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WEST OXFORDSHIRE DISTRICT LOCAL PLAN
Land South of Long Hanborough, Oxfordshire

Agricultural Land Classification
ALC Map and Report

October 1998

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

WEST OXFORDSHIRE DISTRICT LOCAL PLAN
LAND SOUTH OF LONG HANBOROUGH, OXFORDSHIRE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 17.4 hectares of land to the south and west of Long Hanborough in Oxfordshire. The survey was carried out during October 1998.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). It was carried out in connection with MAFF's statutory input to the West Oxfordshire Local Plan. This survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Eastern Region of 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 agricultural land use on the site comprised a combination of grassland, in part being grazed by cattle, and winter wheat. The area mapped as 'Agricultural Land Not Surveyed' was occupied by free range sows with their piglets. It was considered unsafe to enter this area. The areas mapped as 'Other Land' comprise an un-metalled track and a storage area for farm machinery and straw.

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	2.2	13.9	12.6
3a	4.0	25.3	23.0
3b	9.4	59.5	54.0
4	0.2	1.3	1.2
Agricultural land not surveyed	1.3	-	7.5
Other land	0.3	-	1.7
Total surveyed area	15.8	100	90.8
Total site area	17.4	-	100

[1] FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. In total, 16 borings and 3 soil pits were described.

8. The agricultural land on this site has been classified in the range Grade 2 (very good quality) to Grade 4 (poor quality) with substantial areas of Subgrade 3a (good quality) and Subgrade 3b (moderate quality) land. The limitations to land quality include soil droughtiness, soil wetness and gradient.

9. The Grade 2 quality land is located towards the south of the site. The soil here comprises clay loam topsoils overlying clay loam or clay subsoils. The soils were stoneless to moderately stony. In the local climate this combination of soil properties slightly restricts the amount of water available to plants to the extent that Grade 2 is appropriate on the basis of soil droughtiness. This limitation is likely to adversely affect crop yields and consistency, although a wide range of crops may still be successfully grown in this area.

10. The land mapped as Subgrade 3a is located in the north-west of the site on slightly higher land. The principal limitation here is soil wetness. The soils comprise clay loam topsoils and upper subsoils overlying clay lower subsoils. The lower subsoils were found to inhibit drainage to the extent that, within the local climate, Subgrade 3a is appropriate. Soil wetness has the effect of reducing the versatility of the land in terms of access by machinery (eg for cultivations or harvesting) and grazing by livestock if damage to the soil is to be avoided. Towards the south of this area where the land lies at a lower level, this wetness restriction is more severe and, as such, Subgrade 3b is mapped.

11. The areas shown as Subgrade 3b encompass the majority of the site. In the past much of this area was used to extract sand and gravel and the land has been restored to a lower level. The restoration works have left much of this area with a restricted soil resource comprising a moderately stony clay loam topsoil passing to similar or more stony shallow subsoils overlying either solid limestone or impenetrable, compacted clay with a high brashy limestone content. In the local climate Subgrade 3b is applied on the basis of soil droughtiness, as the limited soil resource restricts the amount of water available to plants. This is likely to significantly affect crop yields and growth, especially in drier periods. Some of the land towards the margin of the area mapped as Subgrade 3b is limited by gradient . This is sufficient to restrict the safe and efficient use of certain types of farm machinery thus restricting potential cropping in this area.

12. The small area mapped as Grade 4 towards the centre of the site is limited by soil wetness. The presence of vegetation that favours wet conditions is suggestive of semi-permanent waterlogging and given the low-lying nature of this area, close to a stream, it is not likely to be easily drainable.

FACTORS INFLUENCING ALC GRADE

Climate

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

14. 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	SP 416 135	SP 417 136	SP 414 136
Altitude	m, AOD	90	95	100
Accumulated Temperature	day°C (Jan-June)	1408	1404	1398
Average Annual Rainfall	mm	695	697	702
Field Capacity Days	days	151	152	153
Moisture Deficit, Wheat	mm	101	100	99
Moisture Deficit, Potatoes	mm	92	91	90
Overall climatic grade	N/A	Grade 1	Grade 1	Grade 1

15. 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.

16. 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.

17. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. Local climatic factors, such as exposure and frost risk do not affect land quality at this location. The site is climatically Grade 1. However, climatic factors do interact with soil properties to influence soil wetness and soil droughtiness. At this locality the climate is average in regional terms.

Site

18. The site lies at altitudes in the range 90-100m AOD. The highest land occurs in the north-west of the site. It then falls through slight and moderate slopes to 90m at the centre of the site where a stream is located. The land to the east of the stream at approximately 95m has, in part, been affected by past sand and gravel extraction. This land has been restored but at a lower level then the surrounding residential areas. Some of the slopes between the land close to the stream and the restored land are of sufficient gradient to adversely affect land quality to the extent that Subgrade 3b has been mapped in these areas. Overall the restored land is flat, but with some small hillocks. These are not considered to constitute a separate microrelief restriction.

Geology and soils

19. The most detailed published geological information for the site (BGS, 1982) shows the majority of the land to be underlain by a drift deposit known as the fourth Hanborough terrace deposits-river gravels. Some of this land is marked as having been subject to mineral extraction as has been the case here. The remainder of the site, to the west, is underlain by a combination of Kellaways Sands and Clays.

20. According to the most detailed published information available for this area (SSEW, 1983) the soils present on this site are in the Sutton 1 association. These are described as, 'well drained fine and coarse loamy soils locally calcareous and in places shallow over limestone gravel' (SSEW, 1983). The soils encountered across the site were not of this description, being loamy and clayey overall. This is most likely because the land to the east of the site has been restored after extraction and to the west of the site has a solid rather than drift origin.

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 on 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. Very good quality land has been mapped on undisturbed lower lying land in the south of the site. The soils in this area are typified by soil pit 3 (see Appendix II). They typically comprise a medium clay loam topsoil which overlies permeable heavy clay loam and clay subsoils. The profiles were virtually stone-free and well drained (Wetness Class I). In the local climate this combination of soil properties leads to Grade 2 being applied on the basis of soil droughtiness as the clayey subsoils do not readily release water for plant growth. Soil droughtiness at this level is likely to slightly restrict crop yields and the consistency of those yields is likely to be variable, especially in drier years.

Subgrade 3a

24. Land of good quality has been mapped in the north-west of the site. The principal limitation to land quality in this area is soil wetness. The soils are characterised by soil pit 1 (see Appendix II). They typically comprise a medium clay loam topsoil which overlies heavy clay loam and clay subsoils. The clay subsoils are slowly permeable and, as such, inhibit drainage to the extent that Wetness Class III has been applied in this area. In the local climate, the drainage limitation in combination with the moderate workability of the topsoils present lead to Subgrade 3a being appropriate on the basis of soil wetness. This degree of soil wetness may adversely affect crop growth and development, as well as limiting the flexibility of the land due to a reduction in the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock

Subgrade 3b

25. The majority of the site has been classified as being of moderate quality. Land quality is restricted by soil droughtiness or gradient limitations with soil wetness as an occasional factor. The first and second pit observations (1P and 2P, Appendix II) are typical of the majority of the observations in this area.

26. Most of the land shown as Subgrade 3b has previously been disturbed by sand and gravel extraction. It has since been restored to a lower level than much of the surrounding land. The soils comprise calcareous medium and heavy clay loam topsoils overlying generally shallow heavy clay loam and clay subsoils. Stone content is slight overall (up to 10% limestone by

volume) in the topsoil rising to 55% in the clayey subsoils prior to becoming impenetrable over either hard solid flaggy limestone or a compacted clayey weathered limestone gravel. In the pit observation (2P) roots were not observed to penetrate beyond the upper subsoil (34cm depth). This combination of soil properties results in water availability to plants being restricted to the extent that, in the local climate Subgrade 3b is appropriate on the basis of soil droughtiness. This restriction is likely to adversely affect crop yields and consistency in this area to a significant degree.

27. Towards the margins of the restored land some significant gradients were observed during the survey. These were measured as being in the range 7-11°. This is sufficient to significantly restrict the range of agricultural machinery able to operate safely and efficiently in these areas to the extent that Subgrade 3b is appropriate here.

28. To the south of the area mapped as Subgrade 3a in the west of the site, an area of Subgrade 3b land is shown which is principally limited by soil wetness. The soil in this area comprises a medium clay loam topsoil which lies directly over a slowly permeable clay subsoil as typified by soil pit 1 further north. The degree of drainage impedance caused by the clay subsoil causes this area to be placed in Wetness Class IV and subsequently Subgrade 3b is appropriate with the topsoil present. The restrictions caused by soil wetness are described in paragraph 24 above. In this area, these restrictions are more severe, ie there are fewer days when cultivations and/or grazing are possible.

Grade 4

29. Poor quality (Grade 4) land is confined to a small area of the site towards the centre. This area is characterised by hydrophilic vegetation such as *Juncus sp.* The saturated ground conditions in this area at the time of survey also indicated that this area spends large proportions of the year in a waterlogged condition. The land lies only very slightly above the stream passing through this part of the site and as such it would be very difficult to effectively drain this area, therefore, it is felt that this land cannot be classified any better than Grade 4.

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SOURCES OF REFERENCE

British Geological Survey (1982) *Sheet No.* 236 *Witney.*
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 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	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

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	**ST:**	Topsoil Stoniness
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
EX:	Exposure				

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	FSST:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	CH:	chalk
MSST:	soft, medium grained sandstone	GS:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock	GH:	gravel with non-porous (hard) stones

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

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

Degree of development	WK:	weakly developed	MD:	moderately developed
	ST:	strongly developed		
Ped size	F:	fine	M:	medium
	C:	coarse		
Ped shape	S:	single grain	M:	massive
	GR:	granular	AB:	angular blocky
	SAB:	sub-angular blocky	PR:	prismatic
	PL:	platy		

9. **CONSIST**: Soil consistence is described using the following notation:

L: loose	FM: firm	EH: extremely hard
VF: very friable	VM: very firm	
FR: friable	EM: extremely firm	

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

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

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

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

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

15. Other notations:

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

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SP41801380	PGR					1	1	67	-33	67	-24	3B			Y	DR	3B	IMP 50 LSTONE
2	SP41501370	CER	SE	4			1	1	100	0	99	8	3A				DR	3A	IMP 80 FLINT
3	SP41701370	PGR					1	1	49	-51	49	-42	4			Y	DR	3B	IMP 33 SLST
4	SP41801370	PGR					1	2	53	-47	53	-38	3B			Y	DR	3B	IMP38 2PNEARBY
5	SP41501360	CER	S	2	25	45	3	3A	106	6	97	6	2				WE	3A	1P NEARBY
6	SP41601360	CER	E	5	65		1	1	151	51	113	22	1					1	
7	SP41701360	PGR					1	1	50	-50	50	-41	3B			Y	DR	3B	IMP 35 LSTONE
8	SP41801360	PGR					1	1	78	-22	87	-4	3B			Y	DR	3B	IMP 70 LSTONE
9	SP41901360	PGR					1	1	99	-1	87	-4	3A			Y	DR	3A	IMP 100 LSTONE
10	SP42001360	PGR					1	1	37	-63	37	-54	4			Y	DR	3B	IMP 25 LSTONE
11	SP41601350	CER	S	2	35	35	4	3B		0		0					WE	3B	SEE 1P
12	SP41801350	PGR			65	100	2	2	129	29	94	3	2			Y	WD	2	SEE 3P
13	SP41921348	STB					1	1	111	11	110	19	2			Y	DR	2	IMP 85 LSTONE
14	SP41781343	STB	S	2	55	55	2	2	120	20	96	5	2				WD	2	3P LOCATION
15	SP41891337	STB					1	1	110	10	81	-10	2				DR	2	SEE 3P
16	SP41411365	CER			30	45	3	3A	126	26	103	12	2				WE	3A	SEE 1P
1P	SP41541359	CER	S	2	22	45	3	3A	129	29	106	15	2				WE	3A	PIT 80 AUG 120
2P	SP41801370	PGR					1	1	65	-35	65	-26	3B			Y	DR	3B	PIT 50 RTS 34
3P	SP41781343	PGR			105	105	1	1	138	38	112	21	1					1	PIT 80 AUG 120

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	0-20	MCL	10YR44						2	0	HR	15						Y	HR = HARD LSTONE
	20-48	HCL	10YR46						0	0	HR	25		M				Y	
	48-50	HCL	10YR46						0	0	HR	50		M				Y	IMP 50 LSTONE
2	0-28	MCL	10YR43						3	0	HR	15							
	28-45	SCL	10YR44						0	0	HR	15		M					
	45-70	MSL	10YR46						0	0	HR	10		M					
	70-80	SCL	10YR46						0	0	HR	20		M					IMP 80 FLINT
3	0-33	MCL	10YR33 43						1	0	HR	20						Y	IMP 33 SLST
4	0-20	HCL	10YR44						2	0	HR	15						Y	
	20-38	HCL	10YR46						0	0	HR	25		M				Y	IMP 38 SLST
5	0-25	MCL	10YR42						2	0	HR	15							PIT 1 NEARBY
	25-45	HCL	10YR53	10YR66	C	F	FEW MN	Y	0	0	HR	20		M				Y	FRIABLE
	45-65	C	10YR53	10YR68	C	D		Y	0	0		0		P		Y			PLASTIC
	65-100	C	25Y 62	10YR68	M	D		Y	0	0		0		P		Y			PLASTIC
6	0-32	MCL	10YR43						0	0	HR	10							
	32-65	HCL	10YR54						0	0		0		M					
	65-120	HCL	75YR64	75YR56	C	D		Y	0	0		0		M					
7	0-30	MCL	10YR44						2	0	HR	20						Y	
	30-35	MCL	10YR46						0	0	HR	25		M				Y	IMP 35 LSTONE
8	0-20	MCL	10YR53						4	0	HR	20						Y	
	20-70	MCL	75YR54						0	0	HR	30		M				Y	IMP 70 LSTONE
9	0-20	MCL	10YR53						4	0	HR	20						Y	
	20-75	MCL	75YR43						0	0	HR	30		M				Y	
	75-95	MCL	75YR44						0	0	HR	30		M				Y	
	95-100	MCL	10YR52						0	0	HR	50		M				Y	IMP 100 LSTONE
10	0-25	SCL	10YR53						4	1	HR	15						Y	IMP 25 LSTONE
11	0-35	MCL	10YR42						0	0	HR	6							
	35-70	C	25Y 53	10YR68	M	D		Y	0	0		0		P		Y			SEE 1P
12	0-30	MCL	10YR44						2	0	HR	20						Y	
	30-65	MCL	10YR46						0	0	HR	25		M				Y	
	65-100	SCL	25Y 61	10YR68	M	D		Y	0	0		0		M				Y	(H) SCL
	100-120	C	25Y 61	10YR68	C	D		Y	0	0		0		P		Y		Y	
13	0-22	MCL	10YR43						0	0	HR	15						Y	TOP OF SLOPE
	22-40	MCL	75YR43						0	0	HR	15		M				Y	
	40-85	MZCL	10YR64						0	0		0		M				Y	IMP 85 LSTONE

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
14	0-30	MCL	10YR43						2	0	HR	15						Y	3P LOCATION
	30-55	HCL	10YR44						0	0	HR	25		M				Y	
	55-120	C	25Y 53	10YR58	C	F	FEW MN	Y	0	0		0		M				Y	
15	0-25	MCL	10YR42						0	0	HR	10						Y	
	25-70	HCL	10YR54						0	0	HR	5		M				Y	
	70-120	C	10YR64						0	0		0		M				Y	NOT SPL SEE 3P
16	0-30	MCL	10YR42						1	0	HR	10							
	30-45	HCL	10YR64	10YR58	C	D	FEW MN	Y	0	0	HR	5		M					
	45-120	C	25Y 61	10YR68	M	D		Y	0	0	HR	3		P		Y			
1P	0-22	MCL	10YR42						0	0	HR	6						Y	PIT NR BOR 5
	22-45	HCL	25Y 52	10YR56	C	D		Y	0	0	HR	2	MDCAB	FR	M	N			
	45-55	C	10YR53	10YR68	M	D		Y	0	0		0	MDCAB	FM	P	Y	Y		
	55-120	C	25Y 61	10YR58	M	D		Y	0	0		0	WKVCAB	FM	P	Y	Y		PIT 80 AUG 120
2P	0-14	MCL	10YR43						0	0	HR	5						Y	PIT NR BORING 4
	14-34	HCL	75YR46						0	0	HR	23	MDCSAB	FM	M			Y	ROOTS VIS.TO 34
	34-50	C	25Y 54						12	3	HR	27		VM	P			Y	PIT IMP 50 LSTONE
3P	0-30	MCL	10YR32						1	0	HR	5						Y	PIT AT BORING 14
	30-50	MCL	10YR43						0	0	HR	10	MDCSAB	FR	M			Y	
	50-64	HCL	10YR43 44						0	0		0	MDCSAB	FR	M			Y	
	64-105	C	10YR52	10YR56	F	D			0	0		0	MDCAB	FR	M			Y	GOOD POROSITY
	105-120	C	10YR51	10YR68	M	D		Y	0	0		0		P		Y	Y		PIT 80 AUG 120