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**KENT MINERALS LOCAL PLAN REVIEW
Land at Addington (Site 146)**

**Agricultural Land Classification
ALC Map and Report**

December 1998

**Resource Planning Team
Eastern Region
FRCA Reading**

**RPT Job Number 2013/097/98
MAFF Reference EL20/01847**

AGRICULTURAL LAND CLASSIFICATION REPORT

KENT MINERALS LOCAL PLAN REVIEW LAND AT ADDINGTON (Site 146)

INTRODUCTION

- 1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 19 ha of land at Addington Kent. The survey was carried out during December 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). The survey was carried out in connection with MAFF's statutory input to the Kent Minerals Local Plan Review. Part of the present area was previously surveyed (FRCA Ref 2013/009/87) but this current 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 cereals and rough grazing. The areas mapped as 'Other land' include a soil bund, a small water storage pond and dense woodland/scrub.

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	4.1	28.5	22.0
3b	10.3	71.5	55.4
Other land	4.2	N/A	22.6
Total surveyed area	14.4	100.0	77.4
Total site area	18.6		100.0

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. In total 19 borings and 2 soil pits were described.
- 8 The agricultural land at this site has predominantly been classified as Subgrade 3b (moderate quality agricultural land). A smaller area of Subgrade 3a (good quality agricultural land) has been mapped within the survey area and is confined to the most easterly parcel of land surveyed. The main limitation across the site on both the Subgrade 3a and 3b land was soil wetness.
- 9 The land classified as Subgrade 3b occurs on each of the four separate parcels of land. The soils typically comprise fine loamy topsoils overlying clay. Evidence of significant soil wetness is common, related to the presence of low porosity clay subsoils which obstruct drainage through the profile. Soil wetness reduces the versatility of the land in terms of access by machinery (e.g. for cultivations or harvesting) and grazing by livestock if damage to the soil is to be avoided. Soil wetness will also adversely affect seed germination and root growth and will therefore reduce the level and consistency of yields. The land classified as Subgrade 3a occurs on the eastern edge of the survey area. The soils typically comprise medium loamy topsoils and upper subsoils overlying clay which may become sandier with depth. Evidence of soil wetness is also apparent in these soils but occurs lower down the profile compared to land classified as Subgrade 3b. Therefore the wetness limitations are less than the Subgrade 3b soils making the land more versatile.

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		
		TQ647 596	TQ652 599	TQ642 593
Grid reference	N/A	TQ647 596	TQ652 599	TQ642 593
Altitude	m AOD	63	68	73
Accumulated Temperature	day C (Jan June)	1436	1430	1425
Average Annual Rainfall	mm	706	708	710
Field Capacity Days	days	143	144	144
Moisture Deficit Wheat	mm	112	111	110
Moisture Deficit Potatoes	mm	105	105	103
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 (ATO January to June) as a measure of the relative warmth of a locality
- 14 The combination of rainfall and temperature at this site means that there is no overall climatic limitation. In addition the site does not suffer from significant exposure or frost risk. As such the site may be considered as being climatically Grade 1. Climatic factors do however interact with soil properties to influence soil wetness and soil droughtiness

Site

- 15 The survey area lies between 63m and 73m AOD with four separate units of land. On the easternmost and northernmost areas the land dips gently westward. The area to the south of Addington Lane is mostly flat though in the western part the land rises gently to the north. The western most site is flat. Nowhere on the site do gradient, microrelief or flooding adversely affect agricultural land quality

Geology and soils

- 16 The most detailed published geological information for this area (BGS 1971) maps the surveyed areas to comprise either Gault or Folkestone Beds (Lower Greensand). The west and north sites are both underlain by the Gault while the easternmost site is mapped as lying entirely on Folkestone Beds. The parcel of land to the south of Addington Lane is mostly mapped as Folkestone Beds although the western part is indicated as Gault
- 17 The most recent published soils information covering the area (SSEW 1983) shows the site to consist of soils from the Fyfield 2 Association and Denchworth Association. Soils of the Denchworth Association are described as Slowly permeable seasonally waterlogged clayey soils with fine loamy over clayey soils. Some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils. Landslips and associated irregular terrain locally (SSEW 1983). Soils of the Fyfield 2 Association are described as Well drained coarse loamy and sandy soils over sands and sandstones. Some very acid sandy soils with bleached subsurface horizons on heaths and in woodlands. Risk of water erosion (SSEW 1983). These soils are similarly described in Soils of Kent (SSEW 1980). Detailed survey work found soils similar to those described here

AGRICULTURAL LAND CLASSIFICATION

- 18 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
- 19 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

- 20 Land of Subgrade 3a (good agricultural quality) has been mapped on the eastern edge of the site. The principal limitation with these soils is soil wetness and the profiles are typified by Pit 2. Soil profiles in this area comprise non calcareous very slightly stony (2% hard rock by volume) medium clay loam topsoils overlying heavy clay loam upper subsoils over clay lower subsoils. Some profiles in this mapping unit also exhibit sandier subsoil horizons. Evidence of wetness within the clay lower subsoils was seen in the form of ochreous mottles. This was supported by pit observations which confirmed that the clay lower subsoil was slowly permeable having a porosity >0.5% of biopores >0.5mm. In the local climate this slowly permeable layer acts to impart a soil wetness problem with Wetness Class III being assigned. In combination with workable medium clay loam topsoils an ALC grading of Subgrade 3a is appropriate. The drainage impedance is sufficient to result in some restriction on access to the land for cultivations and/or grazing if soil damage is to be avoided. The imperfect drainage is also likely to cause crop yields to be less consistent than on land of higher quality.

Subgrade 3b

- 21 Land of Subgrade 3b (moderate agricultural quality) has been mapped across the majority of the site. The principal limitation with soils in this area is soil wetness and the profiles are typified by Pit 1. Soil profiles comprise heavy clay loam or heavy silty clay loam topsoils overlying clay upper and lower subsoils. Evidence of soil wetness in the form of ochreous mottles set against a pale matrix colour (gleying) was present within 40cm. Observations from Pit 1 indicated that the upper clay subsoil was poorly structured and slowly permeable. In the local climate wetness class IV is appropriate which in combination with the heavy textured topsoils gives a grading of Subgrade 3b. As with the land in Subgrade 3a the drainage impedance is sufficient to impart a restriction on access to the land for cultivations and/or grazing although to a greater degree. The imperfect drainage is likely to also restrict the range of crops that can be produced and the level and consistency of yields.
- 22 Within the Subgrade 3b mapping unit two borings proved impenetrable to the auger at 45cm due to stoniness and have been graded as Subgrade 3b on soil droughtiness. They have been mapped within the Subgrade 3b mapping unit although they may prove to be of higher quality if further investigations are made. However they were isolated borings representing a very limited area.
- 23 Within the most northern parcel of land it is possible that the area surveyed had previously undergone some disturbance since the soils appeared to be very anaerobic with unusually pale matrix colours. This is probably associated with the adjoining workings and the soil storage bund located nearby.

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SOURCES OF REFERENCE

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

Soil Survey of England and Wales (1980) *Soils of Kent Soil Survey Bulletin No 9*
SSEW Harpenden

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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

Sample location map

Soil abbreviations explanatory note

Soil pit and soil boring descriptions (boring and horizon levels)

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 **GLEYS/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 subdivided 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 descr bed

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	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	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP					
1	TQ65105990	RGR W	2	0	35	4	3B	130	18	107	2	2	WE	3B	SEE 1P
2	TQ65275984	RGR N	2	25	25	4	3B	128	16	104	-1	2	WE	3B	SL ANAEROBIC
3	TQ65085978	RGR NW	2	35	35	4	3B	127	15	104	-1	2	WE	3B	SL ANAEROBIC
4	TQ64605970	CER		30	30	4	3B	117	5	93	-12	3A	WE	3B	SEE 1P
5	TQ65305970	CER SW	2	30	30	4	3B	128	16	105	0	2	WE	3B	SL SANDY
6	TQ65405970	CER W	2	50	50	3	3A	145	33	110	5	2	WE	3A	SEE 1P
7	TQ64605960	CER		35	35	4	3B	126	14	103	-2	2	WE	3B	SEE 1P
8	TQ64705960	CER S	2	35	35	4	3B	124	12	102	-3	2	WE	3B	SL STONY TS
9	TQ64805960	CER						71	-41	71	-34	3B	DR	3B	IMP 45 73A
10	TQ64875960	CER						70	-42	70	-35	3B	DR	3B	IMP 45 73A
11	TQ65105960	CER		25	25	4	3B	124	12	101	-4	2	WE	3B	SEE 1P
12	TQ65305960	CER W	2	45		1	1	122	10	114	9	2	DR	2	IMP 90 POSS WC
13	TQ65405960	CER SW	2	45	45	3	3A	150	38	115	10	1	WE	3A	SEE 2P
14	TQ65105950	CER N	2	75	75	2	2	152	40	112	7	2	WD	2	SEE 2P
15	TQ65305950	CER W	2	35	35	4	3B	135	23	107	2	2	WE	3B	SEE 2P
16	TQ64205940	RGR		30	30	4	3B	132	20	109	4	2	WE	3B	SEE 1P
17	TQ64305940	RGR		25	25	4	3B	128	16	105	0	2	WE	3B	SEE 1P
18	TQ64205930	RGR		30	30	4	3B	128	16	105	0	2	WE	3B	SEE 1P
19	TQ64305930	RGR		30	30	4	3B	132	20	109	4	2	WE	3B	SEE 1P
1P	TQ64305940	RGR		25	25	4	3B	127	15	105	0	2	WE	3B	
2P	TQ65405960	CER SW	2	48	48	3	3A	148	36	115	10	1	WE	3A	H2 SL SANDY

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL	----STONES----			STRUCT/ CONSIST	SUBS				CALC		
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR		IMP	SPL
1	0-35	HCL	25Y 52	10YR56		C D		Y	0	0	CH	2						WITH SILT
	35-70	C	25Y 62 63	75YR58		M D		Y	0	0	HR	2		P		Y		PLASTIC
	70-120	C	05Y 52	10YR56		M D		Y	0	0		0		P		Y		PLASTIC
2	0-25	HCL	10YR32						0	0		0						GRITTY
	25-65	SCL	05Y 52	10YR58		M D		Y	0	0		0		P		Y		SL ANAEROBIC
	65-120	C	10GY 5	10YR58		M D		Y	0	0		0		P		Y		PLASTIC
3	0-35	C	25Y 42	10YR56		C D		Y	0	0	HR	2						
	35-60	C	25Y 52	10YR58		C D		Y	0	0	CH	2		P		Y	Y	
	60-120	C	05Y 51	75YR58		M D		Y	0	0		0		P		Y		PLASTIC
4	0-30	HCL	10YR42						3	0	HR	10						
	30-45	C	25Y 51	10YR58		M D		Y	0	0	HR	10		P		Y		PLASTIC
	45-80	C	25Y 51	10YR58		M D		Y	0	0	HR	20		P		Y		PLASTIC
	80-120	C	05Y 61	10YR58		M D		Y	0	0	CH	2		P		Y		PLASTIC
5	0-30	MCL	10YR42						0	0	HR	2						SL SANDY
	30-55	C	25Y 62	75YR68 58		M D		Y	0	0		0		P		Y		SL SANDY
	55-120	C	10GY 5	75YR46 58		M D		Y	0	0		0		P		Y		PLASTIC
6	0-30	MCL	10YR42						0	0	HR	2						
	30-50	HCL	10YR44						0	0	HR	2			M			SL SANDY
	50-80	C	25Y 52	75YR56		M D		Y	0	0		0			M		Y	SL SANDY
	80-120	SCL	25Y 52	75YR46 58		M D		Y	0	0		0			M			
7	0-35	HCL	10YR42	10YR56		F D			3	0	HR	10						
	35-120	C	05Y 61	10YR68		M D		Y	0	0		0		P		Y		PLASTIC
8	0-35	HCL	10YR42						3	0	HR	10						
	35-55	C	25Y 53	10YR68		C D		Y	0	0	HR	2		P		Y		FIRM
	55-120	C	10GY 5	10YR58 68		M D		Y	0	0	HR	2		P		Y		PLASTIC
9	0-30	HCL	10YR43						3	0	HR	10						
	30-40	HCL	10YR44						0	0	HR	5			M			
	40-45	HCL	10YR44						0	0	HR	20			M			IMP45 FLINTS
10	0-28	HCL	10YR43						3	0	HR	10						
	28-40	HCL	10YR44						0	0	HR	5			M			
	40-45	HCL	10YR44						0	0	HR	20			M			IMP45 FLINTS
11	0-25	MCL	10YR42						0	0	HR	2						
	25-60	C	05Y 62	75YR58		M D		Y	0	0	HR	5		P		Y		MANY MN
	60-120	C	05Y 62	10YR58		M D		Y	0	0		0		P		Y		PLASTIC
12	0-28	MCL	10YR43						1	0	HR	5						
	28-45	HCL	10YR44						0	0		0			M			
	45-90	HCL	10YR53	10YR56		M D		Y	0	0	HR	2			M			SL SANDY

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED	----STONES--			STRUCT/	SUBS	SPL	CALC					
				COL	ABUN	CONT		COL	GLE	>2					>6	LITH	TOT	CONSIST	STR
13	0-30	MCL	10YR42						0	0	HR	2							
	30-45	HCL	10YR44						0	0	HR	2	M						
	45-65	HCL	25Y 52	75YR56	M	D		Y	0	0		0	M	Y					
	65-80	C	25Y 52	75YR46	56	M	D		Y	0	0	0	M	Y	SL SANDY				
	80-120	SCL	25Y 52	75YR46	56	M	D		Y	0	0	0	M						
14	0-28	MCL	10YR43						0	0	HR	2		SL SANDY					
	28-60	SCL	10YR56	00MNO0	F				0	0	HR	2	M						
	60-75	SCL	10YR56	75YR46	F	F		S	0	0		0	M						
	75-120	C	10YR53	52	10YR56	68	M	D	Y	0	0	0	M	Y	SL SANDY				
15	0-25	MCL	10YR42						0	0		0							
	25-35	HCL	10YR53						0	0		0	M						
	35-70	C	10YR53	10YR56	C	D		Y	0	0		0	M	Y	DENSE/SL SANDY				
	70-120	SCL	10YR53	10YR56	M	D		Y	0	0		0	M						
16	0-30	HZCL	05Y 52	10YR56	C	D		Y	0	0		0		DENSE					
	30-50	C	05Y 62	10YR58	M	D		Y	0	0		0	P	Y					
	50-120	C	05Y 61	10YR56	M	D		Y	0	0		0	P	Y	PLASTIC				
17	0-25	HZCL	05Y 42	10YR58	C	D			0	0		0							
	25-70	C	05Y 61	10YR68	M	D		Y	0	0	HR	2	P	Y	PLASTIC				
	70-120	C	05Y 61	63	10YR58	M	D		Y	0	0	0	P	Y	PLASTIC				
18	0-30	HCL	05Y 52	10YR56		C		Y	0	0		0							
	30-65	C	05Y 62	63	10YR58	M	D		Y	0	0	HR	2	P	Y	MANY MN			
	65-120	C	05Y 62	63	10YR56	M	D		Y	0	0	0	P	Y	PLASTIC				
19	0-30	HZCL	25Y 52	10YR56	C	D		Y	0	0		0							
	30-120	C	05Y 62	10YR68	M	D		Y	0	0		0	P	Y					
1P	0-25	HZCL	05Y 42	10YR56	C	D			0	0		0							
	25-50	C	05Y 61	75YR56	M	D		Y	0	0	HR	2	MDCAB	FM	P	Y	Y	LOW POROSITY	
	50-120	C	05Y 62	63	10YR58	M	D		Y	0	0	HR	2	MDCAB	FM	P	Y	Y	PLASTIC
2P	0-25	MCL	10YR42						0	0	HR	2							
	25-48	HCL	10YR44						0	0	HR	2	MDCSAB	FR	M		POROUS		
	48-80	C	25Y 51	52	75YR46	58	M		Y	0	0	HR	2	MDCAB	FR	M	Y	Y	SL SANDY
	80-105	SCL	25Y 52	10YR56	M	D		Y	0	0	HR	2	MDCSAB	FR	M		POROUS		
	105-120	CSL	10YR53	10YR56	M	D		Y	0	0		0	MDCSAB	FR	M		POROUS		