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Hart District Replacement Local Plan
Objector Site 423, Winchfield, Hampshire

Agricultural Land Classification
ALC Map and Report

May 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION

HART DISTRICT REPLACEMENT LOCAL PLAN
OBJECTOR SITE 423, WINCHFIELD, HAMPSHIRE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 51 hectares of land to the north of the railway line at Winchfield, Hampshire. The survey was carried out during May 1997.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with its input to the Hart District Replacement Local Plan. This survey includes part of a 1995 survey (ADAS/FRCA Ref: 1506/107/95), these surveys supersede any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of the FRCA. 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, all of the agricultural land was under permanent grassland. The areas mapped as 'Other land' comprise Winchfield House and extensive wooded grounds.

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.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	9.5	41.8	18.6
3a	12.3	54.2	24.2
3b	0.9	4.0	1.8
Other land	28.2	N/A	55.4
Total surveyed area	22.7	100.0	44.6
Total site area	50.9	-	100.0

7. The fieldwork was conducted at an average density of approximately one boring per hectare. A total of 27 borings and two soil pits were described.

8. The majority of land on the site has been classified as Grade 2 and Subgrade 3a (very good and good quality, respectively). Two small areas of Subgrade 3b (moderate quality) land have also been mapped in the extreme north west and south east of the site. Soil droughtiness is the principal limitation on this site though Subgrade 3b land, and other occasional borings are limited by soil wetness.

9. Most of the soil profiles are well drained, comprising very slightly to slightly flinty, sandy and coarse loamy soils. The combination of soil textures, structures and stone contents acts to reduce the amount of profile available water for crops, thus reducing the level and consistency of crop yields, given the local climatic conditions. This land is therefore limited by soil droughtiness and has been classified as either Grade 2 or Subgrade 3a, depending on the amount of sand and flint present. In some of these profiles, clayey lower subsoils also act to slightly impede drainage. Consequently, this land may be equally prone to soil wetness restrictions which will slightly reduce the flexibility of cropping, stocking and cultivations. To the extreme north and south of the site the soils are generally heavier and more poorly drained, comprising medium and heavy textured topsoils over clay subsoils. This land has been classified as either Subgrade 3a or 3b depending on the degree of wetness limitation.

FACTORS INFLUENCING ALC GRADE

Climate

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

11. 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 762 554	SU 767 551	SU 765 548
Altitude	m, AOD	85	75	70
Accumulated Temperature	day°C (Jan-June)	1433	1444	1450
Average Annual Rainfall	mm	699	692	694
Field Capacity Days	days	148	147	148
Moisture Deficit, Wheat	mm	107	108	109
Moisture Deficit, Potatoes	mm	99	101	102
Overall climatic grade	N/A	Grade 1	Grade 1	Grade 1

12. 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.

13. 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.

14. The combination of rainfall and temperature at this site mean there is no overall climatic limitation. However, climatic factors can interact with soil properties to influence soil wetness and/or droughtiness.

15. Other local climatic factors such as exposure and frost risk are not believed to adversely affect the site. The site is climatically Grade 1.

Site

16. The site ranges in altitude from 94m AOD in the north west, falling to 70m AOD in the south east of the site.

17. Gradient, microrelief and flooding do not affect land quality in this area.

Geology and soils

18. The most detailed published geological information for the area (BGS, 1981), maps most of the site as being underlain by deposits of the Bracklesham Beds with a small outcrop of Bagshot Beds in the north west.

19. The most detailed published soils information for the area (SSEW, 1983), shows most of the site to be mapped as soils of the Bursledon soil association. These soils are described as 'Deep fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging associated with deep coarse loamy soils variably affected by groundwater. Some slowly permeable seasonally waterlogged loamy over clayey soils. Landslips and associated irregular terrain locally' (SSEW, 1983). In the north west a small area of soils of the Frilford soil association is mapped. These soils are described as 'Deep well drained sandy and coarse loamy soils. Some ferruginuous sandy and some coarse loamy soils with slowly permeable subsoils affected by groundwater. Risk of water erosion' (SSEW).

20. Detailed field examination broadly confirmed the existence of soils similar to those described above.

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.

23. Across the north western part of the site, soil data was collected during both the 1995 and 1997 surveys in order to investigate their variable nature, having developed from Bracklesham and Bagshot Beds (interbedded sands and clays). However, the 1995 survey

results remain unchanged since it was felt that the data collected at that time was more representative of that part of the site. Soils data from both surveys is presented at Appendix II.

Grade 2

24. Grade 2 (very good quality) agricultural land is mapped in two areas, to the north west and north east of the site. The north western area was originally identified during the 1995 survey (1506/107/95) and is represented by soil inspection Pit 2 from that survey. Both areas contain borings of either higher or lower quality but these were too limited in number and extent to be mapped separately. The principal limitation affecting the Grade 2 land is a minor soil droughtiness restriction occasionally combined with a soil wetness limitation.

25. Typical Grade 2 land has deep, well drained profiles comprising very slightly to slightly stony (2-10% total flints by volume), fine or medium sandy loam topsoils. These pass into either stoneless or very slightly stony (0-5% flints by volume), medium sandy loam upper subsoils. The lower subsoils are similarly stony, comprising either moderately well structured medium sandy loams or well structured loamy medium sands. At depth (approximately 75cm though occasionally shallower) poorly structured clays occur. This combination of textures, structures and stones contents slightly reduces the amount of profile available water so that there is insufficient water at critical times of the growing season. This restricts the range of crops that can be grown and may affect the level and consistency of yields.

26. Some of this land also experiences a slight soil wetness limitation as evidenced by the presence of gleying within 40 cm. A slowly permeable clay subsoil from approximately 44 cm, impedes drainage through the profile, causing seasonal waterlogging. The resultant soil wetness places these soils into Wetness Class III, as wet soils can inhibit seed germination and growth. The number of days when the land is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock is also reduced. However, the light textured topsoils help to alleviate some of the effects of soil wetness, such that Grade 2 is appropriate.

Subgrade 3a

27. Subgrade 3a (good quality) land bisects the Grade 2 land and stretches from the north to the south of the site. Land to the north of the M3 motorway suffers principally from a soil droughtiness limitation whilst south of the motorway, on lower land, soils are prone to a soil wetness limitation.

28. Land with a slight soil droughtiness limitation is typified by soil inspection Pit 2 from the 1997 survey (see Appendix II), and comprises deep and well drained profiles. Soils generally comprise very slightly stony (2-5% by flints by volume) fine sandy loam, medium sandy loam, or loamy medium sandy topsoils which overlie stoneless to very slightly stony (0-2% flints), upper subsoils of similar texture. The profiles then pass to loamy medium sand and medium sand or, sandy clay loam and clay lower subsoils which generally continue to depth with a similar amount of flint. Occasional profiles become impenetrable over stony layers at moderate depths. Structural conditions in the subsoils have mainly been assessed as good. However, the sandy clay loam and clay lower subsoils are generally moderately to poorly structured depending on the clay content. In this local climatic regime the combined effect of texture, structure and stone content will reduce the amount of profile available water for

crops. This land will therefore be susceptible to drought stress in dry periods, resulting in variable yields and a reduction in the range of crops that can be grown. This land cannot, therefore, be classified any higher than Subgrade 3a.

29. Subgrade 3a land with a minor soil wetness limitation is characterised by soil inspection Pit 1 (see Appendix II) from the 1997 survey. Typically, the soil profiles are similar to those described in paragraph 25, having been assessed as Wetness Class III. However, the topsoil textures are slightly heavier (medium clay loam), thus causing a slightly more significant soil wetness and workability limitation. Consequently, the number of days when the soil can be successfully cultivated or trafficked by machinery and grazing livestock will be further restricted.

Subgrade 3b

30. Two small areas of Subgrade 3b (moderate quality) land have been mapped in the extreme north west and south east of the site. The principal restriction is soil wetness. The former area of Subgrade 3b land was identified during the earlier survey (1506/107/95) and is represented by soil inspection Pit 1 from that survey.

31. The soil profiles are typically poorly drained, comprising stoneless to slightly stony medium or heavy clay loam topsoils. These overlie poorly structured, slowly permeable heavy clay loam, sandy clay loam or clay upper subsoils which impede the free flow of water through the profile. The resultant waterlogging places these soils into Wetness Class IV which, in combination with the heavier topsoil textures restricts this land to Subgrade 3b. Excessive soil wetness adversely affects seed germination and survival, partly by a reduction in soil temperature and partly because of anaerobism. It also inhibits the development of a good root system and can, in extreme cases, lead to plant death. The timing and flexibility of cultivations will also be significantly restricted.

Colin Pritchard
Resource Planning Team
Eastern Region
FRCA Reading

SOURCES OF REFERENCE

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

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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 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 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:

degree of development	**WK**: weakly developed **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**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 appropiate 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

1506/067/92

SOIL PIT DESCRIPTION

Site Name : HART LP, SITE 423 Pit Number : 1P

Grid Reference: SU76405480
Average Annual Rainfall : 696 mm
Accumulated Temperature : 1450 degree days
Field Capacity Level : 148 days
Land Use : Permanent Grass
Slope and Aspect : 01 degrees NE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 23	MCL	10YR43 00	0	2	HR					
23- 44	SCL	25Y 54 00	0	2	HR	M	MDCSAB	FR	M	
44- 66	C	05Y 63 00	0	5	HR	M	MDCSAB	FR	M	
66-120	C	25Y 62 00	0	2	HR	C	WKCSAB	FM	P	

Wetness Grade : 3A
Wetness Class : III
Gleying :023 cm
SPL :066 cm

Drought Grade : 2
APW : 130mm MBW : 21 mm
APP : 110mm MBP : 8 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

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SOIL PIT DESCRIPTION

Site Name : HART LP, SITE 423 Pit Number : 2P

Grid Reference: SU76405500
Average Annual Rainfall : 696 mm
Accumulated Temperature : 1450 degree days
Field Capacity Level : 148 days
Land Use : Permanent Grass
Slope and Aspect : 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	FSL	10YR31 00	0	2	HR	C				
30- 50	LMS	25Y 62 00	0	1	HR	C	MDCSAB	FR	G	
50- 74	MS	25Y 71 00	0	0		C	WVCSAB	FR	G	
74-120	SCL	25Y 72 00	0	0		M	WKCSAB	FR	M	

Wetness Grade : 1
Wetness Class : II
Gleying : 0 cm
SPL : No SPL

Drought Grade : 3A
APW : 128mm MBW : 19 mm
APP : 083mm MBP : -19 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

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program: ALC012 LIST OF BORINGS HEADERS 29/07/97 HART LP, SITE 423 page 1

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	SU76105540	PGR	W	02	038	075	2	1	135	26	108	5	2				DR	2	
1P	SU76405480	PGR	NE	01	023	066	3	3A	130	21	110	8	2				WE	3A	
2	SU76205540	PGR	W	02	034	044	3	2	126	17	103	1	2				WD	2	
2P	SU76405500	PGR	S	02	0		2	1	128	19	083	-19	3A				DR	3A	
3	SU76305540	PGR	N	02	040	090	1	1	133	24	096	6	2				DR	2	ALMOST 2
4	SU76405540	PGR	N	02	025	025	4	3A	099	-10	108	6	3A				WE	3A	I75 FLINT
5	SU76505540	PGR	N	01	035		2	1	147	38	112	10	1					1	BORDER 2
6	SU76605540	PGR	N	01	0	049	3	3A	136	27	111	9	2				WE	3A	
7	SU76205530	PGR	NW	02			1	1	064	-45	064	-38	3B				DR	3B	QGRAVEL
8	SU76305530	PGR	NE	01	075		1	1	117	8	086	-16	3A				DR	3A	POTS LIMIT
9	SU76405530	PGR	S	02	025	050	3	2	130	21	107	5	2				WD	2	
10	SU76505530	PGR	S	02	070		1	1	098	-11	080	-22	3A				DR	3A	Q 2 DR
11	SU76605530	PGR	E	01	090		1	1	132	23	100	-2	2				DR	2	
12	SU76505520	PGR	NE	02	040	095	1	1	114	5	091	-11	3A				DR	3A	Q 2 DR
13	SU76605520	PGR	E		030		1	1	101	-8	108	6	3A				DR	3A	I65 PROB2
14	SU76505510	PGR	E	01	040		1	1	163	54	123	21	1					1	
15	SU76605510	PGR	E	03	036		2	1	161	52	121	19	1					1	
16	SU76705510	PGR	E	02	027		2	1	144	35	114	12	1					1	
17	SU76235507	PGR			0		2	1	118	9	086	-16	3A				DR	3A	
18	SU76325505	PGR	SE	03			2	1	134	25	102	0	2				DR	2	
19	SU76405500	PGR	S	04	030		1	1	121	-10	092	2	3A				DR	3A	SEE 2P
20	SU76505502	PGR	SW	03			1	1	051	-58	051	-51	4				DR	4	I30 QDIST
21	SU76205500	PGR			060		1	1	107	-2	086	-16	3A				DR	3A	
22	SU76125497	PGR			070		1	1	130	21	088	-14	3A				DR	3A	
23	SU76405480	PGR	NE	02	0	075	2	2	099	-10	104	2	3A				WE	3A	SEE 1P
24	SU76505480	PGR	NE			058	3	3A	000	0	000	0					WE	3A	
25	SU76405470	PGR	NE	01	027	057	3	3A	106	-3	104	2	3A				WE	3A	Q2 WD
26	SU76335470	PGR	NE		029	047	4	3B	000	0	000	0					WE	3B	
27	SU76405460	PGR	NE		024	030	4	3B	089	-20	100	-2	3B				WE	3B	

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	10YR32 42						0	0	HR	5						
	30-38	msl	10YR52 00						0	0	HR	2		M				
	38-65	msl	10YR63 72	10YR58 00	C			Y	0	0	HR	2		M				LMS T/S?
	65-75	lms	10YR72 73	10YR58 00	C			Y	0	0	HR	2		G				
	75-95	c	25 Y72 00	75YR58 00	M			Y	0	0	HR	2		P		Y		SAND LENSES
	95-120	c	10YR71 00	75YR68 00	M			Y	0	0	HR	2		P		Y		PLASTIC
1P	0-23	mcl	10YR43 00						0	0	HR	2						WITH MS
	23-44	scl	25Y 54 00	10YR58 00	M			Y	0	0	HR	2	MDCSAB	FR M				POROUS
	44-66	c	05Y 63 00	10YR58 00	M			Y	0	0	HR	5	MDCSAB	FR M				WITH MS
	66-120	c	25Y 62 00	10YR58 00	C			Y	0	0	HR	2	WKCSAB	FM P	Y		Y	LOW POROSITY
2	0-34	fsl	10YR42 00						0	0	HR	10						
	34-44	scl	10YR53 00	10YR58 00	C			Y	0	0	HR	2		M				FRIABLE WITH MS
	44-120	c	25Y 62 00	10YR58 00	M			Y	0	0	HR	2		P		Y		PLASTIC WITH MS
2P	0-30	fsl	10YR31 00	10YR46 00	C			Y	0	0	HR	2						
	30-50	lms	25Y 62 00	10YR58 00	C			Y	0	0	HR	1	MDCSAB	FR G				SAND CONTENT VARIES
	50-74	ms	25Y 71 00	10YR58 00	C			Y	0	0		0	WVCSAB	FR G				POROUS
	74-120	scl	25Y 72 00	75YR58 00	M			Y	0	0		0	WKCSAB	FR M				INCLUDES CLAY LENSE
3	0-30	fsl	10YR42 00						0	0	HR	5						
	30-40	msl	10YR53 00						0	0	HR	5		M				
	40-65	lms	10YR53 72	10YR58 00	C			Y	0	0	HR	5		G				
	65-90	msl	10YR63 64	10YR58 00	C			Y	0	0		0		M				
	90-120	c	10YR71 00	75YR58 00	M			Y	0	0	HR	2		P		Y		PLASTIC
4	0-25	fsl	10YR42 00						0	0	HR	2						
	25-35	scl	10YR41 00	75YR46 00	C			Y	0	0	HR	2		M				
	35-48	hcl	10YR63 64	75YR58 00	C			Y	0	0	HR	2		P		Y		WITH MS
	48-75	c	10YR71 00	75YR68 00	M			Y	0	0		0		P		Y		IMP FLINTS
5	0-35	msl	10YR53 00	10YR58 00	F				0	0	HR	5						
	35-70	scl	25Y 53 00	10YR58 00	C			Y	0	0	HR	2		M				
	70-85	msl	25Y 63 00	10YR68 00	C			Y	0	0		0		M				
	85-100	lms	10YR63 00	75YR58 00	M			Y	0	0		0		G				
	100-120	scl	05Y 62 00	75YR58 00	M			Y	0	0		0		M				
6	0-35	mcl	10YR53 00	10YR58 00	C			Y	0	0	HR	2						NON CALC
	35-49	mcl	25Y 53 00	10YR58 00	C			Y	0	0	HR	2		M				
	49-100	c	05Y 72 00	75YR68 00	M			Y	0	0		0		P		Y		V FIRM
	100-120	scl	05Y 71 00	75YR58 00	C			Y	0	0		0		P		Y		FIRM
7	0-36	fsl	10YR53 00						0	0	HR	10						
	36-40	msl	10YR63 00						0	0	HR	10		M				IMP Q GRAVEL
8	0-34	msl	10YR53 00						0	0	HR	10						
	34-75	lms	25Y 63 64						0	0	HR	2		G				VERY FRIABLE
	75-120	lms	25Y 72 00	10YR58 00	C			Y	0	0	HR	2		G				FRIABLE

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	
9	0-25	fsl	10YR42 00						0	0	HR	2							
	25-30	msl	10YR41 00	10YR58 00	C			Y	0	0	HR	2		M					
	30-50	msl	10YR62 73	75YR58 00	M			Y	0	0	HR	2		M					
	50-120	c	10YR71 00	75YR68 00	M			Y	0	0		0		P			Y		PLASTIC SL SANDY
10	0-35	fsl	10YR32 00						0	0	HR	2							
	35-50	lms	25 Y64 00						0	0		0		G					
	50-70	ms	25 Y64 00						0	0		0		G					
	70-110	ms	25 Y64 74	10YR58 00	C			Y	0	0		0		G					
	110-120	lms	25 Y64 74	75YR58 00	C			Y	0	0		0		G					
11	0-30	fsl	10YR42 00						0	0	HR	5							BORDER LFS T/S
	30-50	msl	10YR53 00						0	0	HR	2		M					
	50-90	lms	25Y 64 00						0	0		0		G					
	90-108	scl	05Y 72 00	10YR58 00	C			Y	0	0		0		M					
	108-120	ms	05Y 81 00						0	0		0		G					
12	0-35	fsl	10YR32 00						0	0	HR	2							
	35-40	msl	10YR53 54						0	0		0		M					
	40-85	lms	10YR64 00	10YR58 00	C			Y	0	0	HR	2		G					
	85-95	ms	10YR64 00	10YR58 00	C			Y	0	0	HR	2		G					
	95-120	c	10YR71 00	75YR58 00	M			Y	0	0	HR	2		P			Y		PLASTIC
13	0-30	fsl	10YR41 00						0	0	HR	2							
	30-50	fsl	10YR62 72	75YR58 00	M			Y	0	0	HR	5		M					CLAY LENSES
	50-65	scl	25Y 61 62	75YR58 00	M			Y	0	0	HR	10		M					IMP GRAVELLY
14	0-40	fsl	10YR41 42						0	0		0							
	40-60	fsl	10YR63 00	10YR58 00	C			Y	0	0		0		M					
	60-70	scl	10YR63 00	10YR56 00	M			Y	0	0		0		M					FS + C LENSES
	70-120	scl	10YR63 00	75YR58 00	M			Y	0	0		0		M					FS LENSES
15	0-36	fsl	10YR41 42						0	0	HR	3							
	36-60	fsl	25Y 62 63	10YR46 58	M			Y	0	0		0		M					CLAY LENSES
	60-120	scl	25Y 61 71	75YR58 00	M			Y	0	0		0		M					S+C LENSES FRIABLE
16	0-27	fsl	10YR41 42						0	0		0							
	27-45	fsl	25Y 62 72	75YR58 00	M			Y	0	0		0		M					
	45-120	scl	25Y 61 71	75YR58 00	M			Y	0	0		0		M			Y		S+C LENSES
17	0-25	msl	10YR32 00	10YR58 00	C			Y	0	0	HR	5							
	25-40	msl	10YR42 53	10YR58 00	C			Y	0	0	HR	5		M					
	40-58	lms	25Y 63 00	10YR58 00	C			Y	0	0		0		G					
	58-70	ms	25Y 72 00	10YR58 00	C			Y	0	0		0		G					
	70-120	lms	25Y 72 00	10YR66 00	M			Y	0	0		0		G					
18	0-30	msl	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	30-45	msl	25Y 62 61	10YR58 00	C			Y	0	0		0		M					
	45-60	lms	25Y 72 00	10YR58 00	C			Y	0	0		0		G					
	60-90	msl	25Y 61 00	10YR58 00	C			Y	0	0		0		M					
	90-105	lms	25Y 61 00	10YR58 00	C			Y	0	0		0		G					
	105-120	ms	25Y 82 00						0	0		0		G					

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
19	0-30	fsl	10YR32 00	10YR46 00	F				0	0	HR	3						
	30-40	msl	10YR61 62	10YR56 00	C			Y	0	0		0		M				SAND VARIES SEE2P
	40-60	lms	10YR61 62	10YR56 00	C			Y	0	0		0		G				
	60-80	ms	10YR61 62	10YR56 00	M			Y	0	0		0		G				
	80-120	lms	25Y 62 00	10YR58 00	M			Y	0	0		0		G				CLAY LENSES
20	0-30	fsl	10YR41 42	10YR46 00	F				0	0	HR	5						IMP GRAVEL/DIST
21	0-32	lms	10YR32 00	10YR58 00	C				0	0	HR	2						Q ROOT MOTTS
	32-60	fs	25Y 61 00						0	0		0		G				
	60-70	ms	25Y 62 00	10YR58 00	C			Y	0	0		0		G				
	70-85	lms	25Y 72 00	10YR58 00	C			Y	0	0		0		G				
	85-120	ms	25Y 81 00	10YR66 00	C			Y	0	0	HR	2		G				
22	0-29	msl	10YR31 00						0	0	HR	2						
	29-50	lms	25Y 61 00						0	0		0		G				
	50-70	lms	10YR42 00						0	0		0		G				
	70-90	scl	25Y 62 72	10YR68 00	C			Y	0	0		0		M				
	90-105	msl	25Y 72 00	10YR68 00	M			Y	0	0		0		M				
	105-120	lms	25Y 72 00	10YR68 00	M			Y	0	0		0		G				
23	0-30	mcl	10YR53 00	10YR68 00	C			Y	0	0	HR	2						WITH MS
	30-75	c	05Y 52 00	10YR58 00	M			Y	0	0	HR	2		M				SPL FROM 66CM
	75-80	c	10YR61 00	10YR58 00	M			Y	0	0		0		P		Y		PLASTIC
24	0-32	mcl	10YR42 00	10YR58 00	C			Y	0	0	HR	2						SLIGHTLY SANDY
	32-58	scl	10YR63 00	10YR58 00	C			Y	0	0	HR	2		M				
	58-75	c	25 Y62 00	75YR68 00	M			Y	0	0	HR	2		P		Y		WITH MS
	75-90	c	10YR71 00	75YR68 00	M			Y	0	0	HR	2		P		Y		PLASTIC
25	0-27	mcl	10YR42 00	10YR46 00	F				0	0	HR	2						WITH MS
	27-47	scl	10YR72 63	10YR68 00	C			Y	0	0	HR	10		M				
	47-57	hcl	25Y 63 00	10YR58 00	M			Y	0	0	HR	2		P		Y		WITH MS FIRM
	57-90	c	05Y 63 00	10YR58 00	M			Y	0	0		0		P		Y		WITH MS PLASTIC
26	0-29	hcl	10YR33 43						0	0		0						
	29-45	c	25 Y64 00	75YR58 00	M			Y	0	0		0		P		Y		FE ENRICHED
	45-55	c	05 Y52 00	75YR68 00	M			Y	0	0		0		P		Y		SAND
	55-80	sc	05 Y52 00	75YR68 00	M			Y	0	0	HR	2		P		Y		C+S LENSES
27	0-24	mcl	10YR42 43	10YR46 00	F				0	0	HR	2						WITH MS
	24-30	hcl	25Y 63 00	10YR58 00	M			Y	0	0	HR	2		P		Y		WITH MS FIRM
	30-70	c	10YR71 00	10YR58 00	M			Y	0	0	HR	2		P		Y		PLASTIC

1506\107\95.

SOIL PIT DESCRIPTION

Site Name : HART LP HARTLEY WINTNEY Pit Number : 1P

Grid Reference: SU76305550 Average Annual Rainfall : 692 mm
Accumulated Temperature : 1444 degree days
Field Capacity Level : 146 days
Land Use : Wheat
Slope and Aspect : 1 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	MCL	10YR41 42	0	3	HR					
35- 52	SCL	25Y 53 63	0	10	HR	M	MDCAB	FR	P	
52- 70	C	05Y 61 00	0	5	HR	M	MDCPR	FM	P	

Wetness Grade : 3B Wetness Class : IV
Gleying : 35 cm
SPL : 35 cm

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

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

1506/107/95

SOIL PIT DESCRIPTION

Site Name : HART LP HARTLEY WINTNEY Pit Number : 2P

Grid Reference: SU76305570
Average Annual Rainfall : 692 mm
Accumulated Temperature : 1444 degree days
Field Capacity Level : 146 days
Land Use : Wheat
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MCL	10YR42 00	0	3	HR					
29- 41	SCL	10YR63 00	0	15	HR		MDCSAB	FR	M	
41- 67	SCL	25Y 63 00	0	40	HR	C		FR	M	
67-120	SCL	25Y 62 00	0	0		M	WKCSAB	FR	M	

Wetness Grade : 2
Wetness Class : II
Gleying : 41 cm
SPL : 67 cm

Drought Grade : 2
APW : 138mm MBW : 30 mm
APP : 95 mm MBP : -6 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

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program: ALC012 LIST OF BORINGS HEADERS 16/06/95 HART LP HARTLEY WINTNEY page 1

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	--WETNESS-- GLEY	SPL	CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1997 1995																			
1	SU76505610	BNS					1	1	76	-32	59	-42	3B				DR	3B	
1P	SU76305550	WHT	N	1	35	35	4	3B		0		0					WE	3B	PIT 70
2	SU76605610	BEN	W	2			1	1	101	-7	70	-31	3B				DR	3B	
2P	SU76305570	WHT			41	67	2	2	138	30	95	-6	2				WD	2	PIT 85 AUG 120
3	SU76505600	BNS					1	1	126	18	106	5	2				DR	2	
3P	SU76505600	BNS			97		1	1	123	15	102	1	2				DR	2	PIT110 AUG 120
4	SU76605600	BEN	NW	2	45		1	1	78	-30	78	-23	3B				DR	2	IMP 50 SEE 1P
5	SU76705600	BEN	N	2	95	95	1	1	145	37	106	5	2				DR	2	
6	SU76405590	PGR			75		1	1	145	37	105	4	2				DR	2	
7	SU76505590	PGR	W	1	50	50	3	3A	121	13	111	10	2				WE	3A	
8	SU76605590	BEN	N	1	55	55	2	1	137	29	106	5	2				DR	2	
9	SU76705590	BEN	N	2	0	40	3	2	133	25	103	2	2				WD	2	
10	SU76405580	PGR			30	30	4	3B		0		0					WE	3A	
11	SU76505580	PGR	W	1	60	60	2	1	133	25	105	4	2				DR	2	
12	SU76605580	LEY	S	3	0	38	4	3B		0		0					WE	3B	
13	SU76205570	WHT			50	50	3	3A	130	22	104	3	2				WE	3A	
14	SU76305570	WHT					1	1	76	-32	76	-25	3B				WD	2	IMP 50 SEE 1P
15	SU76405570	WHT			45	45	3	3A	137	29	107	6	2				WE	3A	
16	SU76505570	PGR			65	100	1	1	146	38	109	8	2				DR	2	
17	SU76605570	LEY	S	3	45	45	3	3A	96	-12	108	7	3A				WE	3A	
18	SU76205560	WHT	N	1	28	28	4	3B		0		0					WE	3B	
19	SU76305560	WHT			45	45	3	3A	119	11	107	6	2				WE	3A	
20	SU76405560	WHT			30	30	4	3B		0		0					WE	3B	
21	SU76205550	WHT	N	1	28	28	4	3B		0		0					WE	3B	
22	SU76305550	WHT	N	1	30	30	4	3B		0		0					WE	3B	
23	SU76105540	PGR	W	4	35	35	4	3B		0		0					WE	3B	
24	SU76205540	PGR	SE	3	75	75	2	1	133	25	100	-1	2				DR	2	
25	SU76305540	PGR	SE	3			1	1	58	-50	58	-43	3B				DR	2	IMP 40 SEE 1P
26	SU76405540	PGR	N	1	0	45	3	3A		0		0					WE	3A	
27	SU76405530	PGR	SE	4	0	35	4	3B		0		0					WE	3B	
28	SU76775605	BEN	W	4	48	48	3	2	133	25	103	2	2				WD	2	
29	SU76275578	WHT			70	70	2	2	152	44	112	11	1				WE	2	
30	SU76135548	WHT			30	30	4	3B		0		0					WE	3B	
31	SU76295533	PGR			48	48	3	2	124	16	96	-5	2				DR	2	

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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	lms	10YR42 00						0	0	HR	3						
	30-45	lms	10YR42 00						0	0		0		G				
	45-60	ms	10YR56 00						0	0		0		M				
	60-120	ms	10YR68 00						0	0		0		M				
1P	0-35	mcl	10YR41 42						0	0	HR	3						
	35-52	scl	25Y 53 63	10YR58 00	M			Y	0	0	HR	10	MDCAB	FR P	Y		Y	
	52-70	c	05Y 61 00	10YR58 00	M		25Y 61 00	Y	0	0	HR	5	MDCPR	FM P	Y		Y	
2	0-38	lms	10YR43 00						0	0	HR	2						
	38-58	lms	10YR44 00						0	0		0		G				
	58-100	lms	10YR56 00						0	0		0		G				
	100-120	lms	10YR66 76						0	0		0		G				
2P	0-29	mcl	10YR42 00						0	0	HR	3						
	29-41	scl	10YR63 00						0	0	HR	15	MDCSAB	FR M				
	41-67	scl	25Y 63 00	10YR58 00	C			Y	0	0	HR	40		FR M				
	67-120	scl	25Y 62 00	75YR68 00	M		25Y 63 00	Y	0	0		0	WKCSAB	FR M	Y		Y	
3	0-25	msl	10YR42 00						0	0	HR	2						
	25-55	msl	10YR54 56						0	0	HR	5		M				
	55-70	scl	10YR56 00						0	0	HR	5		M				
	70-100	lms	10YR56 00						0	0	HR	5		G				
	100-120	ms	10YR68 00						0	0		0		M				
3P	0-28	msl	10YR42 41						0	0	HR	3						
	28-55	msl	10YR54 00						0	0	HR	10	MDCSAB	FR M				
	55-67	scl	10YR54 56						0	0	HR	15	WKCSAB	VF M				
	67-85	scl	10YR54 56						0	0	HR	25		VF M				
	85-97	lms	10YR66 00						0	0		0	MDCAB	VF G				
	97-120	ms	25Y 62 00	10YR68 00	M			Y	0	0		0	WKCAB	VF M				
4	0-30	msl	10YR43 00						0	0	HR	2						
	30-45	msl	10YR43 00						0	0	HR	5		M				
	45-50	msl	10YR53 00	75YR58 00	C		00MN00 00	Y	0	0	HR	10		M				IMP FLINTS 50
5	0-38	msl	10YR42 00	10YR58 00	F				1	0	HR	4						
	38-65	msl	10YR53 00						0	0	HR	8		M				
	65-78	msl	10YR53 00						0	0	HR	15		M				
	78-95	msl	25Y 66 00						0	0		0		M				
	95-105	scl	25Y 63 71	75YR58 00	M			Y	0	0		0		P		Y		
	105-120	sc	05Y 63 71	75YR58 00	M			Y	0	0		0		P		Y		
6	0-25	msl	10YR42 00						0	0	HR	3						
	25-60	msl	10YR43 53						0	0	HR	5		M				
	60-75	msl	10YR53 00						0	0	HR	10		M				
	75-120	msl	25Y 63 00	10YR58 00	M			Y	0	0	HR	15		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	
7	0-28	mcl	10YR42 00	10YR46 00	F				0	0	HR	2							
	28-50	mcl	10YR52 53	10YR56 00	F				0	0		0		M					
	50-65	scl	10YR53 00	10YR56 00	C			Y	0	0		0		P			Y		
	65-100	c	25Y 63 00	10YR68 00	M			Y	0	0		0		P			Y		
8	0-30	msl	10YR43 00						0	0	HR	2							
	30-55	msl	10YR54 00						0	0	HR	2		M					
	55-68	scl	25Y 63 00	10YR68 00	C			Y	0	0		0		P			Y		
	68-120	sc	05Y 62 00	10YR68 00	M			Y	0	0		0		P			Y		
9	0-30	msl	10YR52 00	10YR58 00	C			Y	0	0	HR	2							
	30-40	msl	10YR42 00	10YR58 00	C			Y	0	0	HR	5		M					
	40-50	scl	25Y 63 71	75YR58 00	M			Y	0	0		0		P			Y		
	50-120	sc	05Y 63 71	75YR58 00	M			Y	0	0		0		P			Y		
10	0-30	mcl	10YR42 00						0	0	HR	3							
	30-55	scl	10YR43 53	10YR56 00	C			Y	0	0		0		P			Y		
	55-75	c	25Y 53 62	10YR58 00	M			Y	0	0		0		P			Y		
	75-120	c	05Y 61 00	25YR58 00	M		10YR58 00	Y	0	0		0		P			Y		
11	0-28	msl	10YR43 00	10YR46 00	F				0	0	HR	2							
	28-60	msl	10YR43 00	10YR46 56	F				0	0	HR	5		M					
	60-100	c	25Y 63 00	10YR68 00	M			Y	0	0		0		P			Y		
	100-120	scl	25Y 63 00	10YR68 00	M			Y	0	0		0		P			Y		
12	0-30	mcl	10YR52 53	75YR58 00	C			Y	0	0	HR	2							
	30-38	mcl	10YR53 00	75YR58 00	C			Y	0	0	HR	5		M					
	38-70	c	25Y 63 71	75YR68 46	M			Y	0	0		0		P			Y		
13	0-30	mcl	10YR42 00						0	0	HR	3							
	30-50	scl	10YR54 56						0	0	HR	10		M					
	50-75	scl	25Y 63 00	10YR58 00	C			Y	0	0	HR	5		P			Y		
	75-120	c	25Y 72 00	10YR58 00	M			Y	0	0		0		P			Y		
14	0-28	mcl	10YR42 00						0	0	HR	3							
	28-45	scl	10YR64 66						0	0	HR	15		M					
	45-50	scl	10YR64 66						0	0	HR	40		M					IMP FLINTS 50
15	0-25	mcl	10YR42 00						0	0	HR	3							
	25-45	mcl	10YR43 53	10YR66 00	F			Y	0	0		0		M					
	45-75	scl	25Y 63 00	10YR68 00	C			Y	0	0	HR	5		P			Y		
	75-120	scl	25Y 73 00	10YR68 58	M			Y	0	0		0		P			Y		
16	0-25	msl	10YR42 00						0	0	HR	3							
	25-65	scl	10YR43 53	10YR46 00	F		00MN00 00		0	0		0		M					
	65-100	msl	10YR73 00	10YR68 00	M			Y	0	0		0		M					
	100-120	c	25Y 73 00	10YR68 00	M			Y	0	0		0		P			Y		

	SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	STONES GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1997	1995																		
	17	0-25	mcl	10YR52 53	75YR58	00	C			0	0	HR	2						
		25-45	mcl	10YR53 00	75YR58	00	F			0	0	HR	2		M				
		45-70	c	25Y 63 71	10YR66	00	M		Y	0	0		0		P			Y	
	18	0-28	mcl	10YR42 00						0	0	HR	3						
		28-75	c	25Y 63 00	10YR58	00	M		Y	0	0		0		P			Y	
		75-100	c	05Y 63 00	10YR58	00	M		Y	0	0		0		P			Y	
	19	0-25	mcl	10YR42 00						0	0	HR	3						
		25-45	mcl	10YR43 00						0	0		0		M				
		45-80	scl	25Y 63 00	10YR58	00	M		Y	0	0	HR	3		P			Y	
		80-100	c	25Y 62 00	10YR58	00	M		Y	0	0		0		P			Y	
	20	0-30	mcl	10YR42 00						0	0	HR	3						
		30-55	scl	10YR63 00	10YR58	00	C		Y	0	0	HR	10		P			Y	
		55-100	c	25Y 63 00	10YR58	68	M		Y	0	0		0		P			Y	
	21	0-28	mcl	10YR42 00						0	0	HR	3						
		28-35	scl	25Y 62 00	10YR58	00	M		Y	0	0	HR	10		P			Y	
		35-80	c	25Y 61 00	10YR58	00	M		Y	0	0		0		P			Y	
	22	0-30	mcl	10YR42 00						0	0	HR	3						
		30-50	scl	25Y 61 00	10YR68	00	M		Y	0	0	HR	10		P			Y	
		50-80	c	25Y 62 00	10YR58	00	M		Y	0	0		0		P			Y	
1	23	0-35	mcl	10YR52 00						2	0	HR	5						
		35-40	scl	10YR53 00	10YR58	00	C		Y	0	0	HR	2		P			Y	
		40-70	sc	25Y 63 71	75YR58	00	M		Y	0	0		0		P			Y	
2	24	0-30	msl	10YR52 00						2	0	HR	8						
		30-45	msl	10RY43 00						0	0	HR	5		M				
		45-58	msl	10YR53 00						0	0		0		M				
		58-75	lms	10YR56 00						0	0		0		G				
		75-95	scl	25Y 63 00	10YR58	00	C		Y	0	0		0		P			Y	
		95-120	sc	25Y 63 00	75YR58	00	M		Y	0	0		0		P			Y	
3	25	0-30	msl	10YR52 00						2	0	HR	10						
		30-40	msl	10YR53 00						0	0	HR	20		M				IMP FLINTS 40
4	26	0-35	mcl	10YR52 00	10YR58	00	C		Y	0	0	HR	2						
		35-45	mcl	10YR62 00	10YR58	00	C		Y	0	0		0		M				
		45-70	sc	25Y 63 71	75YR58	00	M		Y	0	0		0		P			Y	
9	27	0-35	mcl	10YR52 00	10YR58	00	C		Y	0	0	HR	2						
		35-55	scl	10YR63 00	10YR58	00	C		Y	0	0		0		P			Y	
		55-75	sc	25Y 63 71	75YR58	00	M		Y	0	0		0		P			Y	
	28	0-30	msl	10YR43 00						1	0	HR	4						
		30-48	scl	10YR53 56						0	0	HR	8		M				
		48-120	sc	05Y 63 71	75YR58	00	M		Y	0	0		0		P			Y	

1506 1107 195.

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
1997 1995																		
29	0-30	mcl	10YR42 00						0	0	HR	3						
	30-70	scl	10YR44 54						0	0		0		M				
	70-120	scl	10YR63 00	10YR58 00	C			Y	0	0		0		M			Y	
30	0-30	mcl	10YR42 00						0	0	HR	3						
	30-50	scl	10YR62 00	10YR58 00	M			Y	0	0	HR	10		P			Y	
	50-80	c	25Y 61 62	10YR58 00	M			Y	0	0		0		P			Y	
31	0-30	msl	10YR53 00						0	0	HR	8						
	30-48	msl	10YR54 00	10YR58 00	F				0	0	HR	12		M				
	48-65	scl	10YR54 00	05YR46 00	M			Y	0	0	HR	15		P			Y	
	65-120	sc	05Y 63 71	05Y 63 71	M			Y	0	0	HR	8		P			Y	