

1506/077/96

A1
Hart District Replacement Local Plan
Site 1074 - Love Lane Fields
Agricultural Land Classification
October 1996



Ministry of
Agriculture
Fisheries
and Food

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

HART DISTRICT REPLACEMENT LOCAL PLAN SITE 1074 - LOVE LANE FIELDS

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on approximately 37 hectares of land situated to the west of Yateley in Hampshire. The survey was carried out during October 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 Hart District Replacement 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 area was used as permanent grazing.

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)	% site area	% surveyed area
3a	11.4	30.6	31.3
3b	21.9	58.9	60.2
4	3.1	8.3	8.5
Other Land	0.8	2.2	-
Total surveyed area	36.4	-	100.0
Total site area	37.2	100.0	-

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 37 borings and four soil pits were described.

8. The agricultural land on this site has been classified as Subgrade 3a (good quality), Subgrade 3b (moderate quality) and Grade 4 (poor quality) the key limitation being soil droughtiness. Soils on the site comprise sandy loam, or occasionally, loamy sand topsoils which are variably stony. These overlie similar textures in the subsoil which generally become sandier with depth. The combination of soil textures, structures and stone contents, given the local climatic regime, results in soils which have inadequate reserves of soil moisture and therefore suffer from soil droughtiness. The degree of soil droughtiness, and therefore the ALC grade, is determined by the sand and stone contents of the soils.

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	SU 801 607
Altitude	m, AOD	70
Accumulated Temperature	day°C (Jan-June)	1447
Average Annual Rainfall	mm	675
Field Capacity Days	days	142
Moisture Deficit, Wheat	mm	112
Moisture Deficit, Potatoes	mm	106

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 (ATO, 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 there is no overall climatic limitation (Climatic Grade 1). However, climatic factors do interact with soil properties to influence soil wetness and droughtiness. At this location the crop adjusted soil moisture deficits are comparatively high thus increasing the likelihood of soil droughtiness. Correspondingly the field capacity day values are relatively low thus decreasing the effects of soil wetness.

14. Exposure is not thought likely to adversely affect agricultural land use on this site (Met Office unpublished data, 1971). However, the site is located in an area recorded as being at risk of frost which lies in the Blackwater Valley, and which could limit very good quality land to a lower

grade (Met Office unpublished data, 1971). Despite this, the field survey indicates that frost risk is not likely to be significant on this site.

Site

15. The land on this site is flat in the northern half of the site at 65m AOD, and rises to 90m AOD at the southern edge of the site. However neither gradient or microrelief affect agricultural land quality on this site.
16. There is no threat of flooding from water courses.

Geology and soils

17. The relevant geological sheet (BGS, 1978) maps the northern half of the site as Bagshot Beds with Low-Level Terrace Deposits at the northern edge. The southern half of the site is mapped as Bracklesham Beds with Barton Beds and High-Level Terrace Deposits at the southern edge of the site.
18. The most recently published soils information for this area (SSEW, 1983) maps the Efford 1 soil association over the whole site. The soils are described as 'well drained fine loamy soils over gravel, associated with similar permeable soils variably affected by groundwater.' (SSEW, 1983).
19. Detailed field survey revealed similar soils to those described above.

Agricultural Land Classification

20. 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.
21. 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

22. There are two areas which have been classified as Subgrade 3a land due to a soil droughtiness limitation. The soil profiles here comprise slightly flinty (3-7% >2cm, 0-1% >6cm, 0-10% total flint) fine and medium sandy loam and loamy sand topsoils over moderately flinty to extremely flinty (17-75% total flint) fine and medium sandy loam, loamy sand, and sand subsoils. At approximately 50cm depth some profiles comprise very flinty (50% total flint) loamy sands (see pit 2, Appendix III) and sandy loams, over extremely flinty (75% total flint) loamy sands. These profiles are Wetness Class I, Wetness Grade 1. Other profiles comprise sandy clay loams from approximately 40cm depth, which are slightly flinty (10-15% total stone), these are also gleyed from the upper subsoil (see asp 11, Appendix III) Given the local climatic regime these profiles have been classified as Wetness Class II, Wetness Grade 1. A third type of profile comprises of slightly flinty (7% total flint) fine and medium sandy loam topsoils over stoneless to slightly flinty (0-7% total flint) fine and medium loamy sand, sandy loam, sand and sandy clay loam subsoils. These profiles are gleyed from approximately 50cm depth and are placed in Wetness Class I, Wetness Grade 1. However, the combination of soil textures, structures and stone contents acts to reduce the amount of profile available water for crops leading to drought stress. As a result the level and consistency of crop growth and yields will be restricted.

Subgrade 3b

23. Two areas of Subgrade 3b land have been mapped where the land is restricted by a significant soil droughtiness limitation. The profiles comprise very slightly flinty to slightly flinty (0-5% >2cm, 5-15% total flint) medium sandy loam and loamy medium sand topsoils over very slightly flinty to very flinty (5-59% total flint) medium sandy loam, loamy medium and coarse sand subsoils. These are gleyed from approximately 40cm depth and are classified as Wetness Class 1, Wetness Grade 1 (see pit 1, Appendix III). Other profiles are gleyed from the surface. These have very slightly flinty to slightly flinty (2-10% total flint) medium sandy loam topsoils over stoneless to very slightly flinty (0-5%) loamy medium sand, medium sandy loam and medium sand subsoils. Because of the coarse soil textures and the prevailing climatic conditions they are classified as Wetness Class 1, Wetness Grade 1. In this local climatic regime the combination of coarse soil textures, structures and stone content acts to reduce the available moisture within the profile causing severe drought stress. This may lead to reduced crop growth and yields.

Grade 4

24. The south western area of land on this site has been classified as Grade 4 due to a severe soil droughtiness limitation. The profiles comprise very slightly to moderately flinty (0-18% >2cm, 6% >6cm, 2-23% total stone) loamy medium sand and medium sandy loam topsoils over very flinty (50% total stone) loamy medium sand, loamy sand and medium sand subsoils. In this local climatic regime the combination of coarse soil textures, structures and stone content acts to reduce the available moisture within the profile causing very severe drought stress. This may lead to reduced crop growth and yields.

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SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. 284, Basingstoke*. 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

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:

Sample location map

Soil abbreviations - Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

Database Printout - Horizon Level Information

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. **GLEYSPL:** 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. **GLEYS:** 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 dolomitic 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/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:

<u>degree of development</u>	WK : weakly developed ST : strongly developed	MD : moderately developed
<u>ped size</u>	F : fine C : coarse	M : medium VC : very coarse
<u>ped shape</u>	S : single grain GR : granular SAB : sub-angular blocky PL : platy	M : massive AB : angular blocky PR : prismatic

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 |

SOIL PIT DESCRIPTION

Site Name : HART LP - SITE 1074 Pit Number : 1P

Grid Reference: SUB0106090 Average Annual Rainfall : 675 mm
 Accumulated Temperature : 1447 degree days
 Field Capacity Level : 142 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MSL	10YR31 32	5	9	HR					
30- 42	LMS	10YR43 00	0	9	HR		MDCSAB	FR	G	
42- 58	LMS	10YR53 00	0	10	HR	M	MDCSAB	FM	M	
58- 70	LMS	10YR53 00	0	27	HR	C			M	
70-120	LMS	10YR53 00	0	59	HR	C			M	

Wetness Grade : 1 Wetness Class : I
 Gleying : 042 cm
 SPL : No SPL

Drought Grade : 3B APW : 081mm MBW : -31 mm
 APP : 074mm MBP : -32 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HART LP - SITE 1074 Pit Number : 2P

Grid Reference: SU80406110 Average Annual Rainfall : 675 mm
 Accumulated Temperature : 1447 degree days
 Field Capacity Level : 142 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MSL	10YR33 00	7	10	HR					
30- 47	MSL	10YR43 00	0	17	HR		WKMSAB	FR	G	
47- 68	LMS	10YR44 00	0	50	HR				M	
68- 75	LMS	10YR46 00	0	75	HR				M	

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 3B APW : 078mm MBW : -34 mm
 APP : 080mm MBP : -26 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HART LP - SITE 1074 Pit Number : 3P

Grid Reference: SU80006060 Average Annual Rainfall : 675 mm
 Accumulated Temperature : 1447 degree days
 Field Capacity Level : 142 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT. STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MSL	10YR32 00	3	7	HR					
27- 47	LMS	10YR34 00	0	7	HR		MDCSAB	FR	G	
47- 57	LMS	10YR53 00	0	0		C	MDCSAB	F	M	
57- 80	MS	10YR72 42	0	5	HR	C	WDCSAB	FR	G	
80- 95	SCL	10YR72 42	0	0		C	MDCSAB	FR	M	
95-120	MS	10YR72 42	0	0		C	MDCSAB	FR	G	

Wetness Grade : 1 Wetness Class : I
 Gleying : 047 cm
 SPL : No SPL

Drought Grade : 3B APW : 100mm MBW : -12 mm
 APP : 075mm MBP : -31 mm

FINAL ALC GRADE : 1
 MAIN LIMITATION :

SOIL PIT DESCRIPTION

Site Name : HART LP - SITE 1074 Pit Number : 4P

Grid Reference: SU80006020 Average Annual Rainfall : 675 mm
 Accumulated Temperature : 1447 degree days
 Field Capacity Level : 142 days
 Land Use : Permanent Grass
 Slope and Aspect : 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	LMS	10YR32 00	18	23	HR					
30- 40	MS	10YR53 00	0	50	HR				M	
40- 70	MS	10YR53 00	0	49	HR				M	

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : No SPL

Drought Grade : 4 APW : 040mm MBW : -72 mm
 APP : 041mm MBP : -65 mm

FINAL ALC GRADE : 4
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS	
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP					MB
1	SU80406120	PGR			1	1	000	0	000	0			DR	3A	IMP 45 SEE 2P
1P	SU80106090	PGR		042	1	1	081	-31	074	-32	3B		DR	3B	IMP 90
2	SU80306110	PGR			1	1	000	0	000	0			DR	3B	IMP 30 SEE 1P
2P	SU80406110	PGR			1	1	078	-34	080	-26	3B		DR	3A	DR TO 120
3	SU80406110	PGR			1	1	051	-61	053	-53	4		DR	3A	IMP 60 SEE 2P
3P	SU80006060	PGR		047	1	1	100	-12	075	-31	3B			1	
4	SU80306100	PGR			1	1	000	0	000	0			DR	3B	IMP 30
4P	SU80006020	PGR	N	02	1	1	040	-72	041	-65	4		DR	4	
5	SU80406100	PGR			1	1	054	-58	054	-52	4		DR	3A	IMP 42 SEE 2P
6	SU80306090	PGR			1	1	052	-60	054	-52	4		DR	3B	IMP62 SEE 1P
6A	SU79956100	PGR			1	1	028	-84	028	-78	4		DR	3B	IMP-25 SEE 1P
7	SU80406090	PGR			1	1	028	-84	028	-78	4		DR	3B	IMP-25 SEE 1P
8	SU80306080	PGR			1	1	000	0	000	0			DR	3B	SEE 1P
9	SU80206090	PGR			1	1	078	-34	078	-28	3B		DR	3A	IMP 50 SEE 2P
10	SU80306090	PGR			1	1	000	0	000	0			DR	3B	IMP 50 POSS A
11	SU80406090	PGR		030	2	1	114	2	097	-9	3A		DR	3A	
12	SU80206080	PGR			1	1	065	-47	065	-41	3B		DR	3A	IMP 50 SEE2P3P
13	SU80306080	PGR			1	1	046	-66	046	-60	4		DR	3B	IMP 30
14	SU80106070	PGR			1	1	000	0	000	0			DR	3B	IMP 45 POSS A
15	SU80206070	PGR			1	1	049	-63	049	-57	4		DR	3B	IMP 35
16	SU80006070	PGR		075	1	1	083	-29	070	-36	3B			1	IMP 90 SEE 3P
17	SU80106070	PGR			1	1	000	0	000	0			DR	3B	IMP 25
18	SU80206070	PGR			1	1	042	-70	042	-64	4		DR	3B	IMP 35
19	SU79906050	PGR		100	1	1	088	-24	061	-45	3B		DR	3B	
20	SU80006050	PGR			1	1	071	-41	074	-32	3B		DR	3A	IMP 72 SEE2P3P
21	SU80106050	PGR	N	01	1	1	000	0	000	0			DR	3B	
22	SU80206050	PGR			1	1	000	0	000	0			DR	3B	IMP 30
23	SU80006040	PGR	N	01	1	1	093	-19	075	-31	3B		DR	3A	IMP 95
24	SU80106040	PGR			1	1	035	-77	035	-71	4		DR	3B	IMP 30 SEE 1P
25	SU80206040	PGR	E	02	1	1	074	-38	079	-27	3B		DR	3B	IMP 65
26	SU80006030	PGR	N	03	1	1	000	0	000	0			DR	3B	IMP 30
27	SU80106030	PGR	E	02	1	1	035	-77	035	-71	4		DR	3B	
28	SU79906020	PGR	N	02	1		026	-86	026	-80	4		DR	4	IMP20 SEE 4P
29	SU80006020	PGR	E	04	1	1	032	-80	032	-74	4		DR	4	IMP 25 SEE 4P
30	SU80106020	PGR	E	03	1	1	054	-58	054	-52	4		DR	3B	IMP-50
31	SU79906010	GRA			1	1	000	0	000	0			DR	4	IMP 35 SEE 4P
32	SU80006010	PGR	E	05	1	1	000	0	000	0			DR	4	IMP 30 SEE 4P
33	SU80106010	PGR	E	02	1	1	093	-19	076	-30	3A		DR	3A	BORDER 3B
34	SU80106000	PGR	E	02	1	1	051	-61	051	-55	4		DR	3B	
35	SU80105990	PGR	E	01	1	1	114	2	082	-24	3A		DR	3A	Q SPL 90
36	SU80006000	PGR	SE	03	1	1	063	-49	063	-43	3B		DR	3B	IMP 75

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED		----STONES----			STRUCT/	SUBS	SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH				
1	0-32	ms1	10YR22 00						0	0	HR	10			
	32-45	1ms	10YR32 00						0	0	HR	20	M		SEE 2P
1P	0-30	ms1	10YR31 32						5	0	HR	9			
	30-42	1ms	10YR43 00						0	0	HR	9	MDCSAB FR G		PSD=MSL
	42-58	1ms	10YR53 00	75YR58 00	M			Y	0	0	HR	10	MDCSAB FM M		PSD=LCS
	58-70	1ms	10YR53 00	10YR56 00	C			Y	0	0	HR	27	M		PSD=LCS
	70-120	1ms	10YR53 00	10YR56 00	C			Y	0	0	HR	59	M		
2	0-30	ms1	10YR22 00						0	0	HR	10			IMP Flinty
2P	0-30	ms1	10YR33 00						7	1	HR	10			
	30-47	ms1	10YR43 00						0	0	HR	17	WKMSAB FR G		PSD=FSL
	47-68	1ms	10YR44 00						0	0	HR	50	M		PSD=CSL
	68-75	1ms	10YR46 00						0	0	HR	75	M		
3	0-30	1ms	10YR32 00						0	0	HR	10			
	30-60	1ms	10YR43 00						0	0	HR	20	M		IMP Flints
3P	0-27	ms1	10YR32 00						3	0	HR	7			
	27-47	1ms	10YR34 00						0	0	HR	7	MDCSAB FR G		PSD=FSL
	47-57	1ms	10YR53 00	10YR58 00	C			Y	0	0		0	MDCSAB F M		PSD=FSL
	57-80	ms	10YR72 42	75YR58 00	C			Y	0	0	HR	5	WDCSAB FR G		PSD=LFS
	80-95	sc1	10YR72 42	10YR58 00	C			Y	0	0		0	MDCSAB FR M		PSD=FSL
	95-120	ms	10YR72 42	75YR58 00	C			Y	0	0		0	MDCSAB FR G		
4	0-30	ms1	10YR22 00						0	0	HR	10			IMP Flinty
4P	0-30	1ms	10YR32 00						18	6	HR	23			
	30-40	ms	10YR53 00						0	0	HR	50	M		PSD=LMS
	40-70	ms	10YR53 00						0	0	HR	49	M		PSD=LS IMP Flinty
5	0-30	ms1	10YR42 00						0	0	HR	10			
	30-42	1ms	10YR53 00						0	0	HR	10	M		IMP Flinty
6	0-30	1ms	10YR31 00						0	0	HR	10			
	30-50	1ms	10YR42 00						0	0	HR	15	G		
	50-62	ms	75YR32 00				05YR46 00		0	0	HR	5	M		IMP Flinty
6A	0-25	1ms	10YR31 00						0	0	HR	15			IMP Flinty
7	0-25	1ms	10YR31 00						0	0	HR	15			IMP Flinty
8	0-35	1ms	10YR31 00						0	0	HR	5			
	35-38	1ms	10YR42 53				10YR56 00		0	0	HR	10	M		IMP Flints
9	0-32	ms1	10YR21 00						0	0	HR	5			
	32-50	ms1	10YR32 00						0	0	HR	5	G		IMP Flints

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
10	0-30	ms1	10YR22 00					0	0	HR	10						
	30-40	1ms	10YR42 00					0	0	HR	15		M				
	40-50	1ms	10YR44 00	10YR56 00 F				0	0	HR	15		M				IMP Flints
11	0-30	ms1	10YR32 00					0	0	HR	5						
	30-40	1ms	10YR42 00	10YR56 00 C				Y	0	0	HR	10		M			
	40-60	sc1	10YR51 00	10YR56 00 C				Y	0	0	HR	10		M			
	60-75	sc1	10YR51 00	10YR58 00 M				Y	0	0		0		M			
	75-100	sc1	10YR61 00	75YR58 00 M				Y	0	0	HR	15		M			IMP Graveley
12	0-30	ms1	10YR21 00					0	0	HR	5						
	30-45	1ms	10YR64 00				00FE00 00	0	0	HR	5		G				
	45-50	fs	10YR73 74					0	0	HR	10		M				IMP Flints
13	0-30	ms1	10YR31 00					0	0	HR	10						IMP Flinty
14	0-35	ms1	10YR22 00					0	0	HR	10						
	35-45	ms1	10YR32 00					0	0	HR	15		M				IMP Flints
15	0-30	ms1	10YR31 00					0	0	HR	10						
	30-35	1ms	10YR43 00					0	0	HR	20		M				IMP Flints
16	0-29	ms1	10YR32 00					0	0	HR	10						
	29-45	1ms	10YR42 00					0	0	HR	10		M				
	45-55	1ms	10YR53 58					0	0	HR	10		M				
	55-75	ms	10YR64 00					0	0	HR	5		G				
	75-90	sc1	75YR58 00	25 Y63 00 M				Y	0	0		0		M			IMP Flints
17	0-25	ms1	10YR22 00					0	0	HR	10						IMP Flinty
18	0-30	1ms	10YR32 00					0	0		0						
	30-35	1ms	10YR43 53					0	0	HR	20		M				IMP Flints
19	0-29	1ms	10YR32 00					0	0	HR	5						
	29-50	1ms	10YR43 53					0	0	HR	10		M				
	50-100	ms	10YR53 54					0	0	HR	2		G				
	100-120	sc1	10YR64 00	75YR58 00 M				Y	0	0	HR	5		M			
20	0-28	ms1	10YR42 00					0	0	HR	5						
	28-72	1ms	10YR43 53					0	0	HR	5		M				IMP FLints
21	0-30	ms1	10YR22 00					0	0	HR	10						IMP Flinty
22	0-30	ms1	10YR22 00					0	0	HR	15						IMP Flinty
23	0-30	ms1	10YR42 00					0	0	HR	10						
	30-50	1ms	25 Y53 00	000C00 00 F				0	0	HR	15		M				
	50-65	1ms	25 Y53 00	000C00 00 F				0	0	HR	10		M				
	65-85	sc1	25 Y64 00	75YR58 00 M				Y	0	0	HR	10		M			
	85-95	ms1	25 Y64 00	75YR58 00 M				Y	0	0	HR	10		M			IMP Flints

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----				STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
24	0-30	1ms	10YR32 00					0	0	HR	10							IMP Flinty
25	0-32	ms1	10YR41 00	10YR56 00	C			Y	0	0	HR	10						
	32-55	1ms	10YR64 00	10YR58 00	C			Y	0	0	HR	5			G			
	55-65	ms1	10YR71 00	10YR68 00	C			Y	0	0	HR	5			M			IMP Flints
26	0-30	1ms	10YR32 00					0	0	HR	10							IMP Flinty
27	0-30	1ms	10YR33 00					0	0	HR	10							IMP Flinty
28	0-20	1ms	10YR31 00					0	0	HR	2							IMP Flinty
29	0-25	1ms	10YR31 00					0	0	HR	2							IMP Flinty
30	0-20	ms1	10YR31 61	10YR56 00	C			Y	0	0	HR	2						
	20-50	1ms	10YR42 61	10YR58 00	C			Y	0	0	HR	3			G			IMP Flints
31	0-30	ms1	10YR22 00					0	0	HR	10							
	30-35	1ms	10YR43 00					0	0	HR	15			M				IMP Flints
32	0-30	ms1	10YR31 00					0	0	HR	10							IMP Flinty
33	0-32	ms1	10YR42 00	10YR46 00	C			Y	0	0	HR	5						
	32-58	1ms	10YR52 00	10YR46 00	C			Y	0	0	HR	5			G			
	58-95	ms	10YR52 62	10YR58 00	C			Y	0	0		0			M			
	95-120	ms	10YR62 00	10YR58 00	C			Y	0	0		0			M			
34	0-30	1ms	10YR31 00					0	0	HR	2							
	30-50	1ms	10YR42 53					0	0	HR	10			M				IMP Flints
35	0-35	ms1	10YR42 00					0	0	HR	3							
	35-52	1ms	25 Y33 00					0	0	HR	5			G				
	52-80	1ms	25 Y53 00	75YR46 00	C			Y	0	0	HR	2			G			
	80-90	ms1	25 Y63 00	10YR58 00	C			Y	0	0		0			M			
	90-120	c	05 Y62 00	75YR68 00	M			Y	0	0		0			P		Y	
36	0-32	1ms	10YR31 00					0	0	HR	10							
	32-65	ms	10YR64 00					0	0	HR	5			G				
	65-75	sc1	05YR58 00					0	0		0			M				IMP Flints