1512/193/96

A1

TEST VALLEY LOCAL PLAN REVIEW
Sites 118 124 Romsey

Agricultural Land Classification
Semi Detailed Survey
ALC Map and Report

January 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

TEST VALLEY LOCAL PLAN REVIEW
SITES 118-124
ROMSEY HAMPSHIRE

SEMI DETAILED SURVEY

INTRODUCTION

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of approximately 70 hectares of land to the south of North Baddesley Hampshire The survey was carried out during January 1997

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 Test Valley Local Plan Review The results of this survey supersede any previous ALC information for this land

3 Prior to 1 April 1997 the work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS After this date the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA) Reading 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 this site was in permanent grassland and rough grassland with a small area of arable The areas of the site shown as Other Land consist of woodland farm buildings and demolished buildings

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 overleaf

7 The fieldwork was conducted at an average density of 1 boring per 1 5 hectares A total of 46 borings and 3 soil pits were described

8 Just over half of the land at this site has been classified as Grade 2 (very good quality) and Subgrade 3a (good quality) with Subgrade 3b (moderate quality) and a small area of Grade 4 (poor quality) making up the remainder of the land Soil wetness and soil droughtiness are the principal limitations throughout

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	/ survey area	/ site area
2	27 2	42 2	38 7
3a	8 6	13 4	12 2
3b	26 3	40 8	37 4
4	2 3	3 6	3 3
Other land	ɔ 9	N/A	8 4
Total Survey Area	64 4	100	91 6
Total site area	70 3		100

9 Land graded as 2 (good quality) at this location is representative of soils derived from Bracklesham deposits and these typically experience a slight wetness limitation due to slowly permeable lower subsoils Some pockets of freely draining soils are also included The Subgrade 3a (good quality land) mapping unit has similar soil types to those described above Here moderate soil wetness and soil droughtiness limitations occur as a result of either shallower slowly permeable horizons or coarser textured soil types respectively

10 Subgrade 3b (moderate quality) land has been mapped in two main areas Firstly it occurs where poorly drained fine loamy and clayey soils are derived from London Clay Such land lies to the east of Rownhams Lane and to the south of the site adjoining Packridge Lane Secondly land graded Subgrade 3b occurs together with Grade 4 (poor quality) in two areas that have been formerly worked for minerals This land lies to the south of Hoe Lane towards the centre of the survey area Here the restored areas often have a shallow soil resource and/or experience moderate to severe droughtiness and wetness limitations

11 A small area of land to the far south east of the site is limited to Subgrade 3b on the basis of microrelief Complex changes of slope and direction occur over short distances which will limit the use of agricultural machinery on this area considerably

FACTORS INFLUENCING ALC GRADE

Climate

12 Climate affects the grading of the 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)

Table 2 Climatic and altitude data

Factor	Units	Values	Values	Values
Grid reference	N/A	SU 384 195	SU 390 184	SU 386 189
Altitude	m AOD	40	45	55
Accumulated Temperature	day°C (Jan June)	1509	1504	1492
Average Annual Rainfall	mm	822	823	825
Field Capacity Days	days	174	173	174
Moisture Deficit Wheat	mm	107	107	105
Moisture Deficit Potatoes	mm	101	100	99
Overall Climatic Grade	N/A	Grade 1	Grade 1	Grade 1

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

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 the survey area means that there is no overall climatic limitation Other local climatic factors such as exposure and frost risk are not believed to have a significant adverse effect on the site The site is climatically Grade 1

Site

17 The agricultural land at this survey area lies at an altitude of 35 60m AOD The majority of the land at the site is flat or very gently sloping with slight undulations generally rising up to the south west Gradient does not affect agricultural land quality however a small area of land to the extreme south east of the site is affected by microrelief

Geology and soils

18 The published geological information for the site (BGS 1987) shows the survey area to be underlain by a number of solid and drift deposits These maps show that large sections to the south and east of the site comprise London Clay and Nursling Sand deposits (both part of the London Clay deposit) The central area is dominantly underlain by Whitecliff Sand (again part of the London Clay deposit) but a large section of this has been worked for minerals and then filled Towards the northern and western parts of the site the Wittering Formation (part of the Bracklesham Group) is mapped and this consists of interbedded clays and sands A very thin strip of alluvium to the extreme north of the site is mapped adjoining the built up area

19 The most recently published soil information for the survey area (SSEW 1983) shows the Wickham 3 association to cover the whole area of the site These soils are described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils and similar more permeable soils with slight waterlogging Some deep coarse loamy soils affected by groundwater Landslips and irregular terrain locally (SSEW 1983)

20 Upon detailed field examination, soils generally consistent with the Wickham 3 association were found to exist across the majority of the survey area

AGRICULTURAL LAND CLASSIFICATION

21 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

22 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 II

Grade 2

23 Three units of very good quality agricultural land have been mapped across the site These occur in the far north the extreme south and the central area The land is affected by a combination of wetness and/or droughtiness restrictions Occasional borings which are of slightly better or worse quality are also included within these units

24 Soils within this unit are mostly developed from interbedded sand and clay deposits The nature and characteristics of the soil profiles subsequently varies with depth Certain key characteristics can be observed The topsoils comprise mainly non calcareous very slightly or slightly stony (0 15% total flints 0 2% > 2cm) fine or medium sandy loam textures with occasional medium clay loam and fine or medium sandy silt loam textures These rest upon similar upper subsoils although there is some local variation These subsoils occur at depths between 20cm and 35 cm and are sometimes gleyed but pit evidence (1P and 3P Appendix II) suggests these are friable and moderately structured Lower subsoils vary considerably in textures and horizon sequences from clays to medium sands with a combination of textural classes inbetween reflecting the interbedded nature of the parent materials

25 Within the grade 2 units areas where soil wetness is dominant or equally limiting to soil droughtiness typically have heavy clay loam or clay horizons at depth (i e from 45 to 60 cm) or are gleyed from higher up in the profile As observed in Pits 1 and 3 (see appendix II) these clayey horizons are usually gleyed poorly structured and slowly permeable Depending on the depth to gleying or to the slowly permeable clayey horizons the majority of soil profiles have a slight wetness limitation Soils are allocated to wetness class II or III with light topsoil textures aiding workability The interaction between these soils and the local climatic regime results in a minor wetness limitation which may cause slight restrictions in the utilisation of the land

26 Land affected by soil droughtiness commonly has similar though significantly more sandy and better drained soil profiles than those described above giving rise to profiles of wetness class I and occasionally II to be assigned to these soils However these profiles often have lower reserves of available water which given the local climatic condition results in a slight risk of drought stress Moisture balance calculations indicate that Grade 2 is the appropriate classification

Subgrade 3a

27 An area of good quality land has been mapped to the north west of the survey area Soil profiles vary considerably within this unit with occasional borings of slightly worse or better quality occurring In common with much of the Grade 2 land these areas are also affected by a combination of soil wetness and soil droughtiness In cases of soil wetness typically drainage was found to be impeded by the presence of slowly permeable clay horizons higher in the soil profile (between 35 50cm) giving rise to wetness class III and IV The topsoils vary in nature from very slightly stony (3 5% total flints with 0% >2cm diameter) fine sandy loam to medium clay loam textures Within the local climatic regime Subgrade 3a is the appropriate grade since flexibility of utilisation and yield potential is likely to be reduced

28 The area affected by soil droughtiness commonly occurs towards the southerly part of the Subgrade 3a unit Typically soils comprise stoneless or very slightly stony (c 3 5% total flints with 0 % > 2cm) medium sandy loam topsoils The upper and lower subsoils are very similar comprising stoneless or very slightly stony (0 3% total flints by volume with 0% > 2 cm) medium sandy loam or medium sand textures that are sometimes gleyed Very occasional profiles are heavier in texture and are very slightly to slightly stony (5 8% total flints 0 % > 2 cm) and impenetrable to the soil auger at about 45 cm depth due to the high stone content The relatively sandier textures and higher stone contents in the soils of this unit act to significantly reduce water availability to crops such that within this local climatic regime moisture balance calculations indicate that Subgrade 3a is appropriate due to an increased risk of drought

Subgrade 3b

29 The majority of the site area towards the south and east has been mapped as Subgrade 3b This land is limited by mainly by soil wetness with occasional profiles being affected by soil droughtiness

30 Soils dominated by a wetness limitation comprise very slightly stony (1 5% total flints) non calcareous medium or heavy clay loam topsoils On occasion, shallow upper subsoils exist which have similar characteristics to the topsoils and are gleyed and moderately structured In many cases however the topsoils often lie directly over heavy clay loam or clay subsoils (typically within 35cm or less of the surface) which are poorly structured and slowly permeable (see pit 2 Appendix II) Such soils are allocated to wetness class IV This wetness limitation will affect the timing of cultivations or grazing as trafficking by agricultural machinery or grazing by livestock may lead to structural damage Soil wetness may also adversely affect root development and crop yield

31 A small number of borings around the junction of Packridge Lane are limited to Subgrade 3b on the basis of soil droughtiness Here the soil profiles have very high sand contents or are impenetrable to the soil auger at shallow depths (20 cm) Moisture balance calculations indicate that Subgrade 3b is the appropriate classification due to the high drought risk Some disturbed land is also included in this Subgrade Disturbed profiles comprise firstly very slightly stony (5% total flints 0% > 2 cm) medium clay loam topsoil over clay subsoils which become impentrable to the auger at 35 cm depth and secondly stoneless or very slightly stony (0 2 % total flints) loamy medium sand horizons that continue down to depth becoming

slightly heavier at the base of the profile Moderate soils wetness and soil droughtiness restrictions limit these disturbed areas to subgrade 3b

Grade 4

32 Land of this quality is confined to a small area south of Hoe Lane where the land is believed to have been worked for minerals and backfilled The soil resource is very shallow only a depth of 20cm and could not be penetrated at the time of survey There was also evidence of large solid (concrete) objects within the profile In view of these limitations which will severely affect the agricultural potential of this area, it has been mapped as Grade 4

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SOURCES OF REFERENCE

British Geological Survey (1987) Sheet No 315 Southampton 1 63 360 scale (Solid and Drift Edition) 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 TEST VALLEY LP 118-124 P t Numbe 1P

G id Reference SU38801870 Ave age Ann al Rainfall 822 mm
Accumulated Tempe ature 1509 degree days
Field Capacity Level 174 days
Land Use Rough Grazing
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 26	FSL	10YR42 00	2	5	HR					
26 45	MCL	10YR53 54	0	2	HR		MDCSAB	FR	M	
45- 58	HCL	10YR53 00	0	0		C	MDCSAB	FR	M	
58 95	C	10YR62 63	0	0		M	WDCPR	FM	P	

Wetness Grade 2 Wetness Class III
Gl ying 045 cm
SPL 058 cm

Drought G ade 2 APW 116mm MBW 8 mm
APP 111mm MBP 9 mm

FINAL ALC GRADE 2
MAIN LIMITATION Soil Wetness/Droughti e

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP 118-124 Pit N mber 2P

G id Reference SU38901860 Average Ann al Rainfall 822 mm
Accumulated Tempe ature 1509 degree days
Field Capacity Level 174 days
Land Use Permanent G a
Slope and Aspect 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 25	MCL	10YR42 00	0		2	HR					
25- 65	C	10YR62 63	0		0		M	STCAB	FM	P	

Wetness Grade 3B Wetness Class IV
Gleying 025 cm
SPL 025 cm

Drought Grade APW 000mm MBW 0 mm
APP 000mm MBP 0 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name TEST VALLEY LP 118-124 Pit Numbe 3P

G id Reference SU38351947

Average Annual Rainfall	822 mm
Accumulated Temperature	1509 degree days
Field Capacity Level	*174 days*
Land Use	Permanent Grass
Slope and Aspect	02 degrees NE

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 27	FSL	10YR42 00	0	5	HR					
27 41	FSL	10YR63 43	0	0		C	MDCSAB	FR	M	
41 66	SCL	25Y 62 00	0	0		M	MDCSAB	FR	M	
66 120	HCL	25Y 61 00	0	0		M	MDCAB	FM	P	

Wetness G ade 2

Wetness Class	III
Gleying	027 cm
SPL	066 cm

Drought Grade 2

APW	135mm	MBW	28 mm
APP	110mm	MBP	9 mm

FINAL ALC GRADE 2

MAIN LIMITATION Soil Wetness/Drought ness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	-WHEAT AP	-WHEAT MB	POTS- AP	POTS- MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU38501960	PGR	E	02	030	045	4	3A	142	35	112	11	1				WE	3A	SEE PIT 3
1P	SU38801870	RGR			045	058	3	2	116	8	111	9	2				WD	2	
2	SU38201950	PGR			035	045	4	3A	125	18	112	11	2				WD	3A	SEE PIT 3
2P	SU38901860	PGR	S	02	025	025	4	3B	000	0	000	0					WE	3B	
3	SU38401950	PGR	NE	02	045	070	2	2	120	13	089	12	3A				DR	3A	SEE PIT 3
3P	SU38351947	PGR	NE	02	027	066	3	2	135	28	110	9	2				WD	2	
4	SU38101940	PGR	SE	02	0	035	4	3B	090	18	099	3	3A				WE	3B	SEE PIT 2
5	SU38301940	PGR	NE		030		2	1	132	24	110	8	2				DR	2	
6	SU38501940	STB	E	01	035		2	2	159	52	118	17	1				WE	2	
7	SU38201930	PGR	NW	02	035	050	3	2	095	13	104	2	3A				WE	2	SEE PIT 1
8	SU38401930	STB	E	01	040		2	2	154	47	116	15	1				WE	2	
9	SU38301920	PGR	NW		045	045	4	3A	096	12	108	6	3A				WE	3A	
10	SU38501920	PGR	NE		075		1	1	127	19	109	7	2				DR	2	
11	SU38201910	PGR	NW	02	080		2	1	122	14	107	5	2				DR	2	
12	SU38301910	PGR	NW	02	0		2	2	071	37	071	31	3B				DR	3A	I45 POSS 2
13	SU38401910	PGR	NE				1	1	153	45	109	7	2				DR	2	
14	SU38501910	GRA	N	02	090		1	1	092	15	076	25	3A				DR	3A	
15	SU38601910	RGR	N	01					000	0	000	0				Y		4	I20 Q DIST
16	SU38701910	RGR	N	01					000	0	000	0				Y		4	I20 Q DIST
17	SU38801910	RGR	N	04			1	1	113	6	097	4	2				DR	2	
18	SU39001910	RGR	N	02	030	055	3	2	135	28	112	11	2				WD	2	
19	SU38301900	CER	NE	03	020	020	4	3B	050	58	050	52	4			Y	WE	3B	I35 Q DIST
20	SU38501900	PGR	N	03	050		1	1	110	2	067	35	3B			Y	DR	3B	Q DISTURB
21	SU38701900	RGR			025	058	3	2	132	25	109	8	3A				WD	2	
22	SU38901900	RGR	S	02	080	080	1	1	104	3	076	25	3A				DR	3A	
23	SU39001900	RGR	E	02	085	085	1	1	145	35	110	9	2				DR	2	BORDER GR1
24	SU38601890	CER	S	01	065	090	1	1	156	48	117	15	1					1	
25	SU38801890	RGR	S	02	053		1	1	141	34	108	7	2				DR	2	BORDER GR1
26	SU39001890	RGR	S	03	035		1	1	135	28	111	10	2				DR	2	SEE PIT 1
27	SU38801880	RGR	E	02	020	030	4	3B	000	0	000	0					WE	3B	SEEPAGE
28	SU38901880	RGR	S	02	025	025	4	3B	088	19	098	3	3A				WE	3B	SEEPAGE
29	SU38801870	RGR	S		060	060	3	2	124	17	112	11	2				WE	2	SEE PIT 1
30	SU39001870	RGR	S		035	060	3	2	106	1	105	4	3A				WE	3A	SEE PIT 1
31	SU38901870	RGR	S		030		1	1	067	40	058	43	3B				DR	3B	SANDY
32	SU39201900	RGR			0	026	4	3B	000	0	000	0					WE	3B	SEE PIT 2
33	SU39101890	PGR			0	055	3	2	148	40	125	23	1				WE	2	SEE PIT 1
34	SU39201880	PGR			0	015	4	3B	000	0	000	0					WE	3B	SEE PIT 2
35	SU39101870	PGR					1		038	70	038	64	4				DR	3B	IMP 65
36	SU39201860				0	030	4	3B	099	9	108	6	3A				WE	3B	I65
37	SU39101850	PGR	E	02	010	010	4	3B	000	0	000	0					WE	3B	SEE PIT 2
38	SU39171840	PGR	E	03	0	055	3	3A	103	5	108	6	3A			Y	MR	3B	
39	SU38901860	RGR	S	01	025	025	4	3B	000	0	000	0					WE	3B	SEE PIT 2

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
40	SU38801850	RGR	S		0	025	4	3B	000	0	000	0					WE	3B	SEE PIT 2
41	SU38901850	PGR	NE	03	0	040	4	3B	000	0	000	0					WE	3B	SEE PIT 2
42	SU39001850	RGR	S		0	025	4	3B	062	-46	062	-40	3B				WE	3B	IMP 40
43	SU38701840	RGR	S		030	030	4	3B	080	28	084	18	3B				WE	3B	IMP 60 SPL
44	SU38801838	PGR	NE	02	0	028	4	3B	000	0	000	0					WE	3B	
45	SU38731832	PGR	SW	04	055		1	1	154	46	115	13	1					1	
46	SU38801825	PGR	E	02			1	1	038	70	038	64	4				DR	3A	IMP 20

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES- COL	ABUN	CONT	PED COL	GLEY	STONES 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0 30	fsl	10YR42 00						0	0	HR	3							
	30 45	mcl	10YR53 00	10YR58 00	C			Y	0	0	HR	2		M					
	45-55	hcl	25Y 63 00	75YR68 00	M			Y	0	0		0		P			Y		HEAVY
	55-95	c	25Y 61 62	75YR58 68	M			Y	0	0		0		P			Y		
	95-120	scl	25Y 62 00	75YR68 58	M			Y	0	0		0		M			Y		
1P	0 26	fsl	10YR42 00						2	0	HR	5							
	26-45	mcl	10YR53 54						0	0	HR	2	MDCSAB	FR M					
	45-58	hcl	10YR53 00	10YR58 00	C			Y	0	0		0	MDCSAB	FR M					
	58-95	c	10YR62 63	75YR58 00	M			Y	0	0		0	WDCPR	FM P	Y		Y		
2	0 25	fsl	10YR42 32						0	0	HR	3							
	25-35	ms l	10YR42 62	10YR58 00	F				0	0		0		M					
	35 45	mcl	10YR63 62	10YR58 00	C			Y	0	0		0		M					
	45-75	c	25Y 61 62	75YR58 68	M			Y	0	0		0		P			Y		
	75-120	lms	25Y 63 00	75YR58 68	M			Y	0	0		0		M			Y		
2P	0 25	mcl	10YR42 00						0	0	HR	2							
	25 65	c	10YR62 63	10YR58 00	M			Y	0	0		0	STCAB	FM P	Y		Y		
3	0 20	f l	10YR42 00						0	0	HR	3							
	20 45	msl	10YR64 63	10YR58 00	F				0	0	HR	3		M					
	45-70	lms	10YR63 64	10YR58 00	C			Y	0	0		0		M					
	70 120	c	25Y 61 00	75YR68 58	M			Y	0	0		0		P			Y		
3P	0 27	fsl	10YR42 00						0	0	HR	5							
	27 41	fsl	10YR63 43	10YR58 00	C			Y	0	0		0	MDCSAB	FR M					
	41 66	scl	25Y 62 00	75YR68 58	M			Y	0	0		0	MDCSAB	FR M					
	66 120	hcl	25Y 61 00	75YR58 68	M			Y	0	0		0	MDCAB	FM P	Y		Y		HEAVY
4	0 35	hcl	10YR42 51	10YR58 00	C			Y	0	0	HR	5							
	35-65	c	10YR61 62	75YR58 00	M			Y	0	0		0		P			Y		
5	0 30	msl	10YR31 00						0	0	HR	2							
	30 70	msl	10YR62 63	10YR68 00	C			Y	0	0		0		M					
	70 80	msl	25Y 61 71	10YR68 00	M			Y	0	0		0		M					
	80 120	lms	25Y 71 00	75YR58 68	M			Y	0	0		0		M					
6	0 35	mcl	10YR42 32						0	0	HR	2							
	35-90	mcl	10YR63 62	10YR58 00	C			Y	0	0		0		M					
	90 120	msl	10YR63 62	10YR58 00	C			Y	0	0		0		M					
7	0 35	fsl	10YR42 00						0	0	HR	3							
	35-50	hcl	10YR62 63	10YR58 00	M			Y	0	0	HR	2		M					
	50 65	c	25Y 61 62	75YR58 00	M			Y	0	0		0		P			Y		
8	0 25	mcl	10YR42 32						0	0	HR	3							
	25-40	mcl	10YR42 00						0	0		0		M					
	40 60	mcl	10YR62 63	75YR58 00	M			Y	0	0		0		M					
	60 120	hcl	10YR62 63	75YR58 00	M			Y	0	0		0		M					

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES- COL	ABUN	CONT	PED COL	GLEY	STONES- 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
9	0 34	fsl	10YR42 00	10YR56 00	F				0	0	HR	5							
	34 45	hcl	10YR54 00						0	0		0		M					
	45-70	c	10YR52 63	75YR58 00	M			Y	0	0		0		P			Y		
10	0 30	msl	10YR43 00						0	0	HR	2							
	30 75	msl	10YR44 46						0	0	HR	2		M					
	75 90	lms	10YR63 00	10YR68 00	C			Y	0	0	HR	2		M					
	90 120	lms	10YR63 00	75YR58 00	M			Y	0	0	HR	5		M					
11	0 32	msl	10YR42 42						0	0	HR	5							
	32 80	msl	10YR43 44						0	0	HR	3		M					
	80 110	ms	25Y 73 74	10YR58 00	C			Y	0	0		0		M					
12	0 30	cl	10YR42 52	10YR58 00	C			Y	0	0	HR	5							
	30 45	hcl	10YR52 00	10YR58 00	C			Y	0	0	HR	8		M					
13	0 30	msl	10YR43 00						0	0	HR	2							
	30 70	msl	10YR44 00						0	0	HR	2		M					
	70 120	msl	10YR46 00						0	0	HR	5		M					
14	0 32	msl	10YR42 00						0	0		0							
	32 90	ms	10YR54 00						0	0		0		M					
	90 120	ms	10YR53 00	10YR46 00	M			Y	0	0		0		M					
15	0 20	mcl	10YR32 00						0	0	HR	50							Q DISTURBED
16	0 20	mcl	10YR32 00						0	0	HR	10							Q DISTURBED
17	0 32	msl	10YR42 00						0	0		0							
	32 55	msl	10YR44 54						0	0		0		M					
	55 120	ms	10YR66 68						0	0		0		M					
18	0 30	fs l	10YR42 00						2	0	HR	2							
	30 40	mcl	10YR54 00	10YR58 00	C			S	0	0	HR	2		M					
	40 55	hcl	10YR53 54	75YR58 00	C			Y	0	0		0		M					
	55-120	c	25Y 53 72	75YR58 00	M			Y	0	0		0		P			Y		
19	0 20	mcl	10YR41 00						0	0	HR	5							
	20 35	c	25Y 71 00	10YR68 00	M		00MN00 00	Y	0	0	HR	20		P			Y		Q DISTURBED
20	0 30	lms	10YR44 00						0	0	HR	2							
	30 50	lms	10YR54 00						0	0		0		M					
	50 75	lms	10YR64 74	10YR68 00	C			Y	0	0		0		M					
	75 120	scl	10YR63 00	10YR68 00	M			Y	0	0		0		M					Q DISTURBED
21	0 25	f l	10YR43 00						0	0	HR	4							
	25 40	scl	10YR53 00	10YR56 00	C			Y	0	0	HR	4		M					
	40 58	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	3		M					
	58 85	c	10YR53 00	75YR58 00	M			Y	0	0	HR	2		P			Y		

				-MOTTLES			PED			STONES-			STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
22	0 25	fsl	10YR42 00						0	0	HR	1						
	25-80	lms	10YR52 53	10YR54 00	F				0	0	HR	2		M				
	80 100	hcl	10YR52 53	75YR58 00	M			Y	0	0		0		P			Y	
23	0 25	fsl	10YR42 00						0	0	HR	3						
	25-85	msl	10YR42 54						0	0	HR	2		M				
	85-100	hcl	10YR62 63	75YR58 00	M			Y	0	0	HR	5		M				
24	0 30	mszl	10YR43 00						0	0	HR	3						
	30-40	mszl	10YR44 00						0	0		0		M				
	40 65	scl	10YR54 00						0	0		0		M				
	65-90	scl	10YR52 54	10YR56 58	C			Y	0	0	HR	5		M				
	90 120	hcl	25Y 53 61	10YR68 00	M			Y	0	0		0		P			Y	
25	0 25	f l	10YR43 00						0	0	HR	2						
	25-53	hcl	10YR43 44						0	0	HR	2		M				
	53 100	hcl	10YR53 54	75YR58 00	C			Y	0	0	HR	2		M				
	100 120	msl	25Y 63 00	10YR58 00	C			Y	0	0		0		M				
26	0 23	f l	10YR42 00						0	0	HR	2						
	23-35	mszl	10YR44 00						0	0		0		M				
	35-55	ms l	10YR53 62	10YR58 00	C			Y	0	0		0		M				
	55-120	hcl	10YR53 62	75YR58 00	M			Y	0	0		0		M				
27	0 20	mcl	10YR42 00						0	0		0						
	20 30	mcl	25Y 41 51	10YR46 00	C			Y	0	0		0		M				
	30 50	hcl	25Y 61 00	10YR58 00	C			Y	0	0		0		P			Y	
	50 100	ms	25Y 71 00	10YR58 00	C			Y	0	0		0		M			Y	
28	0 25	mcl	10YR42 00						0	0	HR	3						
	25-70	hcl	25Y 72 62	10YR58 00	M			Y	0	0		0		P	Y		Y	
29	0 35	fsl	10YR42 00						0	0	HR	1						
	35 60	mcl	10YR43 54	10YR58 00	F				0	0		0		M				
	60 100	c	10YR63 64	75YR58 00	M			Y	0	0		0		P	Y		Y	
30	0 35	fsl	10YR42 00						0	0		0						
	35-60	mcl	10YR63 00	10YR58 00	M			Y	0	0		0		M				
	60-85	c	10YR56 63	10YR58 00	M			Y	0	0		0		P	Y		Y	
31	0 30	ms	10YR44 00						0	0	HR	2						
	30 100	ms	25Y 64 00	10YR58 00	C			Y	0	0		0		M				
32	0 26	mcl	10YR41 00	10YR46 00	C			Y	0	0		0						
	26 70	c	25Y 61 00	10YR58 68	M		00MN00 00	Y	0	0	HR	5		P			Y	
33	0 33	fsl	10YR43 00	10YR46 00	C			Y	0	0	HR	3						
	33 38	mcl	10YR52 00	10YR56 00	C			Y	0	0	HR	2		M				
	38 55	mcl	25Y 53 00	10YR68 00	C		00MN00 00	Y	0	0		0		M				
	55-120	c	25Y 62 00	75YR68 00	C			Y	0	0		0		P			Y	

				-MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
34	0 15	mcl	10YR42 00	10YR46 00	C			Y	0	0		0						
	15-35	c	25Y 51 00	10YR58 00	C			Y	0	0		0			P		Y	
	35-60	c	25Y 61 71	10YR68 00	M			Y	0	0		0			P		Y	
	60 80	c	25Y 61 71	10YR68 00	M		00MN00 00	Y	0	0	HR	10			P		Y	
35	0 20	fszl	10YR41 00						0	0	HR	15						
36	0 30	hcl	25Y 41 00	10YR58 00	C			Y	0	0	HR	3						
	30 50	hcl	25Y 61 00	10YR58 56	C			Y	0	0		0			P		Y	
	50 65	hcl	25Y 61 62	10YR58 56	M			Y	0	0		0			P		Y	
37	0 10	mcl	10YR32 31						0	0		0						
	10 38	c	25Y 52 62	10YR58 00	M			Y	0	0		0			P		Y	
	38 60	c	25Y 61 00	75YR58 00	M			Y	0	0		0			P		Y	
38	0 30	mcl	10YR53 72	10YR68 00	M			Y	0	0	HR	8						
	30 55	mcl	25Y 41 42	75YR58 00	C			Y	0	0	HR	5			M			
	55 80	c	25Y 63 53	10YR58 00	M			Y	0	0		0			P		Y	
39	0 25	mcl	10YR42 00						0	0		0						
	25 65	c	10YR52 00	10YR58 00	M			Y	0	0		0			P		Y	
	65-70	c	10YR52 00	75YR58 00	M		00MN00 00	Y	0	0	HR	20			P		Y	
40	0 25	hcl	10YR41 42	10YR46 00	C			Y	0	0		0						
	25-80	c	25Y 51 61	75YR68 00	M			Y	0	0	HR	5			P		Y	
41	0 25	mcl	10YR42 00	10YR46 00	C			Y	0	0	HR	3						
	25-40	mcl	10YR51 00	10YR58 00	C			Y	0	0	HR	20			M			
	40 80	c	25Y 61 71	10YR68 00	M			Y	0	0	HR	3			P		Y	
42	0 25	hcl	25Y 41 42	10YR56 00	C			Y	0	0		0						
	25 35	c	25Y 51 00	10YR58 00	M			Y	0	0		0			P		Y	
	35-40	hcl	25Y 61 00	75YR58 00	M			Y	0	0	HR	40			P		Y	
43	0 30	mcl	10YR42 00	10YR46 00	F				0	0	HR	5						
	30 50	c	25Y 61 00	10YR58 00	M			Y	0	0	HR	10			P		Y	
	50 60	c	25Y 61 00	10YR58 00	M			Y	0	0	HR	30			P		Y	
44	0 28	mcl	10YR41 00	10YR46 56	C			Y	0	0		0						
	28-80	c	25Y 51 00	10YR58 00	M		00MN00 00	Y	0	0	HR	3			P		Y	
45	0 25	mcl	10YR42 00						0	0	HR	2						
	25 55	hcl	10YR56 00	00MN00 00	F				0	0		0			M			
	55-75	scl	10YR56 00	75YR68 00	C			S	0	0		0			M			
	75-120	scl	25Y 61 00	10YR58 68	M			Y	0	0		0			M			
46	0 20	fs l	10YR43 00						0	0	HR	15						IMP FROZEN