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HART DISTRICT REPLACEMENT LOCAL PLAN
Land East of Bartley Wood, Hook

Agricultural Land Classification
ALC Map and Report

November 1997

Resource Planning Team
Eastern Region
FRCA Reading

RPT Job Number:1506/145/97
MAFFReference:EL15/01383B

AGRICULTURAL LAND CLASSIFICATION REPORT

HART DISTRICT REPLACEMENT LOCAL PLAN
LAND EAST OF BARTLEY WOOD, HOOK

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 17.7 hectares of land to the south and east of Holt Farm, southeast of Hook in Hampshire. The survey was carried out during November 1997.

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), in connection with its statutory input to the Hart District Replacement 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 the land use on the site was permanent grazing. The areas mapped as 'Other land' include residential dwellings, agricultural buildings and a trackway.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	5.4	31.2	30.5
3b	11.9	68.8	67.2
Other land	0.4	N/A	2.3
Total surveyed area	17.3	100	97.7
Total site area	17.7	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. A total of 20 borings and 2 soil pits were described.

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

8. This site ranges from Subgrade 3a (good quality) to Subgrade 3b (moderate quality) agricultural land. The better quality land is found on the higher land towards the railway line. Soils typically comprise fine loamy topsoils, overlying similar and coarse loamy upper subsoils which pass to clayey lower subsoils. These clay subsoils impede drainage causing a slight soil wetness limitation. Elsewhere, across the lower lying land, topsoils directly overlie clay subsoils causing drainage to be significantly impeded. The depth to this clay horizon, in combination with the local climate and loamy topsoils, determines the degree of restriction on the flexibility of cropping, stocking and cultivations and therefore the ALC grade.

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 739 539	SU 737 539
Altitude	m, AOD	70	75
Accumulated Temperature	day°C (Jan-June)	1451	1445
Average Annual Rainfall	mm	703	708
Field Capacity Days	days	150	151
Moisture Deficit, Wheat	mm	109	108
Moisture Deficit, Potatoes	mm	102	101
Overall climatic grade	N/A	Grade 1	Grade 1

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. 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 relatively warm, therefore the likelihood of soil droughtiness problems may be enhanced. The data in Table 2 shows that there is an important field capacity day (FCD)

boundary across the site (from 150 FCD to 151 FCD). Land in the northwest of the site falls within a slightly wetter climatic regime than the remainder of the site. In theory, similar soil profiles may have a different soil wetness limitation according to the FCD range which is applicable. In practice, given the nature of the soils on the site, this was not found to be the case.

Site

14. The site lies at altitudes in the range 70-75m AOD. The higher land occurs to the east of Holt Farm, towards the railway line. The land slopes gently, by 1-2 degrees, in a southeasterly direction to become flat towards the south and eastern boundaries.

Geology and soils

15. The most detailed published geological information for the site (BGS, 1981) shows the whole site to be underlain by London Clay. An area of low level terrace deposits (valley gravel) is mapped to the east of the site.

16. The most detailed published soils information covering the area (SSEW, 1983) shows it to mainly comprise soils of the Wickham 4 association. These soils are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils, often with brown subsoils' (SSEW, 1983). Soils consistent with this description were observed across the site, with fine and coarse loamy soils overlying clay in the subsoil at variable depth. An area of Frome soil association may also be found along the far eastern edge. These soils are described as 'shallow calcareous and non-calcareous loamy soils over flint gravel affected by groundwater. Small areas of peat. Risk of flooding' (SSEW, 1983). A small area of calcareous soils were described in the east of the site similar to the above.

AGRICULTURAL LAND CLASSIFICATION

17. 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.

18. 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.

Subgrade 3a

19. Land of good quality is mapped on the higher land, east of Holt Farm. Soils typically comprise medium clay loam topsoils, which are very slightly stony (2-4% total flints, up to 2%>2cm). Topsoils overlie similar and/or fine sandy loam upper subsoils. These pass to heavier textures of sandy clay loam, heavy clay loam and clay with depth. Soil pit 2 (see Appendix II) is typical of these soils. Many of the profiles were impenetrable to the soil auger at depths between 40 and 60cm this was due to slightly stony upper subsoils (up to 8-13% total flints). The pit also proved the existence of a poorly structured clay horizon, below this stony band, which is slowly permeable and therefore impedes drainage and causes seasonal waterlogging. The profiles are typically gleyed from a depth of 22-42cm, evidence

of the seasonal waterlogging. The depth to the slowly permeable clay subsoil (between 45 and 52cm) results in soils being typically assigned to Wetness Class III. The combination of imperfect soil drainage, topsoil texture and climatic factors, gives rise to a land classification of Subgrade 3a. Excessive soil wetness may adversely affect crop growth and development, as well as limiting the flexibility of the land due to the 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

20. Land of moderate quality is mapped on the lower land across the site. Profiles are typically similar to those described in paragraph 19. However, the slowly permeable clay horizon occurs at a shallower depth, from 32 to 40cm. This causes significant seasonal waterlogging, shown by gleying which typically occurs from the surface (see soil pit 1). The soils are therefore assigned to Wetness Class IV. When combined with the topsoil texture and the prevailing climatic conditions this results in a land classification of Subgrade 3b. There are occasional borings of better quality within this unit, however they occur too infrequently to be mapped.

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SOURCES OF REFERENCE

British Geological Survey (1981) *Sheet No.284, Basingstoke.* 1:50,000 Series. Solid and Drift Edition. BGS: London.

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

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

Soil Survey of England and Wales (1983) *Sheet 6, South East England.* 1:250,000. 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	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1P	0-20	MCL	10YR42	75YR46	C	D		Y	0	0	HR	3							+FSand
	20-37	HCL	25Y52	10YR56	C	D	25Y52	Y	0	0	HR	2	MDCSAB	FR	M	Y			TendingAB
	37-70	C	25Y52	75YR58	M	D		Y	0	0		0	MDCAB	FM	P	Y		Y	
	70-100	C	25Y52	75YR58	M	D		Y	0	0	HR	20	WKCAB	FM	P	Y		Y	
2P	0-22	MCL	10YR32						3	0	HR	6							
	22-43	MCL	25Y53	10YR58	C	D		Y	4	0	HR	8	MDCSAB	FR	M				
	43-59	HCL	25Y63	10YR56	C	D		Y	8	0	HR	13			M				GoodPorosity
	59-120	C	25Y63	75YR46	C	D	10YR58	Y	0	0		0	MDCPR	FM	P	Y		Y	BreaksAB

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	SU73605410	PGR					1	1	68	-40	68	-33	3B				WE	3A	See 2P
1P	SU73605370	PGR			20	37	4	3B	112	4	105	4	3A				WE	3B	150 FCD
2	SU73705410	PGR	E	1	41	52	3	3A	110	2	108	7	3A				WE	3A	
2P	SU73605400	PGR			22	59	3	3A	129	21	105	4	2				WE	3A	151 FCD
3	SU73805410	PGR	E	2	42	50	3	3A	91	-17	97	-4	3A				WE	3A	See 2P
4	SU73605400	PGR			35		2	2	90	-18	90	-11	3A				WE	3A	See 2P
5	SU73705400	PGR			28	50	3	3A	95	-13	101	0	3A				WE	3A	
6	SU73805400	PGR	E	1	25	45	3	3A	116	8	121	20	2				WE	3A	
7	SU73505390	PGR	S	2	0	32	4	3B		0		0					WE	3B	See 1P
8	SU73605388	PGR	S	1	25	46	3	3A	112	4	117	16	3A				WE	3A	See 2P
9	SU73705390	PGR	S	2	0	32	4	3B		0		0					WE	3B	See 1P
10	SU73805390	PGR	SE	2	0	35	4	3B	93	-15	105	4	3A				WE	3B	See 1P
11	SU73905390	PGR	SE	2	S25	35	4	3B	95	-13	107	6	3A				WE	3B	See 1P
12	SU74005390	PGR	E	1	45		1	1	155	47	117	16	1					1	Groundwater
13	SU73505380	PGR	SE	1	0	45	3	3A	106	-2	111	10	3A				WE	3A	See 2P
14	SU73605380	PGR	S	1	0	33	4	3B		0		0	3B				WE	3B	See 1P
15	SU73705380	PGR	S	2	0	40	4	3B	116	8	121	20	2				WE	3B	See 1P
16	SU73805380	PGR			30	30	4	3B	127	19	104	3	2				WE	3B	See 1P
17	SU74005380	PGR					1	1	95	-13	101	0	3A				DR	3A	Query2DR
18	SU73505370	PGR			0	40	4	3B	113	5	118	17	2				WE	3B	See 1P
19	SU73605370	PGR			0	40	4	3B	130	22	107	6	2				WE	3B	See 1P
20	SU73705370	PGR			0	40	3	3B	104	-4	108	7	3A				WE	3B	See 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	STRUCT/ TOT	CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-25	MCL	10YR32						2	0	HR	4							FewRootMottles
	25-40	FSL	10YR33						0	0	HR	10		M					Imp Flints
2	0-28	MCL	10YR32						0	0	HR	2							
	28-41	MCL	10YR43	10YR58	F	D			0	0		0		M					+FSand
	41-52	SCL	25Y63	10YR56	C	D		Y	0	0	HR	5		M					
	52-80	C	25Y63	75YR58	M	D		Y	0	0	HR	5		P		Y			+FSandPlastic
	80-90	C	25Y63	75YR58	M	D		Y	0	0	HR	5		P		Y			Plastic
3	0-32	MCL	10YR32						0	0	HR	2							
	32-42	MCL	10YR54						0	0	HR	5		M					
	42-50	MCL	10YR53	10YR56	C	D		Y	0	0	HR	5		M					
	50-60	C	25Y62	10YR56	M	D	00MN00	Y	0	0		0		P		Y			Imp Flints
4	0-20	MCL	10YR32						0	0	HR	2							
	20-35	MCL	10YR32						0	0	HR	2		M					
	35-50	HCL	25Y63	10YR58	C	D		Y	0	0	HR	5		M					Imp Flints
5	0-28	MCL	10YR34						2	0	HR	4							+FSand
	28-50	FSL	25Y63	10YR58	C	D	00MN00	Y	0	0		0		M					
	50-60	C	25Y6362	10YR58	M	D	00MN00	Y	0	0		0		P		Y			Imp Flints
6	0-25	MCL	10YR34						0	0	HR	2							
	25-45	FSL	10YR53	10YR58	C	D	00MN00	Y	0	0	HR	2		M					
	45-80	C	25Y62	75YR58	M	D	00MN00	Y	0	0	HR	2		P		Y			Imp Flints
7	0-32	MCL	10YR52	10YR56	C	D		Y	0	0	HR	2							
	32-70	C	25Y62	10YR58	M	D		Y	0	0		0		P		Y			Moist
8	0-25	MCL	10YR32						2	0	HR	4							FewRootMottles
	25-46	MCL	25Y52	10YR58	C	D	00MN00	Y	0	0	HR	2		M					
	46-80	C	25Y61	10YR58	M	D		Y	0	0		0		P		Y			Plastic
9	0-32	MCL	10YR42	75YR46	C	D		Y	0	0	HR	2							+FSand
	32-80	C	25Y63	10YR58	M	D	00MN00	Y	0	0	HR	3		P		Y			Plastic
10	0-25	MCL	10YR53	75YR46	C	D		Y	0	0	HR	2							
	25-35	MCL	25Y53	10YR58	C	D	00MN00	Y	0	0	HR	2		M					
	35-70	C	25Y62	10YR68	M	D		Y	0	0		0		P		Y			PlasticMoist
11	0-25	MCL	10YR33						0	0	HR	2							FewRootMottles
	25-35	FSL	10YR43	10YR58	C	D		S	0	0	HR	2		M					
	35-70	C	25Y63	10YR58	M	D		Y	0	0		0		P		Y			PlasticMoist
12	0-30	MCL	10YR32						0	0	HR	2							
	30-45	MCL	25Y33						0	0	HR	2		M					
	45-120	HCL	25Y53	10YR58	M	D	00MN00	Y	0	0		0		M			Y		Crumbly

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
13	0-32	MCL	10YR52	10YR46	C	D		Y	0	0		0						Y	+FSand
	32-45	HCL	10YR62	10YR56	C	D	00MN00	Y	0	0		0		M				Y	+FSandFriable
	45-80	C	10YR6171	10YR58	M	D		Y	0	0		0		P		Y			Plastic
14	0-25	MCL	10YR42	75YR46	C	D		Y	0	0	HR	2							
	25-33	MCL	25Y62	10YR58	C	D		Y	0	0		0		M					+FSand
	33-80	C	25Y62	10YR58	M	D		Y	0	0		0		P		Y			MoistPlastic
15	0-32	MCL	10YR52	75YR46	C	D		Y	0	0	HR	2							
	32-40	HCL	25Y62	10YR58	C	D		Y	0	0		0		M					+FSand
	40-80	C	25Y61	10YR58	M	D	00MN00	Y	0	0	HR	2		P		Y			Moist
16	0-30	MCL	10YR32						2	0	HR	4							+FSand
	30-120	C	25Y63	75YR58	M	D	00MN00	Y	0	0		0		P		Y			PlasticMoist
17	0-35	MCL	10YR32						0	0	HR	2						Y	
	35-45	MZCL	10YR33						0	0	HR	2		M				Y	
	45-60	MZCL	10YR33						0	0	SLST	15		M				Y	ImpFlint
18	0-27	MCL	10YR52	10YR46	C	D		Y	0	0	HR	2							
	27-40	HCL	25Y63	10YR58	C	D	00MN00	Y	0	0	HR	4		M					+FSandCrumbly
	40-80	C	25Y62	10YR58	M	D		Y	0	0		0		P		Y			Plastic
19	0-25	MCL	10YR52	10YR46	C	D		Y	0	0	HR	2							
	25-33	MCL	25Y51	10YR56	C	D		Y	0	0		0		M					
	33-40	HCL	10YR58	25Y62	C	D		Y	0	0		0		M					
	40-65	C	25Y62	10YR58	M	D		Y	0	0		0		P		Y			MoistPlastic
	65-85	C	25Y52	75YR58	M	D		Y	0	0	HR	5		P		Y			
	85-120	C	25Y51	75YR58	M	D	00MN00	Y	0	0		0		P		Y			+FSand
20	0-30	MCL	10YR52	75YR46	C	D		Y	0	0	HR	2							+FSand
	30-40	MCL	25Y52	75YR46	C	D		Y	0	0		0		M					Moist
	40-60	C	25Y63	10YR56	M	D		Y	0	0	HR	2		P		Y			Plastic
	60-80	C	25Y61	10YR56	M	D		Y	0	0		0		P		Y			