	2		P			Y		
16	0-25	hcl	10YR42 00						0	0	HR	2							
	25-60	c	10YR71 00	75YR58 00	M			Y	0	0	HR	2		P			Y	Y	
17	0-30	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	30-60	c	10YR52 53	10YR46 00	M			Y	0	0	HR	1		P			Y		
18	0-25	hcl	10YR42 00	75YR46 00	M			Y	0	0	HR	5							
	25-38	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	20		M					Friable;Imp-flints
19	0-28	hcl	10YR42 00	10YR58 00	C			Y	1	0	HR	5						Y	
	28-55	c	25Y 52 53	75YR58 00	M		00MN00 00	Y	0	0	HR	10		P			Y	Y	
	55-70	c	25Y 71 00	75YR58 00	M		00MN00 00	Y	0	0	SLST	10		P			Y	Y	
20	0-5	hcl	10YR42 00	10YR58 00	C			Y	0	0		0							
	5-50	c	25Y 62 00	10YR68 00	M			Y	0	0		0		P			Y		
	50-70	c	05Y 62 00	10YR58 00	M		00MN00 00	Y	0	0	HR	5		P			Y		
21	0-28	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	28-58	c	10YR52 53	10YR46 00	C			Y	0	0	HR	2		P			Y		
	58-75	c	10YR52 00	75YR58 00	M			Y	0	0	HR	1		P			Y		
22	0-25	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	5							
	25-45	c	25Y 52 53	10YR58 00	M			Y	0	0	HR	15		P					Imp40 gravelly

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	
23	0-15	mcl	10YR41 00						0	0	HR	3							
	15-45	c	25Y 63 00	10YR66 00	M			Y	0	0	HR	3		P			Y		
	45-60	c	25Y 61 63	10YR66 68	M			Y	0	0		0		P			Y	Y	
25	0-15	mcl	10YR41 00						0	0	HR	3							
	15-38	c	25Y 63 00	10YR66 00	M			Y	0	0	HR	3		P			Y		
	38-60	c	25Y 61 63	10YR66 00	M			Y	0	0	HR	3		P			Y	Y	
26	0-30	hcl	10YR42 00	10YR58 00	C			Y	0	0	HR	5						Y	
	30-55	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	10		P			Y	Y	
	55-70	c	10YR52 00	75YR88 00	M			Y	0	0	HR	5		P			Y	Y	
27	0-30	hcl	10YR42 00						0	0	HR	10						Y	
	30-50	c	25Y 52 53	10YR58 00	C			Y	0	0	HR	10		P			Y	Y	
	50-65	c	25Y 52 00	75YR58 00	M			Y	0	0	SLST	5		P			Y	Y	
28	0-15	mcl	10YR42 41	75YR46 00	C			Y	0	0	HR	3							
	15-30	hcl	10YR62 00	10YR66 00	M			Y	0	0	HR	3		M					
	30-60	c	25Y 62 61	10YR66 00	M			Y	0	0	HR	3		P			Y		
29	0-30	hcl	10YR41 00	75YR46 00	C			Y	1	0	HR	5							
	30-60	c	10YR52 63	10YR68 6T	M		00MN00 00	Y	0	0	HR	5		P			Y		
30	0-25	hcl	10YR42 00						6	0	HR	20						Y	
	25-30	c	25Y 52 53	75YR58 00	C			Y	0	0	HR	30		P				Y	+5%ch;Imp-flints
31	0-28	hcl	10YR42 00						3	0	HR	10						Y	Borderline c
	28-38	c	25Y 52 53	10YR58 00	M			Y	0	0	SLST	12		P				Y	I38chalky gravel
32	0-20	omcl	10YR31 00	75YR46 00	C			Y	0	0		0							
	20-55	c	25Y 62 00	10YR58 00	M			Y	0	0	CH	2		P			Y	Y	
	55-60	c	25Y 62 00	10YR58 00	M			Y	0	0	HR	20		P			Y	Y	I60chalky gravel
33	0-25	mcl	10YR41 00	75YR46 00	C			Y	1	0	HR	5							
	25-55	c	10YR53 00	10YR58 00	M			Y	0	0	HR	3		M				Y	Borderline hcl
	55-80	c	25Y 61 00	10YR58 00	M		00MN00 00	Y	0	0		0		P			Y	Y	Very plastic
34	0-28	hcl	10YR42 00	10YR58 00	C			Y	1	0	HR	5							
	28-65	c	25Y 61 62	10YR58 00	C		00MN00 00	Y	0	0	HR	1		P			Y		
35	0-30	hcl	10YR42 00						0	0	HR	5							
	30-48	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	10		P					I48chalky gravel
36	0-28	hcl	10YR42 00						0	0	HR	10							
	28-55	c	25Y 52 62	10YR58 00	M			Y	0	0	HR	5		P			Y		
	55-60	hcl	25Y 63 00	10YR68 00	M			Y	0	0	SLST	15		M				Y	Friable
37	0-30	hcl	10YR42 00						2	0	HR	5							
	30-48	c	10YR52 53	75YR58 00	C			Y	0	0	HR	10		P					Imp48 gravelly

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
38	0-30	hcl	10YR42 00						5	0	HR	10						Y	
	30-40	c	25Y 52 53	10YR58 00	C			Y	0	0	SLST	15		M				Y	+10%hr;Imp-gravelly
39	0-30	hcl	10YR42 00						0	0	HR	10							
	30-48	c	25Y 52 53	75YR58 00	M			Y	0	0	HR	10		P					I48chalky gravel