

**A1**

**New Forest District Local Plan  
Objector Sites 16 & 20  
Land North Of A337 new Milton,  
Hampshire**

**Agricultural Land Classification  
ALC Map and Report**

**February 1997**

**Resource Planning Team**

**Eastern Region  
FRCA Reading**

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**AGRICULTURAL LAND CLASSIFICATION REPORT**  
**NEW FOREST DISTRICT LOCAL PLAN**  
**OBJECTOR SITES 16 AND 20 LAND NORTH OF A337,**  
**NEW MILTON, HAMPSHIRE**

**INTRODUCTION**

1 This summary report presents the findings of a detailed Agricultural Land Classification (ALC) survey on approximately 32 hectares of land north of A337 New Milton, in Hampshire. The survey was carried out during February 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 its statutory input to the New Forest District Local Plan. The survey area includes two objector sites. 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 majority of the survey area was under set-aside with two smaller areas supporting permanent grassland grazed by sheep and beef cattle. In addition areas mapped as Other Land include woodland, an area used for the storage of minerals and small areas of residential development.

**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	% Total site area
3a	8.0	51.9	24.4
3b	7.4	48.1	23.5
Agricultural land not surveyed			
Other land	16.1		52.1
Total surveyed area	15.4	100.0	
Total site area	31.5		100.0

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

8 The majority of the site has been classified as Subgrade 3a (good quality agricultural land) with three areas of Subgrade 3b (moderate quality agricultural land) located to the north, south and west of the area surveyed.

9 For Subgrade 3a agricultural land, soils comprise a light or medium textured topsoil overlying a medium textured upper subsoil over a heavy textured lower subsoil and/or gravel. Moisture balance calculations indicate that under the prevailing climatic conditions, the soils will be slightly to moderately droughty due to the underlying gravel limiting the available water capacity of the soil for plant growth.

10 For Subgrade 3b agricultural land, soils comprise medium textured upper subsoils over similar or heavy textured upper subsoils over heavy textured lower subsoils and/or gravel. The major soil limitation to the south and west of the surveyed area is soil droughtiness, sometimes in conjunction with high topsoil stone contents where gravel is encountered at shallower depths. In the north of the surveyed area, in the valleys and lower slopes, soil wetness limitations are dominant. Here heavy textured subsoils occur, sometimes in conjunction with more permeable soils with high groundwater levels.

## FACTORS INFLUENCING ALC GRADE

### Climate

11 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

12 The key climatic variables used for grading this site are given in Table 2 overleaf. These were obtained from the published 5km grid datasets using standard interpolation procedures (Met Office 1989).

13 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.

Table 2 Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SZ 259 947	SZ 253 943
Altitude	m, AOD	25	30
Accumulated Temperature	day°C	1540	1534
Average Annual Rainfall	mm	812	816
Field Capacity Days	days	170	171
Moisture Deficit Wheat	mm	110	109
Moisture Deficit Potatoes	mm	105	104

14 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.

15 The combination of rainfall and temperature at this survey area mean that there is no overall climatic limitation. Local climatic factors such as exposure and frost risk, are not believed to significantly affect this area. The site is climatically Grade 1.

#### Site

16 The survey area lies at altitudes in the range 20-35m AOD, the highest land being towards the extreme north and south of the surveyed area, intersected by two small valleys traversing west to east. Nowhere within the survey area are gradients sufficient to adversely affect agricultural land quality.

#### Geology and soils

17 The published geological information for the site (BGS 1975) shows the majority of the centre of the survey area to comprise worked out ground. The majority of the remaining area is shown as drift deposits, a combination of head gravel, plateau gravel and river terrace deposits. To the north of the survey area, Bagshot Beds is mapped as a solid deposit.

18 The most detailed published soils information at 1:250,000 scale for the survey area (SSEW 1983) maps the site as Urban. The soils adjacent to the survey area are mapped as the Shirrell Heath 2 association which are described as Well drained sandy soils with a bleached subsurface horizon, sometimes over soft rock, mainly on heaths and often very acid. Well drained sandy and coarse loamy soils on farmland (SSEW 1983). Soils of this general type were found on parts of the undisturbed area of the site although in general textures were heavier and some imperfectly to poorly drained, flinty and clayey soils were also described.

#### AGRICULTURAL LAND CLASSIFICATION

19 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.

20 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.

#### *Subgrade 3a*

21 The majority of the site has been classified as Subgrade 3a (good quality agricultural land) this is mapped towards the centre and south of the survey area. Land assigned to Subgrade 3a is characterised by land having a slight to moderate droughtiness limitation due to stony subsoil horizons. In places land may also exhibit a slight to moderate wetness limitation. In some locations this is due to fluctuating groundwater, whilst at others slowly permeable layers impede the downward movement of water. Soils in this mapping unit are variable but broadly follow a sequence of horizons illustrated by pit observation 1P. Some individual borings attain a grade 2 classification, but variability within the mapping unit gives an overall classification of Subgrade 3a.

22 Within the unit, soils typically comprise very slightly stony medium topsoils over similar or stonier upper subsoils. Lower subsoils are typically progressively heavier textured (heavy clay loam, clay or silty clay). Many profiles are sufficiently stony in the subsoil to be

impenetrable to the soil auger at depths of 67 - 70+ cm. Some profiles show evidence of drainage impedance in the form of gleying. Where heavy clay loam, clay or silty clay horizons are encountered these generally give rise to slowly permeable layers. Where such layers are absent for example where horizons are stony fluctuating groundwater levels are indicated. In the local climate regime soils are assessed as Wetness Class II or III giving rise to a slight to moderate wetness limitation. In particular this may limit the flexibility of agricultural use due to restrictions on the times where the soil is in a suitable condition for mechanised operations or grazing by livestock, if structural damage to the soil is to be avoided.

23 Moisture balance calculations which take into account of soil and climatic factors also indicate that Subgrade 3a is the appropriate grading for this mapping unit. Where lower subsoils have a high stone content soil moisture reserves are likely to be inadequate to fully meet crop needs and this can result in lower and/or more variable yields.

### *Subgrade 3b*

24 Land of Subgrade 3b quality has been mapped in the north, south and west of the site. The principal limitations are soil wetness in the north and east analogous to land at lower elevations and soil droughtiness along the southern boundary in association with plateau gravel deposits.

25 Subgrade 3b land with the wetness restriction typically comprises very slightly (up to 5% v/v total flints) to slightly stony (up to 15% v/v flints) gleyed medium and heavy clay loam topsoils. This overlies slightly stony but heavier gleyed clays with poor structural conditions indicative of a slowly permeable horizon. These occur at a shallower depth than similar Subgrade 3a soils. Such soils are approximately placed in Wetness Class IV giving Subgrade 3b in the local climatic conditions. Occasional profiles in the lowest areas with more permeable soils are affected by high groundwater levels which may be difficult to control. Poorly drained soils will be restricted in time periods during which the soil is in a suitable condition for mechanical operations or grazing by livestock. Crop yields are also likely to be adversely affected.

26 Subgrade 3b land having a droughtiness restriction is found along the southern boundary of the survey area, on high land adjoining the A337. The soils are characterised by pit observation 2P. Soils are well drained (Wetness Class I). Topsoils are slightly to moderately stony (up to 20% v/v total flint content 11% > 2cm) medium clay loams or medium fine sandy silt loams over similar subsoils. In the lower subsoil below about 50 - 60 cm the subsoil become significantly more stony with volumes of flint in excess of 40%. Such layers are generally impenetrable to the auger but evidence from the soil pit (2P) indicates volumes of flints in excess of 50 - 60% in a sandy or coarse sandy matrix. The high stone content and coarse textures in the lower subsoil significantly reduces the soil moisture reserves for crop growth. Moisture balance calculations indicate that there is a moderate to severe risk of drought and such land is therefore placed in Subgrade 3b since crop yields are likely to be lower and less consistent in these areas.

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## SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet 330 Lymington 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 WETNESS CLASSIFICATION

#### Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years <sup>2</sup>
II	The soil profile is wet within 70 cm depth for 31-90 days in most years <b>or</b> if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 90 days but only wet within 40 cm depth for 30 days in most years
III	The soil profile is wet within 70 cm depth for 91-180 days in most years <b>or</b> 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
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years <b>or</b> 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
V	The soil profile is wet within 40 cm depth for 211-335 days in most years
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years

#### Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* (MAFF 1988)

<sup>1</sup> The number of days is not necessarily a continuous period

<sup>2</sup> In most years is defined as more than 10 out of 20 years

**APPENDIX III**

**SOIL DATA**

**Contents**

**Sample location map**

**Soil abbreviations - Explanatory Note**

**Soil Pit Descriptions**

**Soil boring descriptions (boring and horizon levels)**

**Database Printout - Horizon Level Information**

## 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

<b>F</b>	faint indistinct mottles evident only on close inspection
<b>D</b>	distinct mottles are readily seen
<b>P</b>	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>SLST</b>	soft oolitic or dolomitic limestone
<b>CH</b>	chalk	<b>FSST</b>	soft fine grained sandstone
<b>ZR</b>	soft argillaceous or silty rocks	<b>GH</b>	gravel with non porous (hard) stones
<b>MSST</b>	soft medium grained sandstone	<b>GS</b>	gravel with porous (soft) stones
<b>SI</b>	soft weathered igneous/metamorphic rock		

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

<u>degree of development</u>	<b>WK</b> weakly developed	<b>MD</b> moderately developed
	<b>ST</b> strongly developed	
<u>ped size</u>	<b>F</b> fine	<b>M</b> medium
	<b>C</b> coarse	<b>VC</b> very coarse
<u>ped shape</u>	<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

SOIL PIT DESCRIPTION

Site Name NEW FOREST DLPSITES16&20 Pit Number 1P

Grid Reference SZ25909440 Average Annual Rainfall 812 mm  
 Accumulated Temperature 1540 degree days  
 Field Capacity Level 170 days  
 Land Use Set-aside  
 Slope and Aspect 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MCL	10YR42 00	6	10	HR					
28- 45	MCL	10YR52 00	0	20	HR	C	MDVCSB	FR	M	
45- 70	MCL	75YR53 00	0	2	HR	M	MDCSAB	FR	M	
70- 75	MCL	75YR53 00	0	15	HR	M	MDCSAB	FR	M	
75-120	ZC	25 Y71 00	0	0		M	WKVCAB	VM	P	

Wetness Grade 2 Wetness Class II  
 Gleying 028 cm  
 SPL 075 cm

Drought Grade 2 APW 131mm MBW 21 mm  
 APP 107mm MBP 2 mm

FINAL ALC GRADE 2  
 MAIN LIMITATION Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name NEW FOREST DLPSITES16&20 Pit Number 2P

Grid Reference SZ25409430 Average Annual Rainfall 812 mm  
 Accumulated Temperature 1540 degree days  
 Field Capacity Level 170 days  
 Land Use Set-aside  
 Slope and Aspect 03 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MCL	10YR41 00	6	13	HR					
32- 48	MCL	10YR32 00	0	10	HR		MDCSAB	FR	M	
48- 60	SCL	10YR42 00	0	50	HR				M	
60- 75	LCS	10YR42 00	0	60	HR				M	
75-120	GH		0	0					P	

Wetness Grade 1 Wetness Class I  
 Gleying cm  
 SPL No SPL

Drought Grade 3B APW 88 mm MBW -22 mm  
 APP 86 mm MBP -19 mm

FINAL ALC GRADE 3B  
 MAIN LIMITATION Droughtiness

SAMPLE NO	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M REL DRT	EROSN FLOOD	FROST EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP							
1P	SZ25909440	SAS N	02	028	075	2	2	131	21	107	2	2			WD	2	BORDER3A
2	SZ25759475	PGR		028	055	3	3A	126	16	104	-1	2			WE	3A	WT 55CM
2P	SZ25409430	SAS N	03			1	1	88	-22	86	-19	3B			DR	3B	I75CM GRAVEL
3	SZ25709470	PGR N	03	0	035	4	3B	93	-17	104	-1	3A			WE	3B	
4	SZ25809470	PGR N	03			1	1	98	-12	107	2	3A			DR	3A	BRICKEARTH I67
5	SZ25909470	SAS N	01	023		2	2	86	-24	91	-14	3B			DR	3B	I60CM GRAVELLY
6	SZ26009470	PGR		0	020	4	3B	79	-31	86	-19	3B			WE	3B	FLOODPLAIN I68
12	SZ26009460	PGR		0		4	3B	324	215	212	108	3B			WE	3B	QUERY WC
17	SZ25909450	PGR S	01	0		2	2	188	78	144	39	1			WE	2	Q WETNESS
18	SZ26009450	SAS NE	05			1	1	79	-31	81	-24	3B			DR	3B	I55 GRAVELLY
19	SZ25209440	PGR S	03	030	048	3	3A	110	0	110	5	3A			WE	3A	
22	SZ25709440	PGR S	03	0	089	2	2	142	32	116	11	1			WE	2	
23	SZ25809440	SAS NW	04	000		2	2	116	6	109	4	2			WE	2	I90 GRAVELLY
24	SZ25909440	SAS NW	04	030	070	3	3A	130	20	106	1	2			WE	2	SEE 1P
25	SZ26009440	SAS N	01			1	1	81	-29	80	-25	3B			DR	3B	I88 GRAVELLY
26	SZ25309430	SAS NE	02			1	1	101	-9	101	-4	3A			DR	3A	I47 GRAVELLY
27	SZ25409430	SAS NW	04	045		1	1	96	-14	103	-2	3A			DR	3A	I65 SEE 2P
28	SZ25509430	SAS NW	04	026		2	1	102	-8	113	8	3A			DR	3A	I70 GRAVELLY
29	SZ25609430	SAS NW	03	033	065	3	2	153	43	119	14	1			WE	2	
30	SZ25159435	SAS N	01	022	022	4	3B	101	-9	98	-7	3A			WE	3B	I95 GRAVELLY

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL	---STONES---			STRUCT/ CONSIST	SUBS STR POR IMP SPL	CALC
				COL	ABUN	CONT		GLE	>2	>6			
1P	0-28	mc1	10YR42 00					6	0	HR	10		SL SANDY
	28-45	mc1	10YR52 00	75YR46 00	C			Y	0	HR	20	MDVCSB FR M	
	45-70	mc1	75YR53 00	75YR58 00	M			Y	0	HR	2	MDCSAB FR M	
	70-75	mc1	75YR53 00	75YR58 00	M			Y	0	HR	15	MDCSAB FR M	WET
	75-120	zc	25 Y71 00	75YR68 00	M			Y	0	0	0	WKVCAB VM P	Y Y ASSUME TO 120CM
2	0-28	mc1	10YR42 00					0	0	HR	10		
	28-55	fs1	05Y 62 00	75YR58 68	M		00MN00 00	Y	0	HR	15	M	FLUCTUATING WT MOIS
	55-120	zc	05B 61 00				00MN00 00	Y	0	HR	10	P	Y WATERLOGGING
2P	0-32	mc1	10YR41 00					6	0	HR	13		SL ORGANIC
	32-48	mc1	10YR32 00					0	0	HR	10	MDCSAB FR M	
	48-60	sc1	10YR42 00					0	0	HR	50	M	COARSE SAND
	60-75	lcs	10YR42 00					0	0	HR	60	M	
	75-120	gh						0	0		0	P	PIT TO 75CM
3	0-35	mc1	10YR52 00	10YR58 00	C			Y	0	HR	5		
	35-53	c	25Y 72 00	10YR58 00	M		00MN00 00	Y	0	HR	1	P	Y V FIRM
	53-70	zc	25Y 71 00	75YR58 00	M		00MN00 00	Y	0	0	0	P	Y V PLASTIC
4	0-25	mc1	10YR54 00					0	0	HR	2		SURFACE MOISTURE
	25-60	hc1	10YR56 00					0	0	HR	2	M	
	60-67	mc1	10YR54 00					0	0	HR	35	M	I GRAVELLY
5	0-23	mc1	10YR43 00	10YR58 00	C			Y	0	hr	12		
	23-60	mc1	10YR53 00	75YR56 00	C			Y	0	hr	8	M	
6	0-20	hc1	75YR52 00	75YR56 00	C			Y	0	HR	2		SURFACE WATER
	20-50	hc1	75YR52 00	75YR56 00	M			Y	0	HR	2	P	Y V FIRM
	50-58	c	10YR41 00	10YR58 00	C			Y	0	HR	2	P	Y FIRM WT 50CM
	58-65	c	10YR41 00	10YR58 00	C			Y	0	HR	45	P	Y I GRAVELLY
12	0-28	omc1	10YR31 00	10YR46 00	C			0	0	HR	2		
	28-42	p1	10YR31 33					0	0	HR	2	M	
	42-60	lp	10YR21 00					0	0		0	M	WET
	60-120	lp	10YR21 00					0	0		0	M	WATER TABLE
17	0-25	mc1	25Y 52 00	75YR58 00	C			Y	0	HR	2		
	25-45	mc1	25Y 51 00	75YR58 00	M			Y	0	HR	2	M	WET
	45-80	omzcl	25Y 42 00	10YR58 00	C			Y	0	HR	2	M	V WET/SOFT
	80-120	hzc1	25Y 72 82	10YR58 00	C			Y	0	HR	10	M	
18	0-28	mc1	10YR32 00					3	0	HR	6		
	28-45	mc1	10YR53 00	10YR58 00	F			0	0	HR	20	M	WET
	45-55	mc1	10YR53 00					0	0	HR	30	M	I GRAVELLY/WET
19	0-30	mc1	10YR32 00					0	0	HR	5		
	30-48	mc1	10YR42 00	75YR56 00	C			Y	0	HR	5	M	
	48-67	hc1	10YR41 00	10YR68 00	C		00MN00 00	Y	0	HR	10	M	Y
	67-85	sc1	25Y 62 00	10YR66 00	C			Y	0	HR	10	P	Y I GRAVELLY

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL	---STONES---				STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
22	0-30	mc1	10YR52 00	10YR58 00	C			Y	0	0	HR	2						
	30-45	mc1	10YR52 00	75YR46 00	M			Y	0	0	HR	2		M				
	45-79	mc1	10YR41 00	10YR46 00	C			Y	0	0	HR	2		M				
	79-89	omzc1	10YR31 00	10YR56 00	C			Y	0	0	HR	5		M				
	89-120	mc1	25Y 71 72	10YR78 00	C			Y	0	0	HR	5		M		Y		FIRM
23	0-30	mc1	10YR43 00								3	0	HR	6				
	30-60	hc1	10YR54 00								0	0	HR	10		M		WATER TABLE 30CM
	60-90	hc1	75YR54 00								0	0	HR	10		M		I 90 GRAVELLY
24	0-30	sc1	10YR43 00								5	0	HR	10				
	30-45	mc1	10YR53 00	75YR46 00	C			Y	0	0	HR	5		M				
	45-70	mc1	25Y 63 00	75YR58 00	C			Y	0	0	HR	7		M				
	70-120	c	05Y 72 00	10YR68 00	M			Y	0	0		0		P		Y		SPL 75 IN 1P
25	0-28	mc1	10YR42 00								11	0	HR	20				3A TS STONES
	28-57	sc1	10YR42 00								0	0	HR	25		M		SOFT
	57-88	ms	10YR54 00								0	0	HR	30		G		I GRAVELLY
26	0-27	fsz1	75YR32 00								3	0	HR	5				
	27-47	z1	05Y 71 00	75YR42 00	F						0	0		0		M		I 47 GRAVELLY
27	0-28	msz1	10YR32 00								3	0	HR	6				
	28-45	mc1	10YR43 00	75YR56 00	F						0	0	HR	5		M		
	45-60	hc1	10YR53 00	10YR56 00	C			Y	0	0	HR	10		M				V STONY IN PIT
	60-65	cs1	10YR62 00					Y	0	0	HR	40		M				I GRAVELLY
28	0-26	msz1	75YR32 00								4	0	HR	7				
	26-65	mc1	10YR52 00	75YR46 00	C			Y	0	0	HR	5		M				
	65-70	hc1	25Y 62 00	10YR66 00	M			Y	0	0	HR	10		M				I GRAVELLY
29	0-33	fsz1	10YR22 00								6	0	HR	10				
	33-65	mc1	75YR32 00	75YR46 00	C			Y	0	0	HR	8		M				
	65-100	c	75Y 72 00	10YR68 00	C			Y	0	0	HR	5		P		Y		
	100-120	fs1	05Y 72 00	10YR68 00	C			Y	0	0	HR	5		M		Y		
30	0-22	hc1	10YR32 00								1	0	HR	4				
	22-40	c	05Y 21 00	75YR44 00	C			Y	0	0		0		P		Y		
	40-65	hzc1	05Y 61 00	10YR66 00	C			Y	0	0		0		P		Y		
	65-80	sc1	05Y 61 00	10YR66 00	C			Y	0	0	HR	15		M		Y		
	80-95	ms	05Y 72 00	10YR66 00	C			Y	0	0	HR	2		G				I GRAVELLY