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Hampshire Minerals Plan
Omission Site 31 Kings Farm, Hordle
Agricultural Land Classification
ALC Map and Report
December 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

HAMPSHIRE MINERALS PLAN
OMISSION SITE 31 KINGS FARM, HORDLE

1 Summary

1 1 ADAS was commissioned by MAFF s Land Use Planning Unit to provide information on land quality for a number of sites in Hampshire The work forms part of MAFF s statutory input to the Hampshire Minerals Plan

1 2 Site 31 comprises approximately 29 2 hectares of land to the east of Hordle in Hampshire An Agricultural Land Classification (ALC) survey was carried out in November 1994 The survey was undertaken at a detailed level of approximately one boring per hectare A total of 34 borings and two soil inspection pits were assessed in accordance with MAFF s revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988) These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long term limitations on its use for agriculture

1 3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS

1 4 At the time of the survey the majority of the land was in set aside having the remains of a potato crop in one area to the south west and volunteer linseed towards the centre and east of the site A grass cover was present over the remainder of the site The areas shown as urban and non agricultural are tracks

1 5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below The map has been drawn at a scale of 1 10 000 It is accurate at this scale but any enlargement would be misleading This map supersedes any previous ALC survey information for this site

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
2	13 2	45 2	46 2
3a	11 3	38 7	39 5
3b	4 1	14 0	14 3
Non Agricultural	0 1	0 4	100% (28 6ha)
Urban	0 5	1 7	
Total area of Site	29 2ha	100%	

1 6 Appendix I gives a general description of the grades subgrades and land use categories identified in the survey The main classes are described in terms of the type of limitation that can occur the typical cropping range and the expected level and consistency of yield

1 7 The agricultural land at this site has been classified Grade 2 very good quality to Subgrade 3b moderate quality including a substantial proportion of Subgrade 3a good quality The principal limitations include soil wetness and to a lesser extent soil droughtiness Soil wetness affects the majority of the land surveyed where slowly permeable clay and heavy clay loam horizons occur between 30 and 80cm depth in the soil profile These cause drainage to be slightly to severely impeded dependant on depth to the slowly permeable horizon such that the classifications are appropriate given the local climatic regime Poorly drained soils can inhibit plant and root development and may be more susceptible to structural damage through trafficking by machinery or poaching by grazing livestock In some observations soil droughtiness was more (or equally) limiting than soil wetness At these points the soil profile was found to contain varying proportions of flints These serve to slightly and moderately restrict profile available water such that within the local climatic parameters there is a slight risk of soil droughtiness

2 Climate

2 1 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

2 2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall as a measure of overall wetness and accumulated temperature as a measure of the relative warmth of a locality

2 3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met Office 1989) The details are given in the table below and these show that there is no overall climatic limitation affecting the site

2 4 No local climatic factors such as exposure or frost risk are believed to affect the site However climatic and soil factors interact to influence soil wetness and droughtiness limitations

Table 2 Climatic Interpolation

Grid Reference	SZ278955
Altitude (m AOD)	30
Accumulated Temperature (°days Jan -June)	1533
Average Annual Rainfall (mm)	830
Field Capacity Days	172
Moisture deficit wheat (mm)	109
Moisture deficit potatoes (mm)	103
Overall Climatic Grade	1

3 Relief

3 1 The site lies at approximately 30m AOD and is relatively flat overall Towards the centre of the site is a shallow valley centred around a stream Nowhere on the site does relief or gradient affect agricultural land quality

4 Geology and Soils

4 1 The published geological information (BGS 1976) shows the entire site to be underlain by plateau gravel as a drift deposit

4 2 The published soils information (SSEW 1983) shows the site to be underlain by soils of the Efford 1 Association The legend accompanying the map describes these as well drained brown fine loamy soils often over gravel associated with similar permeable soils variably affected by groundwater (SSEW 1983) Soils encountered at the site comprised fine loamy topsoils and subsoils commonly becoming clayey and/or stony with depth

5 Agricultural Land Classification

5 1 Paragraph 1 5 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map

5 2 The location of the soil observation points are shown on the attached sample point map

Grade 2

5 3 Land of very good quality is mapped towards the east and centre of the site in two distinct mapping units The principal limitation is soil wetness although soil droughtiness is equally limiting in many cases Profiles typically comprise a stoneless or very slightly stony (up to 3% total flints by volume) medium occasionally heavy clay loam or medium silty clay loam topsoil This passes to

similarly stony gleyed medium or heavy clay loam upper subsoil horizons The lower subsoils in this area were found to be variable in some cases remaining similar to the upper subsoils i e virtually stoneless gleyed medium and heavy clay loams to depth In other areas they were found to comprise moderately stony (up to 35% total flints by volume) gleyed and slowly permeable heavy clay loam and clay horizons (see 1p Appendix III) Soils of this type are placed in Wetness Class II (see Appendix II) as the gleying encountered indicates that imperfect drainage affects the soil to a slight degree This has the effect of slightly restricting the versatility of the land as cultivations and/or stocking may not be possible at certain times without causing structural damage to the soil

The remaining observations were equally limited by soil droughtiness and soil wetness Essentially the profiles are similar to those described above except that they either became impenetrable to the soil auger due to stones in the lower subsoil horizon between 80 and 90cm or became sandier with depth and therefore less capable of retaining water in the profile adequate for plant growth As shown by the pit observation (1p Appendix III) the lower subsoil horizons contain a moderate (about 35% total flints) stone content This restricts available water in the profile such that plant growth and yield is likely to be slightly affected due to soil droughtiness as well as soil wetness as described above

Subgrade 3a

5 5 Land of good quality is mapped across much of the western part of the site The principal limitation is soil wetness due to impeded drainage Profiles in these areas of the site typically comprise a very slightly stony (up to 3% total flints) medium clay loam topsoil This overlies a similarly stony gleyed medium or heavy clay loam upper subsoil passing to a stoneless to moderately stony (up to 25% total flints) slowly permeable clay between 47 and 73cm Occasional observations were impenetrable due to the flints in the clay lower subsoil between 70 and 100cm The pit observation 2p (see Appendix III) is typical of this soil type The depth of the slowly permeable horizon given the local climate is in the range where Wetness Class III (see Appendix II) is appropriate leading to Subgrade 3a being assigned when the moderate workability status of the topsoils are taken into account A soil wetness limitation of this nature is sufficient to place moderate restrictions on the versatility of the land in terms of cultivations and/or stocking of the land It can also affect plant growth and yield

Subgrade 3b

5 6 Land of moderate quality is mapped across the lower parts of the site Principal limitations to land quality include soil wetness soil workability and soil droughtiness Profiles in this mapping unit principally limited by soil wetness comprise a very slightly stony (up to 5% total flints) medium clay loam or organic loam topsoil directly overlying gleyed and slowly permeable slightly stony (up to

15% total flints) clay at 30cm Between 68 and 75cm this becomes impenetrable to the soil auger Profiles of this type are placed in Wetness Class IV (see Appendix II) and subsequently Subgrade 3b the limitation on the versatility of the land being more severe than elsewhere on the site

Profiles limited by soil workability comprise a very slightly stony (up to 5% total flints) clay topsoil over similarly stony medium clay loam upper subsoil horizons becoming gleyed at 60cm and passing to slowly permeable clay at 75cm The depth of the slowly permeable horizon leads to Wetness Class II (see Appendix II) being appropriate However when the heavy nature and low workability status of the topsoil is taken into account Subgrade 3b is appropriate The nature of the topsoil limits the versatility of the land as during wetter periods the topsoil structure could be damaged by cultivations and/or stocking

Occasional profiles are limited by soil droughtiness Typically they comprise a slightly stony (up to 10% total flints) heavy clay loam topsoil This passes to a moderately stony (20% total flints) gleyed heavy clay loam subsoil horizon which becomes impenetrable to the soil auger at approximately 40cm over gravelly horizons The reduction in available water that the stones cause leads to the likelihood of limitations on plant growth and yield such that Subgrade 3b is appropriate

ADAS Reference 1508/278/94
MAFF Reference EL15/107

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1976) Sheet 330 - Lymington Drift Edition 1 50 000

MAFF (1988) Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land

Meteorological Office (1989) Climatic datasets for Agricultural Land Classification

Soil Survey of England and Wales (1983) Sheet No 6 Soils of South East England 1 250 000 and Accompanying Legend

Soil Survey of England and Wales (1984) Bulletin No 15 - Soils and their use in South-East England

APPENDIX I

DESCRIPTION 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

Urban
Built up or hard' uses with relatively little potential for a return to agriculture including housing industry commerce education transport religious buildings cemeteries Also hard-surfaced sports facilities permanent caravan sites and vacant land all types of derelict land including mineral workings which are only likely to be reclaimed using derelict land grants

Non-agricultural
'Soft uses where most of the land could be returned relatively easily to agriculture including private parkland public open spaces sports fields allotments and soft surfaced areas on airports Also active mineral workings and refuse tips where restoration conditions to soft after-uses may apply

Woodland
Includes commercial and non commercial woodland A distinction may be made as necessary between farm and non farm woodland

Agricultural Buildings
Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses Temporary structures (e g polythene tunnels erected for lambing) may be ignored

Open Water
Includes lakes ponds and rivers as map scale permits

Land Not Surveyed
Agricultural land which has not been surveyed

Where the land use includes more than one of the above e g buildings in large grounds and where map scale permits the cover types may be shown separately Otherwise the most extensive cover type will be shown

APPENDIX II

DEFINITION OF SOIL WETNESS CLASS

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years

Wetness Class II

The soil profile is wet within 70 cm depth for 31 90 days in most years **or** if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for 31-90 days in most years

Wetness Class III

The soil profile is wet within 70 cm depth for 91 180 days in most years **or** if there is no slowly permeable layer present within 80 cm depth it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31 90 days in most years

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth fro more than 210 days in most years **or** if there is no slowly permeable layer present within 80 cm depth it is wet within 40 cm depth for 91 210 days in most years

Wetness Class V

The soil profile is wet within 40 cm depth for 211 335 days in most years

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a database This has commonly used notations and abbreviations as set out below

Boring Header Information

1 **GRID REF** national 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 measured by a hand held optical clinometer

4 **GLEY/SPL** Depth in cm to gleying or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

6 **MB (WHEAT/POTS)** Moisture Balance

7 **DRT** Best grade according to soil droughtiness

8 If any of the following factors are considered significant an entry of Y' will be entered in the relevant column

MREL Microrelief limitation	**FLOOD** Flood risk	**EROSN** Soil erosion risk
EXP Exposure limitation	**FROST** Frost	**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 **ST** Topsoil Stones
CH Chemical	**WE** Wetness	**WK** Workability
DR Drought	**ER** Erosion Risk	**WD** Soil Wetness/Droughtiness

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	**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 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

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

6 **STONE LITH** 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	**GH** gravel with non porous (hard) stones
SI soft weathered igneous/metamorphic rock	

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

7 **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 **VC** very coarse
ped shape **S** single grain **M** massive **GR** granular **AB** angular blocky **SAB** sub angular blocky **PR** prismatic **PL** platy

8 **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

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

10 **POR** Soil porosity If a soil horizon has less than 0 5% biopores >0 5 mm a Y will appear in this column

11 **IMP** If the profile is impenetrable a Y will appear in this column at the appropriate horizon

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

13 **CALC** If the soil horizon is calcareous a Y will appear in this column

14 Other notations
APW available water capacity (in mm) adjusted for wheat
APP available water capacity (in mm) adjusted for potatoes
MBW moisture balance wheat
MBP moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name HANTS MINS OM SITE 31 Pit Number 1P

Grid Reference SZ28109520 Average Annual Rainfall 830 mm
Accumulated Temperature 1533 degree days
Field Capacity Level 172 days
Land Use Permanent Grass
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 31	MCL	10YR42 00	0	2	HR		MDCSAB	FR		
31- 51	MCL	10YR54 64	0	2	HR	C	MDCSAB	FR	M	
51- 77	HCL	10YR53 00	0	5	HR	M	MDCSAB	FR	M	
77- 90	HCL	25Y 61 00	0	35	HR	M	WKCSAB	FR	M	
90-120	C	25Y 61 00	0	35	HR	M		FM	P	

Wetness Grade 2 Wetness Class II
Gleying 31 cm
SPL 77 cm

Drought Grade 2 APW 133mm MBW 24 mm
APP 115mm MBP 12 mm

FINAL ALC GRADE 2
MAIN LIMITATION Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name HANTS MINS OM SITE 31 Pit Number 2P

Grid Reference SZ27799520 Average Annual Rainfall 830 mm
Accumulated Temperature 1533 degree days
Field Capacity Level 172 days
Land Use Set-aside
Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MCL	10YR42 00	0	1	HR		WKCSAB	FR		
29- 70	MCL	10YR53 00	0	1	HR	C	MDCSAB	FR	M	
70-100	HCL	25Y 71 00	0	1	HR	M	MDCAB	FR	M	
100-120	C	25Y 71 00	0	25	HR	M	WKCSAB	FM	P	

Wetness Grade 3A Wetness Class III
Gleying 29 cm
SPL 70 cm

Drought Grade 1 APW 145mm MBW 36 mm
APP 117mm MBP 14 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Wetness

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	SZ27739550	PGR			30	55	3	3A		0		0					WE	3A	IMP FLINTS 100
1P	SZ28109520	PGR			31	77	2	2	133	24	115	12	2				WD	2	PIT 95
2	SZ27809550	PGR			30	50	3	3A		0		0					WE	3A	
2P	SZ27799520	SAS			29	70	3	3A	145	36	117	14	1				WE	3A	SANDY 70+
3	SZ27909550	PGR			30	55	3	3A	96	-13	106	3	3A				WE	3A	IMP FLINTS 70
4	SZ27709540	PGR			30		2	2		0		0					WE	2	SANDY 90
5	SZ27809540	PGR			30	30	4	3B		0		0					WE	3B	SANDY LENS 55
6	SZ27909540	PGR			30	73	3	3A		0		0					WE	3A	JUST WC3
7	SZ28009540	PGR			30		2	3A	62	47	62	-41	3B				DR	3B	IMP FLINTS 40
8	SZ28109538	SAS			30		2	2	119	10	121	18	2				WD	2	IMP FLINTS 80
9	SZ27609530	SAS			35	95	2	2		0		0					WE	2	
10	SZ27709530	SAS			35	60	3	3A		0		0					WE	3A	IMP FLINTS 100
11	SZ27809530	SAS			35		2	2		0		0					WE	2	
12	SZ27909530	SAS			35	35	4	3B		0		0					WE	3B	
13	SZ28009530	PGR			30	30	4	3B		0		0					WE	3B	IMP FLINTS 75
14	SZ28109530	SAS			30	80	2	2		0		0					WE	2	SANDY LENS 110
15	SZ27509520	SAS			35	35	4	3B		0		0					WE	3B	IMP FLINTS 105
16	SZ27609520	SAS			28	50	3	3A		0		0					WE	3A	IMP FLINTS 100
17	SZ27709520	SAS			35	60	3	3A		0		0					WE	3A	
18	SZ27809520	SAS			28		2	2		0		0					WE	2	SANDY
19	SZ27909520	SAS			25	50	3	3A	117	8	103	0	2				WE	3A	IMP 70 DRT0120
20	SZ28009520	PGR	W	02	36	55	3	3A	129	20	108	5	2				WE	3A	IMP 75 DRT0120
21	SZ28109520	PGR			50	75	2	2	136	27	116	13	2				WD	2	IMP90 SLGLEY30
22	SZ27819510	SAS			33	95	2	2		0		0					WE	2	WET 60-95
23	SZ27909510	SAS			35	35	4	3B		0		0					WE	3B	IMP FLINTS 68
24	SZ28009510	PGR			30	65	3	3A		0		0					WE	3A	
25	SZ28109510	PGR					1	1	152	43	118	15	1					1	SL GLEY 30
26	SZ28179510	PGR			55		1	1	154	45	117	14	1					1	IMP90 SLGLEY30
27	SZ28009500	SAS			35		2	2		0		0					WE	2	WET 75+
28	SZ28109500	SAS			35	47	3	3A		0		0					WE	3A	NR WCIV
29	SZ27939490	SAS	W	01	60	75	2	3B		0		0					WE	3B	WET
30	SZ28009490	SAS			30	45	4	3B		0		0					WE	3B	IMP FLINTS 85
31	SZ28109490	SAS			30	50	3	3A	111	2	113	10	3A				WE	3A	IMP FLINTS 80
32	SZ27919480	SAS	S	01	0		2	3A		0		0					WE	3A	SANDY
33	SZ28009480	SAS			30	70	2	2	113	4	116	13	3A				WD	2	IMP FLINTS 80
34	SZ28109480	SAS			35	35	4	3B		0		0					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	mcl	10YR42 00						0	0	HR	2							
	30-55	mcl	25Y 61 00	10YR68 00	M			Y	0	0	HR	2		M					
	55-90	c	25Y 52 00	10YR58 00	M			Y	0	0		0		P			Y		
	90-100	mcl	25Y 52 00	10YR58 00	M			Y	0	0	HR	5		M					IMP FLINTS 100
1P	0-31	mcl	10YR42 00						0	0	HR	2	MDCSAB	FR					
	31-51	mcl	10YR54 64	10YR56 00	C			Y	0	0	HR	2	MDCSAB	FR	M				
	51-77	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	5	MDCSAB	FR	M	Y			BORDER MCL
	77-90	hcl	25Y 61 00	10YR58 00	M			Y	0	0	HR	35	WKCSAB	FR	M	Y		Y	
	90-120	c	25Y 61 00	10YR58 00	M			Y	0	0	HR	35		FM	P	Y		Y	
2	0-30	mcl	10YR42 00						0	0	HR	2							
	30-50	hcl	10YR53 00	10YR56 00	M			Y	0	0		0		M					
	50-95	c	25Y 52 00	10YR58 00	M			Y	0	0		0		P			Y		
	95-120	hcl	10YR52 00	10YR58 00	M			Y	0	0	HR	5		M			Y		
2P	0-29	mcl	10YR42 00						0	0	HR	1	WKCSAB	FR					
	29-70	mcl	10YR53 00	10YR56 00	C			Y	0	0	HR	1	MDCSAB	FR	M				
	70-100	hcl	25Y 71 00	75YR58 68	M			Y	0	0	HR	1	MDCAB	FR	M	Y		Y	
	100-120	c	25Y 71 00	75YR58 68	M	00MN00	00	Y	0	0	HR	25	WKCSAB	FM	P	Y		Y	
3	0-30	mcl	10YR42 41						0	0	HR	3							
	30-55	hcl	10YR53 52	10YR58 00	M			Y	0	0	HR	5		M					
	55-70	c	25Y 51 52	10YR58 00	M			Y	0	0	HR	25		P			Y		IMP FLINTS 70
4	0-30	mcl	10YR42 00						0	0	HR	2							
	30-50	hcl	10YR53 00	10YR56 00	C			Y	0	0	HR	2		M					
	50-90	hcl	10YR53 00	75YR56 00	M			Y	0	0	HR	2		M					
	90-120	mcl	10YR56 00						0	0	HR	5		M					
5	0-30	mcl	10YR42 00						0	0	HR	2							
	30-55	c	10YR53 52	10YR58 00	M			Y	0	0	HR	2		P			Y		
	55-90	c	10YR53 52	75YR58 00	M			Y	0	0	HR	3		P			Y		
	90-110	hcl	10YR56 00						0	0	HR	8		M					
6	0-30	mcl	10YR32 00						0	0	HR	2							
	30-73	hcl	10YR53 52	10YR58 00	M			Y	0	0	HR	4		M					
	73-88	c	10YR61 00	75YR56 00	M			Y	0	0	HR	15		P			Y		
7	0 30	hcl	10YR32 00						0	0	HR	10							
	30 40	hcl	10YR52 53	10YR56 00	C			Y	0	0	HR	20		M					IMP FLINTS 40
8	0 30	mzcl	10YR42 00						0	0	HR	1							
	30-50	mzcl	10YR53 54	10YR58 00	C			Y	0	0	HR	1		M					
	50-80	hcl	10YR53 00	10YR58 00	M			Y	0	0	HR	5		M					IMP FLINTS 80
9	0-35	mcl	10YR42 00						0	0	HR	2							
	35-55	hcl	10YR53 00	10YR56 00	C			Y	0	0		0		M					
	55-95	hcl	10YR53 00	10YR58 00	M	00MN00	00	Y	0	0		0		M					
	95-120	hcl	25Y 62 00	10YR58 00	M			Y	0	0		0		M			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	-- MOTTLES---- COL	ABUN	CONT	PED COL	GLEY	----STONES--- 2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
10	0-35	mcl	10YR42 43						0	0	HR	2						
	35-60	hcl	10YR53 00	10YR58 00	M		00MN00 00	Y	0	0		0		M				
	60-100	c	25Y 52 00	10YR58 00	M			Y	0	0	HR	5		P		Y		IMP FLINTS 100
11	0-35	mcl	10YR42 00						0	0	HR	2						
	35-75	hcl	10YR53 00	10YR56 58	C			Y	0	0		0		M				
	75-100	hcl	10YR53 52	10YR58 00	M		00MN00 00	Y	0	0		0		M				
	100-120	scl	25Y 52 62	10YR58 00	M			Y	0	0	HR	10		M				
12	0-35	mcl	10YR42 41						0	0	HR	3						
	35-55	c	25Y 51 00	10YR58 00	M			Y	0	0	HR	5		P		Y		
	55-70	c	25Y 52 00	10YR58 00	M		00MN00 00	Y	0	0	HR	30		P		Y		IMP FLINTS 70
13	0-30	mcl	10YR42 00						0	0	HR	5						
	30-75	c	10YR61 53	75YR58 00	M			Y	0	0	HR	15		P		Y		IMP FLINTS 75
14	0-30	mcl	10YR42 00						0	0		0						
	30 50	hcl	10YR52 53	10YR58 00	M			Y	0	0		0		M				
	50 80	msl	25Y 62 00	75YR58 00	M			Y	0	0	HR	3		M				
	80 120	c	10YR61 00	75YR58 00	M			Y	0	0	HR	10		P		Y		
15	0-35	mcl	10YR42 00						0	0	HR	3						
	35-65	c	25Y 62 63	10YR58 00	M		00MN00 00	Y	0	0	HR	10		P		Y		
	65-95	c	25Y 62 00	75YR58 00	M			Y	0	0		0		P		Y		
	95-105	c	25Y 62 61	75YR58 00	M			Y	0	0	HR	15		P		Y		IMP FLINTS 105
16	0-28	mcl	10YR42 00						0	0	HR	2						
	28-50	mcl	10YR53 00	10YR56 00	C			Y	0	0		0		M				
	50-90	c	10YR53 00	10YR58 00	M			Y	0	0		0		P		Y		
	90-100	c	10YR53 00	10YR58 00	M			Y	0	0	HR	10		P		Y		IMP FLINTS 100
17	0-35	mcl	10YR42 00						0	0	HR	2						
	35-60	hcl	10YR53 00	10YR56 58	M			Y	0	0		0		M				
	60-100	c	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0		0		P		Y		
	100-120	c	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0	HR	5		P		Y		
18	0-28	mcl	10YR42 00						0	0	HR	2						
	28-65	mcl	10YR52 00	10YR56 00	C			Y	0	0		0		M				
	65-90	fsl	25Y 53 00	10YR58 00	M			Y	0	0		0		M				
	90-120	scl	25Y 51 00	10YR58 00	M			Y	0	0		0		M				
19	0-25	mcl	10YR42 00						0	0	HR	3						
	25-50	mcl	25Y 53 52	10YR58 00	M			Y	0	0	HR	5		M				
	50-65	c	25Y 51 00	10YR58 00	M			Y	0	0	HR	15		P		Y		
	65-70	c	25Y 51 00	10YR58 00	M			Y	0	0	HR	35		P		Y		IMP FLINTS 70
20	0-30	mcl	10YR42 00						0	0		0						
	30-36	mcl	10YR42 00						0	0	HR	10		M				
	36-55	mcl	10YR52 61	75YR68 00	M			Y	0	0	HR	10		M				
	55-75	c	10YR61 00	75YR58 00	M			Y	0	0	HR	10		P		Y		IMP FLINTS 75

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
21	0-30	mcl	10YR42 00						0	0	HR	1						
	30-50	mcl	10YR54 00	10YR58 00	M			S	0	0		0		M				SLIGHTLY GLEYED
	50-75	mcl	10YR53 00	10YR58 00	M			Y	0	0	HR	5		M				
	75-90	c	10YR53 52	10YR58 00	M			Y	0	0	HR	15		P		Y		IMP FLINTS 90
22	0-33	hcl	10YR42 00						0	0	HR	3						
	33-60	mcl	10YR53 52	10YR56 00	M			Y	0	0		0		M				
	60-95	hcl	10YR53 00	10YR56 00	M			Y	0	0		0		M				
	95-120	hcl	25Y 62 61	75YR58 00	M			Y	0	0	HR	10		M		Y		
23	0-35	ol	10YR21 00						0	0	HR	5						
	35-68	c	05Y 61 71	10YR68 78	M			Y	0	0	HR	10		P		Y		IMP FLINTS 68
24	0-30	mcl	10YR42 00						0	0		0						
	30-65	mzcl	10YR53 52	10YR58 61	M			Y	0	0		0		M				
	65-90	c	10YR53 52	75YR58 62	M			Y	0	0		0		P		Y		
	90-120	c	10YR53 52	75YR58 62	M			Y	0	0	HR	5		P		Y		
25	0-30	mcl	10YR42 00						0	0		0						
	30-65	mcl	10YR54 00	10YR58 00	M			S	0	0		0		M				SLIGHTLY GLEYED
	65-80	mcl	10YR56 00	10YR68 00	C			S	0	0		0		M				
	80-120	mcl	10YR56 00	10YR68 00	C			S	0	0	HR	10		M				
26	0-30	mcl	10YR42 00						0	0		0						
	30-55	mcl	10YR54 00	75YR58 00	C			S	0	0		0		M				SLIGHTLY GLEYED
	55 95	mcl	10YR53 54	75YR58 00	M			Y	0	0	HR	3		M				IMP FLINTS 95
27	0-35	mcl	10YR42 00	10YR56 00	F				0	0	HR	3						
	35 75	hcl	10YR42 52	10YR56 00	C			Y	0	0		0		M				
	75 120	hcl	10YR42 00	10YR56 00	M	00MN00	00	Y	0	0		0		M				
28	0 35	mcl	10YR42 00	10YR56 00	F				0	0	HR	2						
	35 47	mcl	10YR63 73	10YR66 00	M	00MN00	00	Y	0	0		0		M				
	47 65	c	10YR63 62	10YR58 00	M	00MN00	00	Y	0	0		0		P		Y		
	65 120	scl	25Y 61 00	75YR58 00	M			Y	0	0	HR	5		M				
29	0-30	c	25Y 42 00	10YR56 00	F				0	0	HR	5						
	30-45	mcl	25Y 42 00	10YR56 00	F				0	0	HR	8		M				
	45-60	mcl	25Y 42 00	10YR56 00	F				0	0	HR	5		M				
	60-75	mcl	10YR53 62	10YR58 00	M			Y	0	0	HR	5		M				
	75-120	c	25Y 61 00	75YR58 00	M			Y	0	0	HR	10		P		Y		
30	0-30	mcl	10YR42 00	10YR56 00	F				0	0	HR	2						
	30-45	hcl	10YR53 52	10YR56 00	M			Y	0	0	HR	2		M				
	45-60	c	10YR53 52	10YR56 00	M			Y	0	0	HR	5		P		Y		
	60-85	hcl	25Y 61 00	75YR58 00	M			Y	0	0	HR	15		M		Y		IMP FLINTS 85
31	0-30	mcl	10YR42 00	00MN00	00	F			0	0	HR	3						
	30-50	hcl	25Y 63 00	10YR58 00	M			Y	0	0		0		M				
	50-75	hcl	25Y 52 00	10YR58 00	M			Y	0	0	HR	10		M		Y		
	75-80	hcl	25Y 52 00	10YR58 00	M			Y	0	0	HR	25		M		Y		IMP FLINTS 80

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
32	0-25	hcl	10YR52 00	75YR46 00	C			Y	0	0	HR	3						
	25-45	scl	25Y 61 00	75YR68 00	M			Y	0	0	HR	3		M				
	45-70	msl	25Y 61 00	75YR68 00	C			Y	0	0		0		M				
	70-90	msl	05Y 61 71	10YR56 00	C			Y	0	0	HR	15		M				IMP FLINTS 90
33	0-30	mcl	10YR42 00	75YR46 00	F				0	0		0						
	30-55	mcl	10YR53 52	10YR58 00	M			Y	0	0		0		M				
	55-70	mcl	10YR53 52	10YR58 00	M			Y	0	0	HR	10		M				
	70-80	hcl	10YR61 00	75YR58 00	M			Y	0	0	HR	15		M		Y		IMP FLINTS 80
34	0-35	mcl	10YR41 42						0	0	HR	3						
	35-80	hcl	25Y 61 62	10YR58 00	M			Y	0	0	HR	10		M		Y		
	80-120	hcl	10YR52 51	10YR58 00	M			Y	0	0	HR	15		M				