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**MILTON KEYNES EXPANSION STUDY  
Area 8 - West Bletchley, Buckinghamshire**

**Agricultural Land Classification  
Semi-Detailed Survey  
ALC Map and Report**

**May 1998**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

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**AGRICULTURAL LAND CLASSIFICATION REPORT**  
**MILTON KEYNES EXPANSION STUDY**  
**AREA 8 - WEST BLETCHLEY, BUCKINGHAMSHIRE**

**SEMI-DETAILED SURVEY**

**INTRODUCTION**

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey on 194.8 hectares of land to the west of Bletchley, on the south-western edge of Milton Keynes in Buckinghamshire. The survey was carried out during April 1998.
2. The work was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with its statutory input to the Milton Keynes Expansion Study. 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 the FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey, agricultural land use on the site comprised winter cereals, oilseed rape and grassland, both ley and permanent. The areas mapped as 'Other land' include farm buildings, residential dwellings and a recycling centre.

**SUMMARY**

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. 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 the Table 1 overleaf.
7. The fieldwork was conducted at a semi-detailed level of fieldwork, with an average density of 1 boring per 1.6 hectares. In total, 120 borings and 4 soil pits were described.
8. The agricultural land on this site has been assigned predominantly to Subgrade 3b, (moderate quality) with areas of Subgrade 3a (good quality) occurring in the north-west, centre and south-east.
9. The soils on the site are derived mainly from glacial Boulder Clay and Oxford Clay and have produced heavy land that has been classified as Subgrade 3b on the basis of soil wetness/workability restrictions. Typical profiles comprise non-calcareous clay loam topsoils (with occasional clay topsoils) over clayey subsoils which impede soil drainage. The

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<sup>1</sup> FRCA is an executive agency of MAFF and the Welsh Office

combination of impeded soil drainage and the heavy topsoils causes significant soil wetness/workability problems, such that the flexibility of cropping and the opportunities for cultivation or grazing by livestock are reduced. Where the soils are less clayey, calcareous and/or better structured and thereby better drained, the land is placed in Subgrade 3a.

**Table 1: Area of grades and other land**

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	17.0	9.1	8.7
3b	170.8	90.9	87.7
Other land	7.0	-	3.6
Total surveyed area	187.8	100	96.4
Total site area	194.8	-	100

## 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**

Factors	Units	Values			
		SP 840 323	SP 824 325	SP 831 325	SP 826 320
Grid reference	N/A	SP 840 323	SP 824 325	SP 831 325	SP 826 320
Altitude	m,AOD	100	110	115	120
Accumulated Temperature	day°C	1380	1369	1363	1358
Average Annual Rainfall	mm	656	658	659	661
Field Capacity Days	days	139	139	139	140
Moisture Deficit. Wheat	mm	104	103	102	102
Moisture Deficit. Potatoes	mm	95	93	93	92
Overall Climatic Grade	N/A	Grade 1	Grade 1	Grade 1	Grade 1

12. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

13. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

14. The combination of rainfall and temperature at this site means that there is no overall climatic limitation. Other local climatic factors such as exposure and frost risk are also not believed to affect the site; it is climatically Grade 1.

### **Site**

15. The site lies between approximately 100 and 120m AOD. The land is either flat or gently sloping towards the north (north of Weasel Lane) or towards the south-east (south of Weasel Lane). Nowhere on the site does gradient adversely affect agricultural land quality. Other site factors such as microrelief and flooding are not limiting.

### **Geology and soils**

16. The published geological information for the site (BGS, 1971) show the majority of the area to be underlain by glacial boulder clay as a drift deposit overlying solid Oxford Clay. Towards the extreme north-east of the site, the area immediately surrounding the stream is mapped as being underlain by alluvial drift deposits.

17. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows the whole area to comprise soils from the Hanslope association. These are described as, 'Slowly permeable calcareous clayey soils. Some slowly permeable non-calcareous clayey soils. Slight risk of water erosion' (SSEW, 1983). Upon detailed field examination, soils broadly consistent with the description of the Hanslope association were found across the site.

### **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. The soil profiles within the Subgrade 3a unit are affected by soil wetness and workability limitations. They have impeded drainage which gives rise to gleying below depths of 28cm. Topsoils comprise both calcareous and non-calcareous medium and heavy clay loams and, occasionally, calcareous clays which are generally stoneless or very slightly stony (up to 3% total flints). These rest over similar or slightly heavier upper subsoils which are sometimes gleyed but not slowly permeable. At depth, plastic, slowly permeable calcareous clay was found to contain up to 10% chalk and soft limestone fragments in addition to up to 8% flint stone. These soil profiles have been allocated to Wetness Class II or III (see Pit 4, Appendix II) and, given the topsoil characteristics, are placed in Subgrade 3a. These limitations will restrict the utilisation of the land by reducing the number of days when cultivations and/or grazing may occur without causing structural damage to the soil. Consequently, the flexibility of use of this land is reduced.

### Subgrade 3b

21. The remainder of the site has been mapped as Subgrade 3b and is also limited by soil wetness and workability restrictions. The soils within this unit comprise calcareous and non-calcareous heavy clay loam or clay topsoils which are stoneless to slightly stony (containing up to 5% total flint fragments). The profiles sometimes have shallow upper subsoil horizons which have similar characteristics to the topsoils and tend to be gleyed, calcareous and contain up to 15% soft limestone and flints. On the whole, however, the topsoils generally lie directly over denser more plastic calcareous clay subsoils (typically within 50cm of the surface). The soil inspection pits 1P, 2P and 3P reveal this denser clay to be poorly structured and slowly permeable. As a result, soil drainage will be impeded to the extent that Wetness Class III or, more commonly, Wetness Class IV is appropriate. When combined with local climatic conditions and topsoil characteristics, this degree of wetness gives rise to a land classification of Subgrade 3b. This limitation (which is more severe than for land graded as Subgrade 3a), will restrict the number of days when the soil is in a suitable condition for cultivations, trafficking by machinery or grazing by livestock without causing structural damage. The flexibility of cropping or stocking on this land, together with the yield potential of crops, will therefore be reduced.

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## SOURCES OF REFERENCE

British Geological Survey (1971) *Sheet No. SP83. Milton Keynes. Solid and Drift Edition.*  
*1:25,000 scale.*

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) *Soils of South East England. 1:250,000 Scale.*

SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils of South East England. Bulletin No. 15.*

SSEW: Harpenden.

## 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 that 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 (eg. 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 that restricts 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 descriptions**

**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.

<b>ARA:</b> Arable	<b>WHT:</b> Wheat	<b>BAR:</b> Barley
<b>CER:</b> Cereals	<b>OAT:</b> Oats	<b>MZE:</b> Maize
<b>OSR:</b> Oilseed rape	<b>BEN:</b> Field Beans	<b>BRA:</b> Brassicae
<b>POT:</b> Potatoes	<b>SBT:</b> Sugar Beet	<b>FCD:</b> Fodder Crops
<b>LIN:</b> Linseed	<b>FRT:</b> Soft and Top Fruit	<b>FLW:</b> Fallow
<b>PGR:</b> Permanent Pasture	<b>LEY:</b> Ley Grass	<b>RGR:</b> Rough Grazing
<b>SCR:</b> Scrub	<b>CFW:</b> Coniferous Woodland	<b>DCW:</b> Deciduous Wood
<b>HTH:</b> Heathland	<b>BOG:</b> Bog or Marsh	<b>FLW:</b> Fallow
<b>PLO:</b> Ploughed	<b>SAS:</b> Set aside	<b>OTH:</b> Other
<b>HRT:</b> Horticultural Crops		

3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.
4. **GLEYSPL:** 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.

<b>MREL:</b> Microrelief limitation	<b>FLOOD:</b> Flood risk	<b>EROSN:</b> Soil erosion risk
<b>EXP:</b> Exposure limitation	<b>FROST:</b> Frost prone	<b>DIST:</b> Disturbed land
<b>CHEM:</b> Chemical limitation		

9. **LIMIT:** The main limitation to land quality. The following abbreviations are used.

<b>OC:</b> Overall Climate	<b>AE:</b> Aspect	<b>EX:</b> Exposure
<b>FR:</b> Frost Risk	<b>GR:</b> Gradient	<b>MR:</b> Microrelief
<b>FL:</b> Flood Risk	<b>TX:</b> Topsoil Texture	<b>DP:</b> Soil Depth
<b>CH:</b> Chemical	<b>WE:</b> Wetness	<b>WK:</b> Workability
<b>DR:</b> Drought	<b>ER:</b> Erosion Risk	<b>WD:</b> Soil Wetness/Droughtiness
<b>ST:</b> Topsoil Stoniness		

## Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations:

<b>S:</b> Sand	<b>LS:</b> Loamy Sand	<b>SL:</b> Sandy Loam
<b>SZL:</b> Sandy Silt Loam	<b>CL:</b> Clay Loam	<b>ZCL:</b> Silty Clay Loam
<b>ZL:</b> Silt Loam	<b>SCL:</b> Sandy Clay Loam	<b>C:</b> Clay
<b>SC:</b> Sandy Clay	<b>ZC:</b> Silty Clay	<b>OL:</b> Organic Loam
<b>P:</b> Peat	<b>SP:</b> Sandy Peat	<b>LP:</b> Loamy Peat
<b>PL:</b> Peaty Loam	<b>PS:</b> Peaty Sand	<b>MZ:</b> 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:

<b>F:</b> Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b> Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b> 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:

<b>HR:</b> all hard rocks and stones	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>CH:</b> chalk
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> soft weathered igneous/metamorphic rock	<b>GH:</b> 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	<b>WK:</b> weakly developed	<b>MD:</b> moderately developed
	<b>ST:</b> strongly developed	
Ped size	<b>F:</b> fine	<b>M:</b> medium
	<b>C:</b> coarse	
Ped shape	<b>S:</b> single grain	<b>M:</b> massive
	<b>GR:</b> granular	<b>AB:</b> angular blocky
	<b>SAB:</b> sub-angular blocky	<b>PR:</b> prismatic
	<b>PL:</b> platy	

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

<b>L:</b> loose	<b>VF:</b> very friable	<b>FR:</b> friable	<b>FM:</b> firm	<b>VM:</b> very firm
<b>EM:</b> extremely firm		<b>EH:</b> extremely hard		

10. **SUBS STR:** Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G:** good **M:** moderate **P:** poor
11. **POR:** Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
12. **IMP:** If the profile is impenetrable to rooting a 'Y' will appear in this column at the 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:

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

SAMPLE NO.	GRID. REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M. REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	SP83603290	OSR N	2	27	48	3	3B	103	1	107	14	3A			WE	3B	SEE 1P
2	SP83803290	OSR		28	45	3	3B	103	1	107	14	3A			WE	3B	SEE 1P
3	SP84003290	PGR		28	50	2	3A	130	28	108	15	2			WE	3A	SEE 1P
4	SP84103285	CER SE	1	35	35	4	3B	94	-8	106	13	3A			WE	3B	SEE 1P
5	SP83303280	OSR NW	1	26	36	4	3B	105	3	103	10	3A			WE	3B	SEE 1P
6	SP83503280	OSR NW	1	30	45	3	3B	109	7	106	13	2			WE	3B	SEE 1P
7	SP83703280	OSR N	1	25	36	4	3B	92	-10	103	10	3A			WE	3B	SEE 2P
8	SP83903280	CER SE	1	30	30	4	3B	87	-15	96	3	3A			WE	3B	SEE 2P
9	SP84103280	CER SE	1	28	28	4	3B	86	-16	95	2	3A			WE	3B	SEE 2P
10	SP82503270	CER		75		1	1	126	24	115	22	2			DR	2	
11	SP82603270	CER NW	1	28	45	3	3B	109	7	107	14	2			WE	3B	SEE 1P
12	SP82803270	CER		30	30	4	3B	94	-8	106	13	3A			WE	3B	SEE 2P
13	SP83003270	PGR NW	2	35	35	4	3B	91	-11	99	6	3A			WE	3B	SEE 2P
14	SP83203270	PGR NW	2	30	45	3	3B	106	4	111	18	3A			WE	3B	SEE 1P
15	SP83403270	OSR NW	1	30	55	3	3B	133	31	111	18	1			WE	3B	SEE 1P
16	SP83603270	OSR		27	45	3	3	109	7	107	14	2			WE	3B	SEE 1P
17	SP83803270	OSR SE	2	28	28	4	3B	97	-5	102	9	3A			WE	3B	SEE 2P
18	SP84003270	CER SE	2	32	32	4	3B	93	-9	104	11	3A			WE	3B	SEE 3P
19	SP84203270	CER SE	2	35	35	4	3B	90	-12	99	6	3A			WE	3B	SEE 2P
20	SP82403260	CER		50	68	2	3A	114	12	116	23	2			WE	3A	
21	SP32503260	CER NW	1	55	70	2	3A	114	12	116	23	2			WE	3A	
22	SP82603260	CER NW	1	28	38	3	3B	100	-2	105	12	3A			WE	3B	SEE 1P
23	SP82703260	CER		45	45	3	3B	112	10	110	17	2			WE	3B	SEE 1P
24	SP82903260	CER NM	3	30	30	4	3B	98	-4	103	10	3A			WE	3B	SEE 2P
25	SP83103260	PGR NW	2	28	35	4	3B	93	-9	104	11	3A			WE	3B	SEE 2P
26	SP83303260	CER		26	26	4	3B	84	-18	90	-3	3A			WE	3B	SEE 2P
27	SP83503260	OSR SE	1	32	32	4	3B	99	-3	104	11	3A			WE	3B	SEE 2P
28	SP83703260	OSR SE	2	34	34	4	3B	100	-2	105	12	3A			WE	3B	SEE 2P
29	SP83903260	OSR S	2	55	55	2	3A	108	6	114	21	2			WE	3A	SEE 4P
30	SP84103260	CER SE	1	26	26	4	3B	82	-20	91	-2	3B			WE	3B	SEE 2P
31	SP84303260	CER SE	2	30	30	4	3B	90	-12	102	9	3A			WE	3B	SEE 2P
32	SP82203250	PGR NW	1	28	75	2	3A	120	18	115	22	2			WE	3A	SEE 4P
33	SP82403250	CER NW	1	28	55	3	3B	111	9	109	16	2			WE	3B	SEE 1P
34	SP82503250	CER NW	1	30	45	3	3B	103	1	108	15	3A			WE	3B	SEE 1P
35	SP82603250	CER		28	55	3	3B	110	8	109	16	2			WE	3B	SEE 1P
36	SP82803250	CER		50	50	2	3A	97	-5	109	16	3A			WE	3A	SEE 4P
37	SP83003250	CER W	2	30	30	4	3B	115	13	106	13	2			WE	3B	SEE 2P
38	SP83203250	CER		30	30	4	3B	93	-9	105	12	3A			WE	3B	SEE 2P
39	SP83403250	OSR SE	1	30	30	4	3B	98	-4	103	10	3A			WE	3B	SEE 2P
40	SP83503250	OSR SE	2	60	60	2	3A	115	13	115	22	2			WE	3A	SEE 4P
41	SP83603250	OSR SE	2	30	30	4	3B	98	-4	103	10	3A			WE	3B	SEE 2P
42	SP83803250	OSR SE	2	42	42	3	3B	105	3	110	17	3A			WE	3B	SEE 1P

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M. REL		EROSN	FROST		CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT		
43	SP84003250	OSR S	2	30	30	4	3B	87	-15	96	3	3A				WE	3B	SEE 2P
44	SP84203250	CER SE	2	30	30	4	3B	97	-5	102	9	3A				WE	3B	SEE 2P
45	SP82103240	PGR		25	25	4	3B	121	19	103	10	2				WE	3B	SEE 3P
46	SP82303240	PGR NW	2	30	45	3	3B	101	-1	106	13	3A				WE	3B	SEE 1P
47	SP82483238	PGR NW	1	25	25	4	3B	105	3	111	18	3A				WE	3B	SEE 3P
48	SP82703240	CER		35	35	4	3B	93	-9	103	10	3A				WE	3B	SEE 3P
49	SP82903240	CER NW	2	42	42	3	3B	92	-10	99	6	3A				WE	3B	SEE 2P
50	SP83103240	CER NW	3	30	30	4	3B	89	-13	95	2	3A				WE	3B	SEE 2P
51	SP83203240	CER NW	2	30	45	3	3B	99	-3	111	18	3A				WE	3B	SEE 1P
52	SP33303240	CER		35	35	4	3B	92	-10	98	5	3A				WE	3B	SEE 2P
53	SP83383238	CER SE	2	32	32	4	3B	102	0	107	14	3A				WE	3B	SEE 2P
54	SP83503235	OSR SE	2	60	60	2	2	122	20	115	22	2				WE	2	SEE 4P
55	SP83603240	OSR SE	2	30	30	4	3B	84	-18	90	-3	3A				WE	3B	IMP 60 SEE 2P
56	SP83703240	OSR SE	2	30	30	4	3B	98	-4	103	10	3A				WE	3B	SEE 2P
57	SP83903240	OSR W	1	64	64	3	3A	112	10	113	20	2				WE	3A	SEE 4P
58	SP84103240	CER SE	1	30	30	4	3B	91	-11	103	10	3A				WE	3B	SEE 2P
59	SP84303240	CER SE	2	30	30	4	3B	100	-2	104	11	3A				WE	3B	SEE 2P
60	SP82203230	PGR NW	2	32	55	3	3B	105	3	110	17	3A				WE	3B	SEE 3P
61	SP82403230	PGR N	1	26	50	3	3B	103	1	107	14	3A				WE	3B	SEE 3P
62	SP82603230	LEY NW	1	30	55	3	3B	105	3	111	18	3A				WE	3B	SEE 3P
63	SP82803230	CER		32	40	3	3B	87	-15	93	0	3A				WE	3B	SEE 3P
64	SP82903230	CER NW	2	38	38	4	3B	96	-6	108	15	3A				WE	3B	DEEP T/S
65	SP83003230	CER NW	4	30	30	4	3B	86	-16	92	-1	3A				WE	3B	SEE 3P
66	SP83203230	CER		30	40	3	3B	87	-15	93	0	3A				WE	3B	SEE 1P
67	SP83303230	CER S	1	28	28	4	3B	90	-12	101	8	3A				WE	3B	SEE 2P
68	SP83403230	CER SE	2	55	55	2	3A	114	12	113	20	2				WE	3A	SEE 4P
69	SP83503230	CER SE	2	28	28	4	3B	97	-5	102	9	3A				WE	3B	SEE 2P
70	SP83603230	OSR S	2	35	55	3	3A	112	10	111	18	2				WE	3A	SEE 4P
71	SP83703230	OSR SE	1	22	22	4	3B	90	-12	102	9	3A				WE	3B	SEE 2P
72	SP83803230	OSR S	2	35	35	4	3B	95	-7	106	13	3A				WE	3B	SEE 2P
73	SP84003230	OSR S	2	30	30	4	3B	87	-15	95	2	3A				WE	3B	SEE 2P
74	SP84203230	CER SE	1	35	50	3	3A	103	1	108	15	3A				WE	3A	SEE 4P
75	SP84403230	CER SE	1	30	40	3	3A	99	-3	104	11	3A				WE	3A	SEE 4P
76	SP82003220	PGR W	2	30	45	3	3B	102	0	106	13	3A				WE	3B	SEE 1P
77	SP82103220	PGR NW	2	27	42	3	3B	93	-9	104	11	3A				WE	3B	SEE 1P
78	SP83203220	PGR W	1	30	58	3	3B	105	3	112	19	3A				WE	3B	SEE 1P
79	SP82503220	LEY NW	1	35	62	3	3B	107	5	114	21	3A				WE	3B	SEE 1P
80	SP82703220	LEY NW	1	30	50	3	3B	105	3	110	17	3A				WE	3B	SEE 1P
81	SP82903220	LEY NW	1	28	55	3	3B	105	3	110	17	3A				WE	3B	SEE 1P
82	SP83003220	CER NW	2	30	30	4	3B	83	-19	89	-4	3A				WE	3B	SEE 2P
83	SP83203220	CER		32	32	4	3B	84	-18	90	-3	3A				WE	3B	SEE 2P
84	SP83303220	CER S	1	30	30	4	3B	107	5	105	12	2				WE	3B	SEE 2P

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	MB	DRT					
85	SP83403220	CER SE	1	35	70	2	3A	114	12	116	23	2		WE	3A	SEE 4P	
86	SP83503220	CER SE	2	32	32	4	3B	108	6	106	13	2		WE	3B	SEE 2P	
87	SP83603220	CER SE	2	30	30	4	3B	98	-4	103	10	3A		WE	3B	SEE 2P	
88	SP83703220	OSR S	2	35	35	4	3B	93	-9	104	11	3A		WE	3B	SEE 2P	
89	SP83903220	OSR		35	35	4	3B	108	6	106	13	2		WE	3B	SEE 2P	
90	SP84103220	OSR S	1	33	33	4	3B	92	-10	104	11	3A		WE	3B	SEE 2P	
91	SP82003210	PGR W	2	33	60	3	3B	106	4	113	20	3A		WE	3B	SEE 1P	
92	SP82203210	PGR NW	1	30	45	3	3B	118	16	109	16	2		WE	3B	SEE 1P	
93	SP82403210	PGR		30	30	4	3B	99	-3	104	11	3A		WE	3B	SEE 3P	
94	SP82603210	LEY NW	1	28	50	3	3B	104	2	109	16	3A		WE	3B	SEE 1P	
95	SP82803210	CER NW	2	30	65	3	3B	106	4	114	21	3A		WE	3B	SEE 1P	
96	SP83003210	PGR		30	55	3	3B	118	16	111	18	2		WE	3B	SEE 1P	
97	SP83203210	CER SE	2	30	30	4	3B	100	-2	105	12	3A		WE	3B	SEE 2P	
98	SP83303210	CER SE	1	35	65	3	3A	109	7	114	21	2		WE	3A	SEE 2P	
99	SP83403210	CER SE	2	50	50	2	3A	106	4	111	18	2		WE	3A	SEE 4P	
100	SP83503210	CER SE	1	30	30	4	3B	104	2	102	9	2		WE	3B	SEE 2P	
101	SP83603210	CER S	1	35	35	4	3B	93	-9	104	11	3A		WE	3B	SEE 2P	
102	SP83803210	CER S	1	32	32	4	3B	87	-15	94	1	3A		WE	3B	SEE 3P	
103	SP84003210	OSR		35	35	4	3B	93	-9	104	11	3A		WE	3B	SEE 2P	
104	SP82203200	PGR NW	2	28	35	4	3B	129	27	107	14	2		WE	3B	SEE 3P	
105	SP82303200	PGR NW	1	24	37	4	3B	91	-11	101	8	3A		WE	3B	SEE 1P	
106	SP82503200	LEY NW	1	36	45	3	3B	104	2	109	16	3A		WE	3B	SEE 1P	
107	SP82703200	LEY N	2	28	55	3	3B	105	3	110	17	3A		WE	3B	SEE 1P	
108	SP82903200	CER		30	45	3	3B	117	15	108	15	2		WE	3B	SEE 1P	
109	SP83303200	CER SE	2	48	48	3	3B	105	3	110	17	3A		WE	3B	SEE 1P	
110	SP83403200	CER SE	1	30	30	4	3B	86	-16	95	2	3A		WE	3B	SEE 2P	
111	SP83503200	CER S	1	30	30	4	3B	91	-11	102	9	3A		WE	3B	SEE 2P	
112	SP83703200	CER S	1	35	35	4	3B	90	-12	98	5	3A		WE	3B	SEE 2P	
113	SP82403190	PGR		30	50	3	3B	118	16	110	17	2		WE	3B	SEE 2P	
114	SP82603190	LEY N	1	28	45	3	3B	102	0	107	14	3A		WE	3B	SEE 3P	
115	SP82803190	PGR		30	45	3	3B	102	0	106	13	3A		WE	3B	SEE 1P	
116	SP83403190	CER		35	50	3	3B	112	10	110	17	2		WE	3B	SEE 1P	
117	SP83603190	CER		35	35	3		94	-8	105	12	3A		WE	3B	SEE 1P	
118	SP82503180	PGR E	1	32	63	3	3B	105	3	113	20	3A		WE	3B	SEE 1P	
119	SP82703180	PGR		30	58	3	3B	105	3	111	18	3A		WE	3B	SEE 1P	
120	SP82603170	PGR E	1	30	30	4	3B	90	-12	101	8	3A		WE	3B	SEE 3P	
P1	SP83603270	OSR		27	50	3	3B	96	-6	107	14	3A		WE	3B	PIT TO 70	
P2	SP83203250	CER NW	2	28	28	4	3B	100	-2	102	9	3A		WE	3B	PIT TO 83	
P3	SP82403210	PGR		28	28	4	3B	102	0	107	14	3A		WE	3B	PIT TO 75	
P4	SP83403220	CER S	1	28	44	3	3A	107	5	115	22	2		WE	3A	PIT TO 80	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/		SUBS	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR
1	0-27	HCL	25Y 42 43						0	0	HR	2			
	27-48	C	25Y 53 54 10YR56		C			Y	0	0	HR	3	M		Y
	48-80	C	25Y 61 63 10YR58		M			Y	0	0	HR	5	P		Y Y
2	0-28	HCL	25Y 43						0	0	HR	1			
	28-45	C	25Y 53 10YR56		C			Y	0	0	HR	3	M		
	45-80	C	25Y 61 63 10YR58		M			Y	0	0	HR	5	P		Y Y
3	0-28	HCL	25Y 41 42						0	0	HR	3			
	28-50	C	25Y 53 10YR56		C				0	0	HR	3	M		
	50-120	C	25Y 5152 10YR58		M			Y	0	0	HR	5	P		Y Y
4	0-35	HCL	25Y 4142						0	0	HR	2			Y
	35-70	C	25Y 5261 10YR58		M			Y	0	0	CH	5	P		Y Y
5	0-26	HCL	10YR42						0	0	HR	2			
	26-36	C	25Y 53 10YR58		C D			Y	0	0	CH	5	M		Y
	36-90	C	25Y 62 10YR5868		M D			Y	0	0	CH	15	P		Y Y
6	0-30	HCL	25Y 42						1	0	HR	3			
	30-45	C	25Y 53 10YR56		C D			Y	0	0	CH	5	M		Y
	45-90	C	25Y 6163 10YR58		M D			Y	0	0	CH	15	P		Y Y
7	0-25	HCL	25Y 4243						0	0	HR	2			
	25-36	C	25Y 53 10YR56		C			Y	0	0	HR	3	M		Y
	36-70	C	25Y 6163 10YR58		M			Y	0	0	HR	5	P		Y Y
8	0-30	HCL	25Y 42						0	0	HR	2			Y
	30-65	C	25Y 5261 10YR58		M D			Y	0	0	CH	5	P		Y Y
9	0-28	HCL	25Y 42 10YR56		F				0	0	HR	2			
	28-65	C	25Y 5261 10YR58		M			Y	0	0	CH	5	P		Y Y
10	0-30	MCL	10YR43						0	0	HR	2			
	30-75	C	10YR54 10YR58		C D			S	0	0	HR	3	M		
	75-100	SCL	25Y 5254 10YR58		M D			Y	0	0	HR	10	M		
11	0-28	HCL	10YR42						0	0	HR	3			
	28-45	C	25Y 5253 10YR56		C D			Y	0	0	CH	5	M		Y
	45-90	C	25Y 6163 10YR58		M D			Y	0	0	CH	10	P		Y Y
12	0-30	HCL	10YR42						0	0		0			
	30-50	C	25Y 52 25Y 56		C			Y	0	0		0	P		Y
	50-70	C	25Y52 25Y 56		M			Y	0	0		0	P		Y
13	0-35	HCL	10YR42 10YR46		F				0	0	HR	2			
	35-65	C	25Y 5152 10YR58		M			Y	0	0	CH	3	P		Y Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
14	0-30	HCL	10YR42	10YR4656	C			Y	0	0	0						
	30-45	C	25Y 5253	10YR56	C			Y	0	0	0	M					
	45-80	C	25Y 6163	10YR58	M			Y	0	0	0	P			Y		
15	0-30	HCL	10YR42						0	0	HR	2					
	30-55	C	25Y 5354	10YR56	C	D		Y	0	0	HR	2	M				
	55-120	C	25Y5161	10YR58	M	D		Y	0	0	HR	2	P			Y	
16	0-27	HCL	10YR42						0	0	HR	2					
	27-45	C	25Y 5354	10YR56	C	F		Y	0	0	CH	5	M				Y
	45-90	C	25Y 6162	10YR58	C	D		Y	0	0	CH	10	P			Y	Y
17	0-28	C	10YR42						0	0		0					
	28-80	C	25Y53	10YR58	C			Y	0	0		0	P			Y	Y
18	0-32	HCL	25Y 42						0	0	HR	2					Y
	32-45	C	25Y 5253	10YR5658	C			Y	0	0	HR	2	P			Y	Y
	45-70	C	25Y 5261	10YR58	C			Y	0	0	CH	5	P			Y	Y
19	0-35	HCL	25Y 42						0	0	HR	3					Y
	35-65	C	25Y 5261	10YR58	M			Y	0	0	CH	5	P			Y	Y
20	0-32	HCL	10YR42						0	0	HR	2					
	32-50	C	25Y 54	10YR56	F	D			0	0	HR	2	M				
	50-68	C	25Y 5354	10YR56	C	D		Y	0	0	CH	3	M				Y
	68-90	C	25Y 6163	10YR58	M	D		Y	0	0	CH	10	P			Y	Y
21	0-35	HCL	10YR42						0	0	HR	3					
	35-55	C	25Y 54	10YR56	F	D			0	0	HR	3	M				
	55-70	C	25Y 5354	10YR56	C	D		Y	0	0	CH	3	M				Y
	70-90	C	25Y 6163	10YR58	M	D		Y	0	0	CH	10	P			Y	Y
22	0-28	HCL	10YR43						0	0	HR	2					
	28-38	C	10YR5361	10YR56	C	F		Y	0	0	HR	2	M				
	38-80	C	25Y 5161	10YR6668	M	D		Y	0	0	HR	5	P			Y	Y
23	0-30	HCL	10YR43						0	0	HR	1					
	30-45	C	10YR53						0	0		0	M				
	45-70	C	10YR53	10YR56	C			Y	0	0		0	P			Y	
	70-90	C	25Y 63	10YR56	C			Y	0	0	CH	2	P			Y	Y
24	0-30	C	10YR42						0	0		0					
	30-60	C	10YR53	10YR56	C			Y	0	0	CH	1	P			Y	Y
	60-80	C	25Y 62	10YR56	M			Y	0	0	CH	2	P			Y	Y
25	0-28	HCL	10YR42	10YR5646	C			Y	0	0		0					
	28-35	C	10YR5352	10YR56	C			Y	0	0	HR	2	M				
	35-70	C	25YR5162	10YR58	M			Y	0	0	HR	5	P			Y	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SJSB					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
26	0-26	HCL	25Y 4243	10YR56		F		0	0	0							
	26-60	C	25Y 6152	10YR58		M		Y	0	0	HR	2		P			Y
27	0-32	C	25Y42						0	0		0					Y
	32-80	C	25Y5361	10YR58		C		Y	0	0		0		P			Y Y
28	0-34	C	25Y42						0	0		0					Y
	34-80	C	25Y53	10YR58		C		Y	0	0		0		P			Y Y
29	0-30	HCL	25Y42						0	0		0					
	30-55	C	25Y5363						0	0		0		M			
	55-80	C	10YR52	75YR58		C		Y	0	0		0		P			Y
30	0-26	C	25Y 4142						0	0	HR	3					Y
	26-65	C	25Y 5261	10YR58		M		Y	0	0	CH	5		P			Y Y
31	0-30	C	25Y42						0	0	HR	1					Y
	30-70	C	25Y53	10YR58		C		Y	0	0	CH	5		P			Y Y
32	0-28	HCL	10YR43						0	0	HR	2					
	28-50	C	10YR5354	10YR56		C D		Y	0	0	HR	2		M			
	50-75	C	10YR5253	10YR58		C D		Y	0	0	HR	2		M			
	75-100	C	10YR6263	10YR58		M D		Y	0	0	HR	5		P			Y Y
33	0-28	HCL	25Y 42						0	0	HR	3					
	28-55	C	25Y 5354	10YR56		C D		Y	0	0	HR	3		M			Y
	55-90	C	25Y 6163	10YR58		M D		Y	0	0	CH	10		P			Y Y
34	0-30	HCL	10YR43						0	0	HR	2					
	30-45	C	10YR5354	10YR56		C F		Y	0	0	HR	2		M			
	45-80	C	25Y 5152	10YR58		M D		Y	0	0	HR	5		P			Y Y
35	0-28	HCL	10YR42						1	0	HR	3					
	28-55	C	25Y 5354	10YR56		C F		Y	0	0	CH	5		M			Y
	55-90	C	25Y 6163	10YR58		M D		Y	0	0	CH	10		P			Y Y
36	0-30	C	10YR43						0	0		0					
	30-50	C	10YR54						0	0		0		M			
	50-70	C	75YR53	10YR56		C		Y	0	0		0		P			Y
37	0-30	HCL	10YR42						0	0		0					
	30-65	C	25Y 53	10YR56		C		Y	0	0		0		P			Y
	65-80	C	25Y 62	10YR56		M		Y	0	0	CH	2		P			Y Y
	80-100	C	25Y 62	10YR56		M		Y	0	0	CH	5		P			Y Y
38	0-30	HCL	25Y 4243	10YR56		F			0	0	HR	1					
	30-70	C	25Y 6152	10YR58		M		Y	0	0		0		P			Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/		SUBS			
				COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
39	0-30	C	25Y43						0	0	0						Y
	30-50	C	25Y5262	10YR58	C			Y	0	0	0		P			Y	Y
	50-80	C	25Y52	10YR58	M			Y	0	0	0		P			Y	Y
40	0-30	HCL	25Y42						0	0	0						
	30-60	C	25Y54						0	0	0		M				Y
	60-90	C	25Y53	10YR58	C			Y	0	0	CH	2	P			Y	Y
41	0-30	C	10YR42						0	0	0						
	30-80	C	25Y53	10YR58	C			Y	0	0	0		P			Y	
42	0-30	HCL	10YR42						0	0	0						
	30-42	C	25Y53	10YR58	F				0	0	0		M				Y
	42-80	C	25Y52	10YR58	M			Y	0	0	0		P			Y	Y
43	0-30	HCL	25Y 42						0	0	HR	2					Y
	30-65	C	25Y 6152	10YR58	M			Y	0	0	CH	5	P			Y	Y
44	0-30	C	25Y42						0	0	HR	1					Y
	30-80	C	25Y52	10YR58	C			Y	0	0	CH	5	P			Y	Y
45	0-25	HCL	10YR4142						0	0	HR	2					
	25-75	C	10YR5253	10YR56	C D			Y	0	0	0		P			Y	
	75-120	C	10YR5254	75YR58	M D			Y	0	0	HR	15	P			Y	
46	0-30	HCL	10YR43						0	0	HR	2					
	30-45	C	10YR5253	10YR56	C D			Y	0	0	HR	2	M				
	45-80	C	25Y 6163	10YR68	M D			Y	0	0	HR	10	P			Y	Y
47	0-25	HCL	10YR443						0	0	HR	2					
	25-58	C	10YR5361	10YR56	C F			Y	0	0	HR	2	P				Y
	58-80	C	25Y 5162	10YR5658	M D			Y	0	0	HR	3	P			Y	Y
48	0-35	C	10YR42						0	0	HR	1					
	35-42	C	25Y 5362	10YR56	C			Y	0	0	CH	1	P			Y	Y
	42-62	C	25Y 6161	10YR56	C			Y	0	0	CH	1	P			Y	Y
49	0-32	HCL	10YR42						0	0	HR	1					
	32-42	C	10YR53						0	0	HR	1	M				
	42-62	C	10YR53	10YR56	C			Y	0	0	HR	1	P			Y	
50	0-30	HZCL	10YR42						0	0	HR	1					
	30-55	C	10YR53	10YR56	C			Y	0	0	HR	1	P			Y	
	55-60	C	25Y 63	10YR56	C			Y	0	0	CH	1	P			Y	
51	0-30	HCL	10YR42						0	0	0						
	30-45	C	10YR53	10YR56	C			Y	0	0	0		M				
	45-70	C	25Y 62	10YR56	M			Y	0	0	0		P			Y	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED		----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
52	0-35	HZCL	10YR42						0	0	HR	1					
	35-60	C	25Y 53	10YR56	M			Y	0	0	CH	1	P		Y	Y	
53	0-32	HCL	25Y42						0	0		0					Y
	32-80	C	25Y5262	10YR58	C			Y	0	0		0	P		Y	Y	
54	0-30	HCL	25Y42						0	0		0					Y
	30-60	C	25Y54						0	0		0	M				Y
	60-100	C	25Y53	10YR58	C			Y	0	0		0	P		Y	Y	
55	0-30	C	25Y42						0	0	HR	1					Y
	30-60	C	25Y54	10YR58	C			Y	0	0		0	P		Y	Y	
56	0-30	C	25Y42						0	0		0					Y
	30-80	C	25Y52	10YR58	C			Y	0	0		0	P		Y	Y	
57	0-30	HCL	25Y 42						0	0	HR	2					Y
	30-64	C	25Y 5354	10YR56	F F				0	0	HR	2	M				Y
	64-90	C	25Y 5261	10YR58	M			Y	0	0	CH	5	P		Y	Y	
58	0-30	C	25Y42						0	0		0					Y
	30-70	C	25Y5363	10YR58	C			Y	0	0		0	P		Y		
59	0-30	HCL	25Y42						0	0	HR	2					Y
	30-80	C	25Y53	10YR58	C			Y	0	0	CH	5	P		Y	Y	
60	0-32	HCL	10YR43	7					0	0	HR	2					Y
	32-55	C	10YR53	10YR56	C F			Y	0	0	HR	2	M				Y
	55-80	C	25Y 6163	10YR68	M D			Y	0	0	HR	10	P		Y	Y	
61	0-26	HCL	10YR43						0	0	HR	5					Y
	26-50	C	25Y 53	10YR56	C F			Y	0	0	HR	2	M				Y
	50-80	C	25Y 5161	10YR5658	M D			Y	0	0	HR	3	P		Y	Y	
62	0-30	HCL	10YR43					N	0	0	HR	2					Y
	30-55	C	25Y 53	10YR5661	C F			Y	0	0	HR	2	M				Y
	55-80	C	25Y 53	10YR5651	M D			Y	0	0	HR	5	P		Y	Y	
63	0-32	C	10YR42						0	0	HR	1					Y
	32-40	C	10YR53	10YR56	C			Y	0	0		0	M				Y
	40-60	C	25Y 53	10YR56	C			Y	0	0		0	P		Y		
64	0-38	HCL	25Y 4243						0	0		0					Y
	38-70	C	25Y 6163	10YR58	M			Y	0	0	CH	5	P		Y	Y	
65	0-30	HCL	10YR42						0	0	HR	1					Y
	30-60	C	25Y53	10YR56	M			Y	0	0		0	P		Y	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
66	0-30	C	10YR42						0	0	HR	1					
	30-40	C	10YR53	10YR56	C			Y	0	0		0	M				Y
	40-60	C	10YR53	10YR56	M			Y	0	0		0	P			Y	Y
67	0-28	HCL	25Y 42						0	0	HR	3					Y
	28-40	C	25Y 5352	10YR56	C F			Y	0	0	CH	2	P			Y	Y
	40-70	C	25Y 6152	10YR5658	M			Y	0	0	CH	5	P			Y	Y
68	0-32	HCL	10Y42						0	0	HR	1					
	32-55	C	25Y54						0	0		0	M				Y
	55-90	C	25Y54	10YR58	C			S	0	0		0	P			Y	Y
69	0-28	C	25Y42						0	0		0					Y
	28-60	C	25Y53	10YR58	C			Y	0	0		0	P			Y	Y
	60-80	C	25Y5152	10YR58	C			Y	0	0		0	P			Y	Y
70	0-35	HCL	25Y 4243						0	0	HR	2					Y
	35-55	C	25Y 5354	10YR56	C F			Y	0	0	HR	3	M				Y
	55-90	C	25Y 6162	10YR58	M			Y	0	0	CH	5	P			Y	Y
71	0-22	HCL	25Y42						0	0		0					Y
	22-70	C	25Y5262	10YR58	C			Y	0	0		0	P			Y	Y
72	0-35	HCL	25Y 42						0	0	HR	2					Y
	35-70	C	25Y 5253	10YR58	M			Y	0	0	CH	3	P			Y	Y
73	0-30	HCL	25Y 42						0	0	HR	3					Y
	30-65	C	25Y 6152	10YR58	C			Y	0	0	CH	5	P			Y	Y
74	0-35	C	25Y42						0	0	HR	2					Y
	35-50	C	25Y5354	10YR58	C F			Y	0	0	CH	5	M				Y
	50-80	C	25Y5361	10YR58	C D			Y	0	0	CH	5	P			Y	Y
75	0-30	C	25Y42						0	0	HR	1					Y
	30-40	C	25Y5354	10YR58	C			Y	0	0	HR	2	M				Y
	40-80	C	25Y5361	10YR58	C			Y	0	0	HR	2	P			Y	Y
76	0-30	HCL	10YR43						0	0	HR	2					
	30-45	C	10YR53	10YR56	C F			Y	0	0	HR	2	M				
	45-80	C	25Y 6163	10YR68	M D			Y	0	0	HR	8	P			Y	Y
77	0-27	HCL	10YR43						0	0	HR	2					
	27-42	C	10YR6352	10YR66	C F			Y	0	0	HR	3	M				Y
	42-70	C	25Y 6163	10YR68	M D			Y	0	0	HR	10	P			Y	Y
78	0-30	HCL	10YR43						0	0	HR	2					
	30-58	C	25Y 53	10YR56	C F			Y	0	0	HR	2	M				
	58-80	C	25Y 5261	10YR5856	M D			Y	0	0	HR	4	P			Y	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
79	0-35	HCL	10YR43					0	0	HR	2						
	35-62	C	25Y 5354	10YR56	C	F		S	0	0	HR	2		M			
	62-80	C	25Y 5152	10YR56	M	D		Y	0	0	HR	5		P		Y	Y
80	0-30	HCL	10YR43					0	0	HR	2						
	30-50	C	10YR53	10YR56	M	F		Y	0	0	HR	2		M			
	50-80	C	10YR53	10YR5856	M	D		Y	0	0	HR	2		P		Y	
81	0-28	HCL	10YR53					0	0	HR	2						Y
	28-55	C	25Y 5354	10YR56	M	D		Y	0	0	HR	2		M			Y
	55-80	C	25Y 5251	10YR5856	M	D		Y	0	0	HR	5		P		Y	Y
82	0-30	C	10YR42					0	0	HR	1						
	30-40	C	10YR53	10YR56	C			Y	0	0		0		P		Y	
	40-60	C	10YR53	10YR56	M			Y	0	0	CH	1		P		Y	Y
83	0-32	C	10YR42					0	0	HR	1						
	32-60	C	10YR53	10YR56	M			Y	0	0	CH	1		P		Y	Y
84	0-30	HCL	25Y42					0	0	HR	1						
	30-60	C	25Y54	10YR58	C			S	0	0		0		P		Y	Y
	60-90	C	05Y71	10YR56	M			Y	0	0		0		P		Y	Y
85	0-35	HCL	25Y 42					0	0	HR	2						
	35-70	C	25Y 5354	10YR56	M			Y	0	0	CH	2		M			Y
	70-90	C	25Y 5161	10YR5658	M			Y	0	0	CH	5		P		Y	Y
86	0-32	HCL	25Y42					0	0	HR	2						
	32-50	C	25Y53	10YR58	C			Y	0	0		0		P		Y	Y
	50-90	C	25Y62	10YR68	M			Y	0	0		0		P		Y	Y
87	0-30	C	25Y4252					0	0	HR	1						Y
	30-80	C	25Y62	10YR58	C			Y	0	0		0		P		Y	Y
88	0-35	HCL	25Y 4142					0	0	HR	3						Y
	35-70	C	25Y 5161	10YR58	M	D		Y	0	0	CH	5		P		Y	Y
89	0-35	HCL	25Y 42					0	0	HR	2						
	35-70	C	25Y 5352	10YR58	M	D		Y	0	0	HR	2		P		Y	Y
	70-90	C	25Y 5161	10YR58	M			Y	0	0	HR	5		P		Y	Y
90	0-33	HCL	25Y 42					0	0	HR	2						Y
	33-70	C	25Y 5262	10YR58	M			Y	0	0	CH	5		P		Y	Y
91	0-33	HCL	10YR4243					0	0	HR	2						
	33-60	C	10YR5354	10YR56	C	F		Y	0	0	HR	2		M			
	60-80	C	10YR6263	10YR6858	C	D		Y	0	0	HR	5		P		Y	Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP
92	0-30	HCL	10YR43					0	0	HR	2					
	30-45	C	10YR53	10YR56	C	D		Y	0	0	0		M			
	45-70	C	25Y 51	10YR58	M	D		Y	0	0	0		P		Y	
	70-100	C	25Y 6152	10YR5868	M	D		Y	0	0	HR	5	P		Y	Y
93	0-30	HCL	10YR4243	10YR46	F	D			0	0	HR	2				
	30-65	C	10YR5253	10YR56	C	D		Y	0	0	HR	2		P		Y
	65-80	C	25Y 5163	10YR58	M	D		Y	0	0	HR	8		P		Y
94	0-28	HCL	10YR43						0	0	HR	2				
	28-50	C	10YR53	10YR56	M	D		Y	0	0	HR	2		M		
	50-80	C	10YR53	10YR56	M	D		Y	0	0	HR	3		P		Y
95	0-30	HCL	10YR5352						0	0	HR	2				
	30-65	C	10YR5161	10YR5658	M	F			0	0	HR	2		M		
	65-80	C	25Y 53	10YR5668	M	D		Y	0	0	HR	5		P		Y
96	0-30	HCL	10YR43						0	0	HR	2				
	30-55	C	10YR53	10YR68	C	D		Y	0	0	HR	2		M		Y
	55-100	C	25Y 6253	10YR58	M	D		Y	0	0	HR	5		P		Y
97	0-30	HCL	25Y42						0	0	HR	1				
	30-80	C	25Y54	10YR58	C			S	0	0	0			P		Y
98	0-35	HCL	25Y 42						0	0	HR	3				Y
	35-65	C	25Y 5354	10YR56	C	F		Y	0	0	HR	3		M		Y
	65-85	C	25Y 6152	10YR58	M			Y	0	0	CH	5		P		Y
99	0-32	HCL	25Y42						0	0	HR	2				
	32-50	C	25Y54						0	0	0			M		Y
	50-80	C	25Y53	10YR58	C			Y	0	0	0			P		Y
100	0-30	HCL	25Y 42						0	0	HR	3				Y
	30-60	C	25Y 5253	10YR5658	M			Y	0	0	HR	5		P		Y
	60-90	C	25Y 5161	10YR58	M			Y	0	0	CH	5		P		Y
101	0-35	HCL	25Y 42						0	0	HR	3				Y
	35-70	C	25Y 6162	10YR58	M			Y	0	0	HR	5		P		Y
102	0-32	HCL	25Y 42						0	0	HR	2				Y
	32-65	HCL	25Y 52	10YR58	M			Y	0	0	HR	5		P		Y
103	0-35	HCL	25Y 42						0	0	HR	2				Y
	35-70	C	25Y 5261	10YR58	M			Y	0	0	CH	10		P		Y
104	0-28	HCL	10YR4243	10YR46	F	F			0	0	0					
	28-35	C	10YR53	10YR58	C	F		Y	0	0	0			M		
	35-75	C	10YR52	10YR58	C	D		Y	0	0	0			P		Y
	75-120	C	25Y 52	75YR58	M	D		Y	0	0	HR	5		P		Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
105	0-24	HCL	10YR43						0	0	HR	2					
	24-37	C	10YR5253	10YR58	C	D		Y	0	0	HR	2	M				
	37-70	C	25Y 6163	10YR58	M	D		Y	0	0	HR	10	P		Y	Y	
106	0-36	HCL	10YR43						0	0	HR	2					
	36-45	C	25Y 53	10YR56	C	D		Y	0	0	HR	2	M				
	45-80	C	25Y 53	10YR56	M	D		Y	0	0	HR	3	P		Y	Y	
107	0-28	HCL	10YR43						0	0	HR	2					
	28-55	C	10YR53	10YR66	C	F		Y	0	0	HR	2	M				
	55-80	C	25Y 63	10YR56	M	D		Y	0	0	HR	5	P		Y	Y	
108	0-30	HCL	10YR43						0	0	HR	2					
	30-45	C	10YR5354	10YR56	C	D		Y	0	0	HR	2	M				
	45-100	C	25Y 5253	10YR58	C	D		Y	0	0	HR	3	P		Y		
109	0-30	HCL	25Y42						0	0	HR	2					Y
	30-48	C	10YR54	10YR58	F				0	0		0	M				Y
	48-80	C	25Y53	10YR58	C			Y	0	0		0	P		Y	Y	
110	0-30	HCL	25Y 42						0	0	HR	3					Y
	30-65	C	25Y 6152	10YR58	M			Y	0	0	CH	5	P		Y	Y	
111	0-30	HCL	25Y 42						0	0	HR	2					
	30-70	C	25Y 5152	10YR4656	C			Y	0	0	HR	5	P		Y	Y	
112	0-35	HCL	25Y 42						0	0	HR	3					Y
	35-65	C	25Y 6153	10YR58	M	D		Y	0	0	HR	5	P		Y	Y	
113	0-30	HCL	10YR43	10YR46	F	D			0	0	HR	2					
	30-50	C	10YR5352	10YR58	C	D		Y	0	0	HR	2	M				
	50-75	C	25Y 52	10YR58	M	D		Y	0	0	HR	2	P		Y		
	75-100	C	25Y 6163	10YR5868	M	D		Y	0	0	HR	5	P		Y	Y	
114	0-28	HCL	10YR43						0	0	HR	2					
	28-45	C	25Y 54	10YR5661	C	F		Y	0	0	HR	2	M				
	45-80	C	25Y 53	10YR6256	M	D		Y	0	0	HR	5	P		Y	Y	
115	0-30	HCL	10YR43						0	0	HR	2					
	30-45	C	10YR53	10YR56	C	F		Y	0	0		0	M				
	45-80	C	25Y 6163	10YR58	M	D		Y	0	0	HR	10	P		Y	Y	
116	0-35	HCL	25Y 4142						0	0	HR	3					Y
	35-50	C	25Y 53	10YR56	C			Y	0	0	CH	3	M				Y
	50-90	C	25Y 6163	10YR5658	M			Y	0	0	CH	3	P		Y	Y	
117	0-35	HCL	25Y 42						0	0	HR	2					Y
	35-50	C	25Y 5253	10YR5658	C			Y	0	0	CH	2	P		Y	Y	
	50-70	C	25Y 6162	10YR58	M	D		Y	0	0	HR	5	P		Y	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----				STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT		GLE	>2	>6	LITH		TOT	STR	POR		IMP	SPL
118	0-32	HCL	10YR4342	10YR46	F	D			0	0	HR	2						
	32-63	C	10YR5253	10YR56	M	D		Y	0	0	HR	3		M				
	63-80	C	25Y 5153	10YR58	M	D		Y	0	0	HR	10		P		Y	Y	
119	0-30	HCL	10YR4243						0	0	HR	2						
	30-58	C	10YR5354	10YR56	C	F		Y	0	0	HR	2		M				
	58-80	C	25Y 6163	10YR68	M	D		Y	0	0	HR	10		P		Y	Y	
120	0-30	MCL	10YR4243						0	0	HR	2						
	30-70	C	25Y 6163	10YR68	C	D		Y	0	0	HR	8		P		Y	Y	
P1	0-27	HCL	25Y 4243						0	0	HR	3						
	27-50	C	25Y 53	10YR56	C			Y	0	0	HR	5	MDMAB	FM	M		Y	loose, porous
	50-70	C	25Y 6162	10YR58	M			Y	0	0	HR	5	MDCAB	FM	P	Y	Y	plastic
P2	0-28	HCL	25Y 4243	10YR46	C				0	0	HR	2						
	28-59	C	25Y 5161	10YR58	M			Y	0	0	HR	2	MDCAB	FM	P	Y	Y	dense, firm
	59-83	C	25Y 61	10YR58	M			Y	0	0	HR	5	MASSVE	FM	P	Y	Y	plastic
P3	0-28	HCL	10YR43						0	0	HR	2						
	28-45	C	25Y 5352	10YR56	C	F	25Y 52	Y	0	0	HR	2	MDCAB	FR	M	Y	Y	porous
	45-58	C	25Y 5351	10YR56	C	D	25Y 53	Y	0	0		0	STCAB	FM	P	Y	Y	dense
	58-80	C	25Y 6163	10YR66	M	D	25Y 62	Y	0	0	HR	10	MDCAB	FM	P	Y	Y	plastic
P4	0-28	HCL	10YR43						0	0	HR	2					Y	
	28-44	C	10YR5354	10YR56	C	F		Y	0	0	HR	2	MDMAB	FM	M		Y	porous
	44-58	C	25Y 5361	10YR56	C	D	25Y 5262	Y	0	0	HR	5	WKMBAB	FM	P	Y	Y	+8%ch dense
	58-80	C	25Y 6361	10YR56	M	D	25Y 52	Y	0	0	HR	8	WKMBAB	FM	P	Y	Y	+6%ch plastic