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SURREY HEATH DISTRICT LOCAL PLAN REVIEW
Site 5: Land East of Benner Lane, West End, Surrey
Agricultural Land Classification
ALC Map and Summary Report

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Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

SURREY HEATH DISTRICT LOCAL PLAN REVIEW
SITES 5: LAND EAST OF BENNER LANE, WEST END, SURREY

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 30.9 hectares of land located to the east of Beldam Bridge Road and Benner Lane, and south of Fairfield Lane to the east of West End near Guildford in Surrey. The survey was carried out during March 1997.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit, in Reading, in connection with the Surrey Heath District Local Plan Review. The results of this survey supersede any previous ALC information for this land.

3. Prior to 1 April 1997, the work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. After this date, the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA, Reading). 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 agricultural land at this site was either permanent grazing or unmanaged grassland. Within the site there are substantial areas of 'Other Land'. These comprise a school and its playing fields and a number of dwellings with substantial gardens. However, the majority of this area comprises an abandoned tree nursery, much of which was impenetrable at the time of survey due to the size and density of trees and unkempt undergrowth.

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 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	8.8	100	28.5
Other land	22.1	N/A	71.5
Total surveyed area	8.8	100	28.5
Total site area	30.9	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare of surveyed agricultural land. A total of 18 borings and two soil pits were described.

8. The agricultural land on this site has been classified as Grade 2 (very good quality). The limitations to land quality include soil droughtiness and soil wetness.

9. The land at this site is principally limited by soil droughtiness. Soils commonly comprise light loamy topsoils overlying similar and occasionally slightly heavier medium loamy subsoils. Soil droughtiness may affect plant growth and yield, as the supply of available water may be deficient, especially in drier years. In addition, many of these soils also exhibit some signs of soil wetness which may adversely affect plant growth, mechanised operations or stocking.

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 below, these were obtained from the published 5km grid datasets using standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 953 608	SU 950 612
Altitude	m, AOD	40	45
Accumulated Temperature	day°C (Jan-June)	1478	1473
Average Annual Rainfall	mm	690	692
Field Capacity Days	days	144	144
Moisture Deficit, Wheat	mm	114	114
Moisture Deficit, Potatoes	mm	110	109
Overall climatic grade	N/A	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 mean that there is no overall climatic limitation. Other local climatic factors such as exposure and frost risk are also believed not to affect the site. The site is climatically Grade 1.

Site

15. The site lies at altitudes in the range 30-45m AOD. The land across the northern part of the site is flat and around 45m. Towards the centre of the site, the landscape becomes more undulating. In the south of the site, the land becomes level again at a lower altitude (30m) than in the north. None of the slopes on the site were of sufficient gradient to adversely affect land quality.

Geology and soils

16. The published geological information for the site (BGS, 1976 and 1981) shows the site to be underlain by Bracklesham Beds.

17. The most detailed published soils information for the site (SSEW, 1983 and 1984) shows the site to comprise soils of the Wickham 3 association. These are described as, 'Slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils, and similar more permeable soils with slight waterlogging. Some deep coarse loamy soils affected by groundwater. Landslips with irregular terrain locally.' (SSEW, 1983). Soils of this broad type were found on this 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 details of the soils data are presented in Appendix III.

Grade 2

20. Land of very good quality has been mapped across the surveyed agricultural land on this site. The principal limitation is principally soil droughtiness, although soil wetness is equally limiting at a number of locations.

21. Within the site there is essentially a single, but variable, soil type, especially in the lower subsoil. It is characterised by the soil pit descriptions 1P to 4P inclusive. The variability is indicated by the fact that although only two pits were dug four separate descriptions could be made from the observed profiles. Over the site as a whole, the majority of the topsoils comprise either a fine sandy loam or medium sandy loam, occasionally loamy fine sand. Many of the topsoils were gleyed and typically very slightly stony (up to 5% v/v total flints). The

majority of the upper subsoil horizons are similar in texture, with the addition of fine sand textures in some areas. The upper subsoils also contain up to a maximum of 10% v/v total flints and were virtually all gleyed. In the lower subsoil stoneless heavier sandy clay loam, heavy clay loam and clay textures were commonly encountered; these were found to be slowly permeable.

22. The coarse nature of the majority of the upper subsoils causes them to be deficient in terms of water holding capacity especially with respect to potatoes, hence these profiles are limited to Grade 2 on the basis of soil droughtiness in the local climate. This may affect plant growth, yield and development, especially in drier years. Wetness class varies from well drained (Wetness Class I) to imperfectly drained (Wetness Class III). Given the light nature of the topsoils most of the profiles, classified as Wetness Class I and II, have no wetness limitation. However, where the slowly permeable horizons are higher in the profile, equating to Wetness Class III then some profiles can also be graded no higher than Grade 2 on the basis of a minor wetness limitation. . This can restrict land utilisation by reducing the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock as well as adversely affecting crop growth and development.

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SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet 285, Aldershot. Drift Edition. 1:50 000. Scale.* BGS: London.

British Geological Survey (1981) *Sheet 269, Windsor. Solid and Drift Edition. 1:50 000. 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.

Meteorological 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

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used:

ARA:	Arable	**WHT:**	Wheat	**BAR:**	Barley
CER:	Cereals	**OAT:**	Oats	**MZE:**	Maize
OSR:	Oilseed rape	**BEN:**	Field beans	**BRA:**	Brassicae
POT:	Potatoes	**SBT:**	Sugar beet	**FCD:**	Fodder crops
LIN:	Linseed	**FRT:**	Soft and top fruit	**FLW:**	Fallow
PGR:	Permanent pasture	**LEY:**	Ley grass	**RGR:**	Rough grazing
SCR:	Scrub	**CFW:**	Coniferous woodland	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

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

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

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

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

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

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column:

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

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

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

Soil Pits and Auger Borings

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

S:	Sand	**LS**:	Loamy Sand	**SL**:	Sandy Loam
SZL:	Sandy Silt Loam	**CL**:	Clay Loam	**ZCL**:	Silty Clay Loam
ZL:	Silt Loam	**SCL**:	Sandy Clay Loam	**C**:	Clay
SC:	Sandy Clay	**ZC**:	Silty Clay	**OL**:	Organic Loam
P:	Peat	**SP**:	Sandy Peat	**LP**:	Loamy Peat
PL:	Peaty Loam	**PS**:	Peaty Sand	**MZ**:	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:
M: Medium (<27% clay) **H**: Heavy (27-35% clay)

2. **MOTTLE COL**: Mottle colour using Munsell notation.

3. **MOTTLE ABUN**: Mottle abundance, expressed as a percentage of the matrix or surface described:

F: few <2% **C**: common 2-20% **M**: many 20-40% **VM**: very many 40% +

4. **MOTTLE CONT**: Mottle contrast:

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL**: Ped face colour using Munsell notation.

6. **GLEY**: If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH**: Stone Lithology - one of the following is used:

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

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

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

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

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

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

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

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

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

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

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

15. Other notations:

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

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 1P

Grid Reference: SU95176130 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	LFS	10YR42 00	0	2	HR	C				
30- 56	FSL	10YR42 00	0	0		C	MDVCPL	FR	M	
56- 79	FSL	25Y 63 66	0	10	HR	M	MDCSAB	FR	M	
79-120	C	25Y 62 00	0	10	HR	M	STVCPL	FM	P	

Wetness Grade : 1 Wetness Class : II
Gleying : 0 cm
SPL : 79 cm

Drought Grade : 2 APW : 144mm MBW : 28 mm
APP : 115mm MBP : 3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 2P

Grid Reference: SU95176130
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	LFS	10YR42 00	0	2	HR	C				
30- 54	FS	25Y 53 00	0	0		M	MDVCAB	FR	G	
54- 82	LFS	25Y 62 63	0	10	HR	M	WDVCAB	FR	G	
82-100	LFS	25Y 52 63	0	10	HR	C	MDVCPL	FR	M	
100-120	C	25Y 61 00	0	5	HR	M	WDVCPL	FM	P	

Wetness Grade : 1
Wetness Class : I
Gleying : 0 cm
SPL :100 cm

Drought Grade : 2
APW : 153mm MBW : 37 mm
APP : 108mm MBP : -4 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 3P

Grid Reference: SU95676110 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Set-aside
Slope and Aspect : 2 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	FSL	10YR41 43	0	3	HR	C				
25- 48	LFS	10YR41 00	0	3	HR	C	MDCAB	FM	M	
48- 77	SCL	25Y 63 00	0	5	HR	C	WKCSAB	FM	M	
77-120	MSL	05Y 52 53	0	3	HR	C	MDCAB	FR	M	

Wetness Grade : 2 Wetness Class : III
Gleying : 0 cm
SPL : 48 cm

Drought Grade : 2 APW : 152mm MBW : 36 mm
APP : 109mm MBP : -3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 4P

Grid Reference: SU95676110 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Set-aside
Slope and Aspect : 2 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	FSL	10YR41 43	0	3	HR	C				
25- 48	LFS	10YR41 00	0	3	HR	C	MDCAB	FM	M	
48- 77	SCL	25Y 63 00	0	5	HR	C	WKCSAB	FM	M	
77-120	SCL	05Y 52 53	0	3	HR	C	WKCAB	FR	M	

Wetness Grade : 2 Wetness Class : III
Gleying : 0 cm
SPL : 48 cm

Drought Grade : 2 APW : 148mm MBW : 32 mm
APP : 109mm MBP : -3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 1P

Grid Reference: SU95176130
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	LFS	10YR42 00	0	2	HR	C				
30- 56	FSL	10YR42 00	0	0		C	MDVCPL	FR	M	
56- 79	FSL	25Y 63 66	0	10	HR	M	MDCSAB	FR	M	
79-120	C	25Y 62 00	0	10	HR	M	STVCPL	FM	P	

Wetness Grade : 1
Wetness Class : II
Gleying : 0 cm
SPL : 79 cm

Drought Grade : 2
APW : 144mm MBW : 28 mm
APP : 115mm MBP : 3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 2P

Grid Reference: SU95176130
Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	LFS	10YR42 00	0	2	HR	C				
30- 54	FS	25Y 53 00	0	0		M	MDVCAB	FR	G	
54- 82	LFS	25Y 62 63	0	10	HR	M	WDVCAB	FR	G	
82-100	LFS	25Y 52 63	0	10	HR	C	MDVCPL	FR	M	
100-120	C	25Y 61 00	0	5	HR	M	WDVCPL	FM	P	

Wetness Grade : 1
Wetness Class : I
Gleying : 0 cm
SPL :100 cm

Drought Grade : 2
APW : 153mm MBW : 37 mm
APP : 108mm MBP : -4 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 3P

Grid Reference: SU95676110 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Set-aside
Slope and Aspect : 2 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	FSL	10YR41 43	0	3	HR	C				
25- 48	LFS	10YR41 00	0	3	HR	C	MDCAB	FM	M	
48- 77	SCL	25Y 63 00	0	5	HR	C	WKCSAB	FM	M	
77-120	MSL	05Y 52 53	0	3	HR	C	MDCAB	FR	M	

Wetness Grade : 2 Wetness Class : III
Gleying : 0 cm
SPL : 48 cm

Drought Grade : 2 APW : 152mm MBW : 36 mm
APP : 109mm MBP : -3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : SURREY HEATH LP SITE 5 Pit Number : 4P

Grid Reference: SU95676110 Average Annual Rainfall : 0 mm
Accumulated Temperature : 0 degree days
Field Capacity Level : 142 days
Land Use : Set-aside
Slope and Aspect : 2 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	FSL	10YR41 43	0	3	HR	C				
25- 48	LFS	10YR41 00	0	3	HR	C	MDCAB	FM	M	
48- 77	SCL	25Y 63 00	0	5	HR	C	WKCSAB	FM	M	
77-120	SCL	05Y 52 53	0	3	HR	C	WKCAB	FR	M	

Wetness Grade : 2 Wetness Class : III
Gleying : 0 cm
SPL : 48 cm

Drought Grade : 2 APW : 148mm MBW : 32 mm
APP : 109mm MBP : -3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Soil Wetness/Droughtiness

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	SU95316143	SAS			0		1	1	165	49	106	-6	2				DR	2	
1P	SU95176130	PGR			0	79	2	1	144	28	115	3	2				DR	2	
2	SU95036127	PGR			37		1	1	161	45	116	4	2				DR	2	
2P	SU95176130	PGR			0	100	1	1	153	37	108	-4	2				DR	2	
3	SU95176130	PGR			0		1	1	166	50	107	-5	2				DR	2	
3P	SU95676110	SAS	N	2	0	48	3	2	152	36	109	-3	2				WD	2	PIT105 AUG120
4	SU95336128	SAS			35	75	2	1	157	41	126	14	1					1	Q GRADE 2
4P	SU95676110	SAS	N	2	0	48	3	2	148	32	109	-3	2				WD	2	PIT105 AUG120
5	SU95436133	SAS	S	1	20	58	3	2	155	39	119	7	2				WD	2	
6	SU95006120	PGR			45		1	1	171	55	114	2	2				DR	2	
8	SU95206120	PGR	SE	1	0	65	3	2	157	41	115	3	2				WD	2	
9	SU95306117	PGR			0	45	3	2	138	22	115	3	2				WD	2	
10	SU95476126	SAS	S	2	0	105	1	1	160	44	116	4	2				DR	2	
11	SU95526117	SAS	N	2	20	85	1	1	111	-5	84	-28	3A				DR	3A	
12	SU95206112	PGR			58	78	2	1	175	59	121	9	2				DR	2	
14	SU95456110	SAS	N	1			1	1	122	6	106	-6	2				DR	2	
16	SU95676110	SAS	N	2	55	55	3	2	137	21	109	-3	2				WD	2	SLGLEYED 40
19	SU95506102	SAS	SW	1	67	67	2	1	110	-6	85	-27	3A				DR	3A	
26	SU95406090	SAS	E	2	66	66	2	1	134	18	93	-19	3A				DR	3A	
32	SU95436081	SAS	E	2	58	78	2	1	148	32	106	-6	2				DR	2	
34	SU95416065	SAS	SE	1	35	35	4	3A	127	11	104	-8	2				WE	3A	ALLUVIAL
35	SU95526065	SAS	NE	1	75		1	1	139	23	109	-3	2				DR	2	

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	
1	0-20	fsl	10YR32 00	10YR46 00	C			Y	0	0	HR	5							
	20-45	lfs	10YR41 00	10YR46 00	C			Y	0	0	HR	2		M					SEE 1P
	45-60	fs	10YR63 00	10YR58 00	C			Y	0	0	HR	2		G					
	60-85	fs	25Y 63 00	10YR66 00	C			Y	0	0		0		G					BORDER MS
	85-120	fsl	05Y 63 00	10YR68 00	M			Y	0	0		0		M					
1P	0-30	lfs	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	30-56	fsl	10YR42 00	10YR56 00	C			Y	0	0		0	MDVCPL	FR	M				PSD BORDER LFS
	56-79	fsl	25Y 63 66	10YR66 00	M			Y	0	0	HR	10	MDCSAB	FR	M				PSD
	79-120	c	25Y 62 00	75YR58 00	M			Y	0	0	HR	10	STVCPL	FM	P	Y		Y	PSD
2	0-37	fsl	10YR32 00	000C00 00	F				0	0		0							
	37-58	lfs	10YR42 53	10YR56 00	C			Y	0	0		0		M					SEE 1P
	58-75	lfs	25Y 63 00	75YR56 00	M			Y	0	0		0		G					
	75-110	fs	05Y 63 00	10YR58 00	M			Y	0	0		0		G					BORDER MS
2P	0-30	lfs	10YR42 00	10YR58 00	C			Y	0	0	HR	2							
	30-54	fs	25Y 53 00	10YR56 00	M			Y	0	0		0	MDVCAB	FR	G				PSD
	54-82	lfs	25Y 62 63	10YR66 00	M			Y	0	0	HR	10	WDVCAB	FR	G				PSD
	82-100	lfs	25Y 52 63	10YR66 00	C			Y	0	0	HR	10	MDVCPL	FR	M				PSD
	100-120	c	25Y 61 00	75YR58 00	M			Y	0	0	HR	5	WDVCPL	FM	P			Y	
3	0-25	lfs	10YR42 00	10YR58 00	C			Y	0	0	HR	2							SEE 1P/2P
	25-50	fs	10YR43 00	10YR58 00	F			Y	0	0		0		G					BORDER LFS
	50-65	fs	25Y 63 00	10YR68 00	C			Y	0	0		0		G					
	65-100	lfs	05Y 62 00	10YR68 00	M			Y	0	0	HR	5		M					BORDER FSL
	100-108	lfs	05Y 63 00	10YR66 00	C			Y	0	0	HR	2		M					
	108-120	fsl	05Y 63 00	10YR66 00	C			Y	0	0	HR	2		M					
3P	0-25	fsl	10YR41 43	10YR46 00	C			Y	0	0	HR	3							PSD
	25-48	lfs	10YR41 00	10YR46 00	C			Y	0	0	HR	3	MDCAB	FM	M				PSD - BORDER FSL
	48-77	scl	25Y 63 00	10YR58 00	C			Y	0	0	HR	5	WKCSAB	FM	M	Y		Y	PSD
	77-120	msl	05Y 52 53	10YR58 00	C			Y	0	0	HR	3	MDCAB	FR	M			Y	PSD - BORDER LMS
4	0-35	fsl	10YR32 00						0	0		0							
	35-75	fsl	25Y 52 00	10YR56 00	C			Y	0	0		0		M					BORDER MSL
	75-100	c	25Y 62 00	75YR58 00	M			Y	0	0		0		P			Y		SLIGHTLY SANDY
	100-110	scl	25Y 63 00	75YR56 00	M			Y	0	0		0		M			Y		
	110-120	c	25Y 62 00	75YR58 00	M			Y	0	0		0		P			Y		
4P	0-25	fsl	10YR41 43	10YR46 00	C			Y	0	0	HR	3							PSD
	25-48	lfs	10YR41 00	10YR46 00	C			Y	0	0	HR	3	MDCAB	FM	M				PSD - BORDER FSL
	48-77	scl	25Y 63 00	10YR58 00	C			Y	0	0	HR	5	WKCSAB	FM	M	Y		Y	PSD
	77-120	scl	05Y 52 53	10YR58 00	C			Y	0	0	HR	3	WKCAB	FR	M	Y		Y	PSD
5	0-20	fsl	10YR42 00						0	0	HR	2							
	20-42	fsl	10YR41 00	10YR46 00	C			Y	0	0		0		M					
	42-58	fsl	10YR63 00	10YR68 00	C			Y	0	0		0		M					
	58-100	c	05Y 63 00	75YR68 00	M			Y	0	0		0		P			Y		
	100-120	fsl	05Y 63 00	10YR68 00	M			Y	0	0		0		M					

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	
6	0-35	fsl	10YR32 00						0	0	HR	2							
	35-45	lfs	10YR32 00	10YR46 00	F				0	0		0		M					SEE 1P
	45-80	lfs	10YR42 00	10YR46 00	C			Y	0	0		0		M					SEE 1P
	80-120	fs	10YR63 00	10YR66 00	C			Y	0	0		0		G					
8	0-37	fsl	10YR42 00	75YR46 00	M			Y	0	0	HR	2							
	37-55	lfs	25Y 62 53	10YR56 00	M			Y	0	0		0		G					
	55-65	lfs	25Y 63 00	10YR46 00	M			Y	0	0		0		M					SEE 2P WET
	65-85	scl	25Y 63 00	10YR56 00	M			Y	0	0		0		M			Y		MOIST
	85-110	lfs	25Y 63 00	10YR56 00	M			Y	0	0		0		G					WET
9	0-20	fsl	10YR52 00	10YR58 00	C			Y	0	0	HR	2							
	20-45	fsl	10YR53 00	10YR58 00	C			Y	0	0	HR	2		M					BORDER LFS
	45-58	scl	25Y 62 00	10YR68 00	M			Y	0	0		0		M			Y		(F)SCL
	58-120	c	05Y 62 00	10YR68 00	M			Y	0	0		0		P			Y		SL SANDY / FIRM
10	0-33	msl	10YR32 00	10YR46 00	C			Y	0	0	HR	2							BORDER FSL
	33-45	msl	10YR62 44	10YR66 00	C			Y	0	0	HR	2		M					
	45-65	fsl	10YR61 00	10YR58 00	M			Y	0	0		0		M					BORDER SCL
	65-105	msl	25Y 62 00	10YR66 00	M			Y	0	0		0		M					WET
	105-120	scl	25Y 62 00	10YR68 00	M			Y	0	0		0		M			Y		MOIST
11	0-20	msl	10YR43 00	10YR46 00	F				0	0	HR	2							BORDER LMS
	20-40	msl	25Y 51 00	10YR46 00	C			Y	0	0	HR	2		M					BORDER LMS
	40-60	lms	05Y 51 00	10YR46 00	M			Y	0	0		0		M					BORDER MSL
	60-85	lms	25Y 61 71	75YR58 00	C			Y	0	0		0		M					BORDER LFS WET
	85-120	hcl	25Y 61 00	75YR58 00	M			Y	0	0		0		P			Y		BORDER SCL MOIST
12	0-30	fsl	10YR32 00						0	0	HR	2							
	30-58	fsl	10YR42 00						0	0		0		M					
	58-78	lfs	10YR52 00	75YR58 00	M			Y	0	0		0		M					SEE 2P
	78-95	scl	05Y 62 52	10YR58 00	M			Y	0	0		0		M			Y		
	95-120	lfs	05Y 62 00	10YR56 00	M			Y	0	0		0		G					
14	0-25	msl	10YR42 00						0	0	HR	2							
	25-39	msl	10YR43 00						0	0	HR	2		M					
	39-68	msl	25Y 56 64	10YR58 00	C				0	0	HR	2		M					BORDER SCL
	68-120	lms	25Y 76 00						0	0	HR	2		M					
16	0-30	msl	10YR41 42						0	0	HR	3							SEE 3P/4P
	30-40	msl	25Y 41 00	10YR46 00	C			Y	0	0	HR	2		M					ROOT MOTTLES
	40-55	msl	10YR43 00	10YR56 46	C			S	0	0	HR	2		M					SLIGHTLY GLEYED
	55-70	scl	25Y 61 00	10YR68 00	M			Y	0	0		0		M			Y		BORDER HCL
	70-95	hcl	05Y 61 00	10YR68 00	M			Y	0	0		0		P			Y		BORDER SCL
	95-120	scl	05G 51 00	75YR58 00	M			Y	0	0		0		P			Y		
19	0-35	msl	10YR42 00						0	0	HR	2							
	35-67	lms	10YR54 00						0	0	HR	2		M					SEE 2P - WET
	67-88	scl	25Y 62 64	10YR58 00	C			Y	0	0	HR	2		M			Y		MOIST/FIRM
	88-120	ms	05Y 63 00	10YR58 00	C			Y	0	0	HR	2		G					

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	
26	0-33	msl	10YR42 00						0	0	HR	2							
	33-55	lms	10YR43 00						0	0	HR	2		M					WET
	55-66	msl	10YR54 00	10YR56 00	F				0	0	HR	2		M					VERY WET
	66-120	scl	05Y 52 00	10YR56 00	M			Y	0	0	HR	2		M			Y		MOIST/FIRM
32	0-20	msl	10YR42 00						0	0	HR	5							
	20-58	msl	10YR42 00	10YR56 00	F				0	0	HR	2		M					
	58-78	msl	10YR52 00	10YR56 00	C			Y	0	0	HR	2		M					VERY WET
	78-120	scl	05Y 52 00	10YR58 00	C			Y	0	0	HR	2		M			Y		MOIST/FIRM
34	0-35	msl	10YR41 00	10YR46 00	F				0	0	HR	2							BORDER SCL
	35-60	c	05Y 61 00	10YR68 00	M			Y	0	0		0		P			Y		SLIGHTLY SANDY
	60-120	c	05GY61 00	75YR68 00	M			Y	0	0		0		P			Y		SLIGHTLY SANDY
35	0-32	msl	10YR42 00						0	0	HR	2							
	32-55	msl	10YR42 52						0	0	HR	2		M					
	55-75	msl	10YR51 00	10YR44 00	C				0	0	HR	2		M					
	75-120	lms	05Y 52 00	10YR58 00	C			Y	0	0	HR	2		G					VERY WET