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Hampshire Structure Plan Review
Land at Palestine/Grateley
Reconnaissance Survey
Agricultural Land Classification
ALC Map and Report
April 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

HAMPSHIRE STRUCTURE PLAN REVIEW
LAND AT PALESTINE/GRATELEY
RECONNAISSANCE SURVEY

1 Summary

1 1 ADAS was commissioned by MAFF s Land Use Planning Unit to provide information on land quality for a number of areas of search in connection with MAFF s input to the Hampshire Structure Plan Review

1 2 The land between Palestine and Grateley comprises 685 hectares of land bounded by Grateley Station in the east Quarley Hill in the north Long Walk plantation in the west and Mount Carmel Road in the south An Agricultural Land Classification (ALC) survey was completed at a reconnaissance level of detail on a free survey basis as it was undertaken primarily to update the 1 63 360 scale provisional ALC map for the area of search Consequently the results are designed for strategic planning purposes only For site specific proposals further more detailed surveys may be required A total of 79 auger borings and 4 soil inspection pits were assessed in accordance with MAFF s revised guidelines and criteria for grading the quality of agricultural land (MAFF 1988) These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture

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

1 4 At the time of the survey the majority of the agricultural land was under arable cropping and set aside The remainder comprised permanent pasture and grassland ley Urban areas include the private dwellings commercial properties and includes farm buildings adjoining the urban area of Palestine as well as more isolated properties Woodland is shown as Non agricultural land About 15% of the area was not surveyed mainly at the request of the owners concerned

1 5 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table 1 overleaf The map has been drawn at a scale of 1 50 000 It is accurate at this scale but any enlargement would be misleading

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

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
2	9	1 3	1 7
3a	107	15 6	20 6
3b	403	58 9	77 7
Non Agricultural	24	3 5	100% (519 ha)
Urban	37	5 4	
Not Surveyed	105	15 3	
Total area of site	685	100%	

1 7 The majority of the agricultural land in this area of search has been classified as moderate quality (Subgrade 3b) Some areas of good quality (Subgrade 3a) land are situated around the north west of the area of search and a small area of very good quality (Grade 2) land has been mapped in the south west corner The key limitation across the site is soil droughtiness with topsoil stoniness as a limiting factor to a lesser extent

The soils at this locality are derived from the Upper Chalk and as such comprise variably flinty chalky drift over chalk In this climatic regime where the bedrock is encountered immediately below the topsoil or where more than 15% flints greater than 2 cm diameter occur in the topsoil the land has been assigned to Subgrade 3b on the basis of a significant soil droughtiness and/or topsoil stoniness limitation In a number of places the soil profiles are less stony and possess an upper subsoil above the chalk Here the amount of profile available water for crops is slightly higher reducing the risk of soil droughtiness and consequently this land is assigned to Subgrade 3a In a small valley feature to the south west corner the profiles are notably deeper over the chalk with fewer flints and chalk fragments This land has therefore been classified as Grade 2 on the basis of a minor soil droughtiness and topsoil stoniness limitation

All of the soil units contain occasional individual observations of either better or poorer quality land However at this mapping scale they were not mapped separately due to their limited number and sporadic extent

2 Climate

2 1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

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

2 3 An assessment of the prevailing climate has been made by interpolation from a 5km grid point dataset (Met Office 1989) A representative sample are given in Table 2 and these show that there is no overall climatic limitation However other factors do interact with soil properties to influence soil wetness and droughtiness

2 4 Due to the comparatively small differences in the climate in the survey area, the specific climatic variable chosen for the purposes of the survey was the median value of those obtained from over 30 separate readings taken over the whole survey area By constructing an isopleth map for each variable across the site the actual values for each survey point was later established and the grade assessed from this

Table 2 Climatic Interpolations covering the range of data within the Area of Search

Grid Reference	SU234418	SU250415	SU258421
Altitude (m AOD)	95	110	135
Accumulated Temperature (degree days Jan June)	1440	1423	1394
Average Annual Rainfall (mm)	777	796	802
Field Capacity (days)	172	174	175
Moisture Deficit Wheat (mm)	105	103	99
Moisture Deficit Potatoes (mm)	96	93	89
Overall Climatic Grade	1	1	1

2 5 No local climatic factors such as significant frost risk or exposure are believed to adversely affect the area of search

3 Relief

3 1 The area of search lies between approximately 95 and 135 m AOD In general the land falls from north east to south west but is dissected by a series of dry valleys which give rise to a gently undulating landscape South of the railway there is a ridge of higher ground linking Boar Knoll with the main built up area of Palestine Nowhere in this area do either gradient or altitude affect agricultural land use

4 Geology and Soil

4 1 The published geological information (BGS 1975 & 1976 1 50 000 scale) shows the entire site to be underlain by the Upper Chalk

4 2 The published soil information (SSEW 1983 & 1984 1 250 000 scale) shows the majority of the site to comprise the Andover 1 soil association with some Carstens association mapped in the south east corner The Andover 1 association is described as comprising shallow well drained calcareous silty soils over chalk on slopes and crests Deep calcareous and non calcareous fine silty soils in valley bottoms Striped soil patterns locally (SSEW 1983) and the Carstens association are well drained fine silty over clayey fine silty and clayey soils often very flinty (SSEW 1983)

4 3 The reconnaissance survey revealed soils broadly similar to those described in paragraph 4 2 predominantly of the Andover association type On the crests of

some hills deeper more clayey soils were recorded which may be similar to the Carstens association However the change to Carstens soils as mapped by the SSEW (1983) in the south east of the site was not recorded during field survey work

5 Agricultural Land Classification

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

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

Grade 2

5 3 Land of very good quality is limited in extent and occurs over approximately 1% of this area of search on a small rise close to the Hampshire Gap These soils comprise well drained (Wetness Class I) medium silty clay loam topsoils passing to heavy silty clay loam and clay lower subsoils before the chalk is reached at a depth of 68 cm or more The total flint content ranges from 5 15% in the topsoil and decreases with depth In the topsoil flints > 2 cm in diameter were occasionally measured as 8% v/v resulting in a topsoil stoniness limitation Large flints such as these can slightly restrict crop establishment and cause wear to tyres and agricultural machinery thereby limiting the land to Grade 2 In addition the total stone content and restricted soil depth over the chalk act to reduce the amount of profile available water for plants thus slightly restricting crop growth and yield potential This land has therefore been assessed as Grade 2 due to a minor soil droughtiness and occasional topsoil stoniness limitation

Subgrade 3a

5 4 Land of good quality occurs in four isolated units towards the west of the site which in total comprises 15 6% of the total area The soil profiles comprise well drained (Wetness Class I) medium silty clay loam topsoils over similar or heavier upper subsoils The total stone content in the topsoil measures 8 18% flints which includes 2 11% >2 cm and 2 8% >6 cm in diameter as well as around 5% chalk fragments The upper subsoil overlies the chalk bedrock and contains 5 50% chalk fragments with 5 15% flints As indicated by Pit 4 the chalk generally occurs abruptly at 38 50 cm depth and is relatively hard thus restricting rooting depth to around 70cm and reducing available water capacity This in combination with the overall stone content leads to a moderate soil droughtiness limitation On occasions a topsoil stoniness limitation of equal severity occurs where flints >2 cm in diameter exceed 10% v v This increases production costs by increasing implement and tyre wear and by adversley affecting germination and harvesting Occasional borings of slightly better quality also occur in these mapping units however due to their limited number and distribution they have not been mapped separately

Subgrade 3b

5 5 The majority of this area of search (59 1%) has been assessed as moderate quality land The soils are well drained (Wetness Class I) and shallow over chalk In general the chalk bedrock occurs immediately below the topsoil and is considered to restrict plant rooting due to its hard and compacted nature at this location Pits 1 2 and 3 indicate rooting to between 45 65cm depending upon the precise characteristics of the chalk However for the purposes of survey 65cm rooting was used The topsoil is similar in texture to the rest of the survey area but contains between 3 35% total flint (2 25% >2 cm and 1 15% >6 cm) and 1 10% chalk fragments Profile available water will be significantly reduced on this land due to the shallow soil depth over chalk and locally high stone content in the small dry valley which runs from north east to south west past Quarley Down Farm The percentage of stones >2 cm and >6 cm will also adversley affect crop establishment and increase production costs through tyre wear and damage to agricultural machinery Again some areas of better quality land are included in this mapping unit but on the whole this land has been assessed as Subgrade 3b due to a significant soil droughtiness and/or soil stoniness limitation

ADAS Ref 1512/100/95
MAFF Ref 15/518

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1975) Sheet No 299 Winchester 1 50 000 (drift edition)

British Geological Survey (1976) Sheet No 298 Salisbury 1 50 000 (drift edition)

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

Meteorological Office (1989) Climatological Data for Agricultural Land Classification

Soil Survey of England and Wales (1983) Sheet 6 Soils of South East England 1 250 000 scale and accompanying legend)

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 Excellent Quality Agricultural Land

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

Grade 2 Very Good Quality Agricultural Land

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

Grade 3 Good to Moderate Quality Land

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

Subgrade 3a Good Quality Agricultural Land

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

Subgrade 3b Moderate Quality Agricultural Land

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

Grade 4 Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields It is mainly suited to grass with occasional arable crops (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 which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops

Urban

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

Non agricultural

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

Woodland

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

Agricultural Buildings

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

Open Water

Includes lakes ponds and rivers as map scale permits

Land Not Surveyed

Agricultural land which has not been surveyed

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

APPENDIX II

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

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

Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years [2]
II	The soil profile is wet within 70 cm depth for 31 90 days in most years **or** if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 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 **or** if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31 90 days in most years
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 **or** if there is no slowly permeable layer present within 80 cm depth it is wet within 40 cm depth for 91 210 days in most years
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

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics site and climatic factors Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field The method adopted here is common to ADAS and the SSLRC

[1]The number of days specified is not necessarily a continuous period

[2] In most years is defined as more than 10 out of 20 years

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a 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	**DCW**	Deciduous Wood
HTH	Heathland	**BOG**	Bog or Marsh	**FLW**	Fallow
PLO	Ploughed	**SAS**	Set aside	**OTH**	Other
HRT	Horticultural Crops				

3 **GRDNT** Gradient as 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	**EX**	Exposure
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
ST	Topsoil Stoniness				

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	**SLST**	soft oolitic or dolimitic limestone
CH	chalk	**FSST**	soft fine grained sandstone
ZR	soft argillaceous or silty rocks	**GH**	gravel with non porous (hard) stones
MSST	soft medium grained sandstone	**GS**	gravel with porous (soft) stones
SI	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

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

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

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

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 appropiate 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

S te Name HANTS SP PALESTINE/GRATE P t N mbe 1P

G d Ref ce SU23824170 A e g A l R nfall 796 mm
Acc m lated Tempe at e 1423 degree d ys
F eld C p ty Le l 174 d ys
L nd Use L y
Slope d Aspect 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 26	MZCL	10YR33 00	2		3	HR					Y
26 65	CH	10YR81 00	0		2	HR				P	Y

Wet s Grade 1 Wetness Cl ss I
Gl y ng cm
SPL No SPL

Dro ght G de 3B APW 082mm MBW 21 mm
APP 086mm MBP 9 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Drought s

SOIL PIT DESCRIPTION

S te Name HANTS SP PALESTINE/GRATE P t N be 2P

Gr d Refe ence SU24954182 A e ge A l R f ll 796 mm
Acc mul ted Tempe t e 1423 deg ee d ys
Field Capac ty Le el 174 days
Land U e Perma e t G ss
Slope d A pect deg ee

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 20	MZCL	10YR43 00	0		15	HR					Y
20 45	CH	10YR81 00	0		2	HR				P	Y

Wetness Grade 1 Wet ess Class I
Gley g cm
SPL No SPL

D o ght G de 3B APW 057mm MBW 46 mm
APP 057mm MBP 36 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Dro ght ess

SOIL PIT DESCRIPTION

S t Name HANTS SP PALESTINE/GRATE P t N mbe 3P

G d R fe ence SU27074082 A e g An l Ra nfall 796 mm
Accumulated Tempe at e 1423 deg ee days
F eld Capac ty Le l 174 day
L nd Us Permanent G
Slope nd Aspect 03 degrees SE

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 22	MZCL	10YR42 00	8	20	HR					Y
22 50	CH	10YR81 64	0	2	HR				P	Y

Wet G ade 1 Wet e Clas I
Gley g cm
SPL N SPL

D o ght G ade 3B APW 061mm MBW 42 mm
APP 061mm MBP 32 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Drought e s

SOIL PIT DESCRIPTION

S te Name HANTS SP PALESTINE/GRATE P t N mbe 4P

Gr d Refe e ce SU23824170

A e age A al Ra f ll	796 mm
Acc m lated Tempe at re	1423 deg ee days
F eld C p city Lev l	174 day
L d Use	Ley
Slope and Aspect	02 deg ees N

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 26	MZCL	10YR33 00	2		3	HR					Y
26 46	MZCL	10YR44 00	0		30	CH				M	Y
46 70	CH	10YR81 00	0		2	HR				P	Y

Wetness G de 1

Wet Cl ss	I
Gl y g	cm
SPL	No SPL

D o ght Grade 3A

APW	095mm	MBW	8 mm
APP	101mm	MBP	6 mm

FINAL ALC GRADE 3A
MAIN LIMITATION D ought ess

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	POTS AP	POTS MB	M REL AP	M REL MB	DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU23524137	SAS	SE	02			1	1	073	24	076	10	3B				DR	3B	Chalk 35
1P	SU23824170	LEY	N	02			1	1	082	21	086	9	3B				DR	3B	Roots 65/70
2	SU23424155	PGR					1	1	087	16	093	2	3A				DR	3A	3A ST al o
2P	SU24954182	PGR					1	1	057	46	057	36	3B				DR	3B	Roots 45
3	SU23474172	PGR	NE	05			1	1	071	32	074	19	3B				DR	3B	Ch lk 20
3P	SU27074082	PGR	SE	03			1	1	061	42	061	32	3B				DR	3B	Roots 50
4	SU23604182	PGR	W	01			1	1	073	30	079	14	3B				ST	3B	DR al o
4P	SU23824170	LEY	N	02			1	1	095	8	101	6	3A				DR	3A	Bounda y A/B
5	SU23374195	LEY	S	02			1	1	089	15	095	0	3A				DR	3A	Chalk 50
6	SU23354212	LEY	S	01			1	1	086	17	092	3	3A				DR	3A	3A ST l g
7	SU23874210	LEY	S	02			1	1	088	15	094	1	3A				DR	3A	l rge sto
8	SU23924195	LEY					1	1	077	30	082	13	3B				ST	3B	DR l o
9	SU23824170	LEY	N	02			1	1	082	21	086	9	3B				DR	3B	At P t l
10	SU24204202	PGR					1	1	071	32	076	17	3B				ST	3B	DR l o
11	SU24124185	PGR	N	04			1	1	074	29	078	17	3B				DR	3B	Ch lk 20
12	SU24454202	CER					1	1	073	30	077	16	3B				ST	3B	DR also
13	SU24454217	PGR	S	04			1	1	076	27	080	13	3B				DR	3B	Ch lk 25
14	SU24804207	LEY	N	01			1	1	077	26	082	11	3B				DR	3B	Ch lk 38
15	SU24954182	LEY					1	1	069	33	073	19	3B				DR	3B	At P t 2
16	SU24704152	PLO	N	01			1	1	082	21	087	7	3B				DR	3B	Almo t 3A
17	SU24524190	PLO	N	04			1	1	079	24	083	10	3B				DR	3B	Chalk 28
18	SU24254170	PLO					1	1	076	27	080	13	3B				DR	3B	Ch lk 25
19	SU24374152	PLO					1	1	088	15	097	4	3A				ST	3A	DR also
20	SU23754077	SAS	NE	01			1	1	108	5	114	21	2				DR	2	Imp 78
21	SU23754087	SAS	NE	05			1	1	081	22	086	7	3B				DR	3B	Chalk 27
22	SU23804102	SAS	SW	03			1	1	073	30	078	15	3B				DR	3B	Chalk 25
23	SU23654130	SAS					1	2	124	21	098	5	2				ST	3A	Q Dist bed
24	SU23874152	SAS	S	02			1	1	087	16	091	2	3A				DR	3A	Chalk 38
25	SU24104147	SAS					1	1	056	47	056	37	3B				DR	3B	Imp 40
26	SU23974127	SAS	N	02			1	1	085	18	089	6	3A				DR	3A	Ch lk 45
27	SU24074105	CER					1	1	086	18	092	6	3A				DR	3A	Ch lk 40
28	SU24024085	CER	SW	03			1	1	072	31	077	16	3B				DR	3B	Chalk 20
29	SU24324112	PGR					1	1	087	16	091	3	3A				DR	3A	Chalk 40
30	SU24574117	CER	N	02			1	1	076	27	080	13	3B				DR	3B	Ch lk 25
31	SU24774135	PGR	N	03			1	1	117	14	112	19	2				DR	2	Chalk 68
32	SU24754150	PGR	N	02			1	1	088	15	093	1	3A				DR	3A	Ch lk 48
33	SU24974132	PGR					1	1	116	13	108	15	2				DR	2	Chalk 70
34	SU25204125	PLO	W	02			1	1	076	27	080	13	3B				DR	3B	Ch lk 25
35	SU25004105	CER					1	1	089	13	095	2	3A				DR	3A	Imp 60
36	SU24804095	CER					1	1	071	32	076	17	3B				DR	3B	Chalk 25
37	SU24074065	CER	N	01			1	1	084	19	090	5	3A				DR	3A	3A ST l o
38	SU24074025	CER	E	02			1	1	123	20	110	17	2				DR	2	ST lso

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	POTS AP	POTS MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT	COMMENTS
39	SU24104040	CER	E	05			1	1	145	42	119	26	1				DR 1	
40	SU24224047	CER					1	1	087	16	091	3	3A				DR 3A	Chalk 45
41	SU24404052	CER	N	03			1	1	079	24	083	10	3B				DR 3B	Ch lk 28
42	SU24474062	CER	N	01			1	1	087	16	093	0	3A				DR 3A	Ch lk 40
43	SU24354072	CER	W	02			1	1	071	32	076	17	3B				DR 3B	Ch lk 25
44	SU24254085	CER	W	01			1	1	086	17	092	1	3A				DR 3A	Chalk 38
45	SU24654102	CER	S	03			1	1	078	25	082	11	3B				DR 3B	Chalk 25
46	SU24654087	CER	W	02			1	1	051	52	051	42	4				DR 3B	Imp fl nts 3
47	SU24754070	CER	N	01			1	1	080	22	084	9	3B				DR 3B	Chalk 28
48	SU25074090	CER	N	03			1	1	079	23	083	10	3B				DR 3B	Ch lk 28
49	SU25354095	CER	W	03			1	1	074	29	079	14	3B				DR 3B	Chalk 20
50	SU25404112	PLO	W	03			1	1	079	24	083	10	3B				DR 3B	Ch lk 25
51	SU25304155	PGR					1	1	071	32	076	17	3B				DR 3B	Chalk 25
52	SU25174177	PGR	NE	05			1	1	081	21	085	7	3B				DR 3B	Imp fli t 52
53	SU25304182	PGR					1	1	046	57	046	47	4				DR 3B	Imp fli t 30
54	SU24774227	CER	S	03			1	1	073	29	078	14	3B				DR 3B	Chalk 25
55	SU25174242	CER	S	04			1	1	078	25	082	11	3B				DR 3B	Chalk 25
56	SU25274212	PLO	SW	02			1	1	074	29	074	19	3B				ST 3B	Imp50 QCh lk
57	SU25454222	PLO	SW	02			1	1	085	18	091	2	3A				ST 3B	Imp55 Chalk
58	SU25904150	CER	W	03			1	1	076	27	080	13	3B				DR 3B	Chalk 25
59	SU26204122	CER	W	02			1	1	081	20	085	6	3B				DR 3A	Almost 3B
60	SU25604142	OSR	NE	03			1	1	073	29	073	19	3B				DR 3B	Ch lk 30
61	SU25754117	OSR	NE	01			1	1	074	28	074	18	3B				DR 3A	Imp40 Q CH
62	SU27254055	PGR					1	1	064	39	064	28	3B				DR 3B	Ch lk 25
63	SU27074082	PGR	SE	03			1	1	076	25	080	12	3B				DR 3B	At Pit 3
64	SU27074040	CER	SE	01			1	1	074	29	079	14	3B				DR 3B	Ch lk 22
65	SU26904050	CER		02			1	1	076	27	081	12	3B				DR 3B	Chalk 23
66	SU26754070	CER		01			1	1	073	30	077	16	3B				DR 3B	Ch lk 18
67	SU26454082	SAS		01			1	1	080	23	084	9	3B				DR 3B	Not Flinty
68	SU26054015	CER	W	02			1	1	084	19	089	3	3A				DR 3A	Chalk 38
69	SU26304045	CER	W	01			1	1	076	25	081	10	3B				DR 3B	Chalk 30
70	SU26274075	CER					1	1	079	20	084	6	3B				DR 3A	Almost 3B
71	SU25704092	CER	E	02			1	1	053	47	053	39	3B				DR 3B	Gran la Cha
72	SU25054067	CER	W	02			1	1	079	22	083	9	3B				DR 3B	G an la Chalk
73	SU26874117	CER	E	01			1	1	087	16	091	2	3A				DR 3A	Ch lk 35
74	SU26874155	CER	S	04			1	1	077	24	082	10	3B				DR 3B	Ch lk 30
75	SU26824145	CER	NW	01			1	1	068	35	068	25	3B				DR 3B	Chalk 25
76	SU25854170	CER	W	03			1	1	077	26	081	12	3B				DR 3B	Ch lk 25
77	SU26321455	CER					1	1	077	26	081	12	3B				DR 3B	Ch lk 27
78	SU25104145	PGR					1	1	078	24	083	10	3B				DR 3B	Chalk 28
79	SU25504202	CER	W	03			1	1	074	29	078	15	3B				DR 3B	Chalk 22

				MOTTLES			PED		STONES				STRUCT/	SUBS				
AMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0 25	mzcl	10YR33 00						6	3	HR	15						Y
	25 35	mzcl	10YR54 00						0	0	CH	35		M				Y
	35 70	ch	10YR81 00						0	0	HR	2		P				Y
1P	0 26	mzcl	10YR33 00						2	1	HR	3						Y
	26 65	ch	10YR81 00						0	0	HR	2		P				Y soft Chalk
2	0 20	mzcl	10YR43 00						12	8	HR	17						Y
	20 40	mzcl	10YR54 00						0	0	CH	15		M				Y
	40 70	ch	10YR81 00						0	0	HR	2		P				Y
2P	0 20	mzcl	10YR43 00						0	0	HR	15						Y
	20 45	ch	10YR81 00						0	0	HR	2		P				Y ery hard Chalk
3	0 20	mzcl	10YR43 00						5	2	HR	9						Y
	20 60	ch	10YR81 00						0	0	HR	2		P				Y
3P	0 22	mzcl	10YR42 00						8	2	HR	20						Y
	22 50	ch	10YR81 64						0	0	HR	2		P				Y hard Ch lk
4	0 25	mzcl	10YR33 00						25	15	HR	35						Y
	25 45	mz l	10YR44 00						0	0	HR	35		M				Y
	45 70	ch	10YR81 00						0	0	HR	2		P				Y
4P	0 26	mzcl	10YR33 00						2	1	HR	3						Y
	26 46	mzcl	10YR44 00						0	0	CH	30		M				Y
	46 70	ch	10YR81 00						0	0	HR	2		P				Y soft Chalk
5	0 22	m l	10YR33 00						8	4	HR	15						Y
	22 50	m cl	10YR44 00						0	0	HR	15		M				Y
	50 70	ch	10YR81 00						0	0	HR	2		P				Y
6	0 25	mzcl	10YR33 00						10	7	HR	12						Y
	25 45	mzcl	10YR44 00						0	0	CH	50		M				Y
	45 70	ch	10YR81 00						0	0	HR	2		P				Y
7	0 28	mzcl	10YR43 00						10	6	HR	12						Y
	28 38	mzcl	10YR44 00						0	0	CH	10		M				Y
	38 70	ch	10YR81 00						0	0	HR	2		P				Y
8	0 26	mz l	10YR33 00						16	4	HR	25						Y
	26 65	ch	10YR81 00						0	0	HR	2		P				Y
9	0 26	mzcl	10YR33 00						2	1	HR	3						Y
	26 65	h	10YR81 00						0	0	HR	2		P				Y
10	0 25	mzcl	10YR33 00						16	5	HR	25						Y
	25 65	ch	10YR81 00						0	0	HR	2		P				Y

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	
11	0 20	m cl	10YR43 00						4	2	HR	10						Y	
	20 65	ch	10YR81 00						0	0	HR	2			P			Y	
12	0 27	mzcl	10YR33 00						16	6	HR	25						Y	
	27 65	ch	10YR81 00						0	0	HR	2			P			Y	
13	0 25	mzcl	10YR42 00						6	2	HR	15						Y	
	25 65	ch	10YR81 00						0	0	HR	2			P			Y	
14	0 28	mzcl	10YR43 00						10	3	HR	20						Y	
	28 38	mzcl	10YR44 00						0	0	HR	30			M			Y	
	38 65	ch	10YR81 00						0	0	HR	2			P			Y	
15	0 20	mzcl	10YR42 00						3	1	HR	20						Y	
	20 45	ch	10YR81 00						0	0	HR	2			P			Y	
16	0 35	m l	10YR42 00						3	1	HR	15						Y	
	35 65	ch	10YR81 00						0	0	HR	2			P			Y	
17	0 28	m l	10YR42 00						2	0	HR	10						Y	
	28 65	ch	10YR81 00						0	0	HR	2			P			Y	
18	0 25	mzcl	10YR42 00						6	1	HR	15						Y	
	25 65	ch	10YR81 00						0	0	HR	2			P			Y	
19	0 25	mzcl	10YR43 00						11	5	HR	20						Y	
	25 40	mzcl	10YR44 00						0	0	CH	40			M			Y	
	40 70	m l	10YR54 00						0	0	CH	65			M			Y	Imp fl t 70
20	0 30	mz l	10YR43 00						2	0	HR	8						Y	
	30 55	c	10YR44 54						0	0	HR	5			M			Y	
	55 68	h cl	10YR54 00						0	0	CH	20			M			Y	
	68 78	mzcl	10YR54 00						0	0	CH	50			M			Y	Imp fl nts 78
21	0 27	m l	10YR43 00						2	0	HR	8						Y	
	27 65	ch	10YR81 00						0	0	HR	2			P			Y	
22	0 25	mzcl	10YR43 00						9	4	HR	20						Y	
	25 65	ch	10YR81 00						0	0	HR	2			P			Y	
23	0 30	h cl	10YR44 00						12	0	HR	25						Y	
	30 55	h cl	10YR43 00						0	0	HR	15			M			Y	
	55 65	mzcl	10YR43 00						0	0	CH	30			M			Y	
	65 105	m cl	25Y 42 00						0	0	CH	40			M			Y	
	105 120	ch	10YR81 00						0	0	HR	2			P			Y	
24	0 28	mzcl	10YR43 00						4	2	HR	8						Y	
	28 38	m l	10YR44 00						0	0	HR	8			M			Y	
	38 65	ch	10YR81 00						0	0	HR	2			P			Y	

				MOTTLES			PED		STONES				STRUCT/	SUBS				
AMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
25	0 20	mz l	10YR43 00						12	6	HR	25						Y
	20 40	mzcl	10YR63 00						0	0	CH	50			M			Y
26	0 20	mzcl	10YR43 00						6	2	HR	15						Y
	20 45	mzcl	10YR63 00						0	0	CH	30			M			Y
	45 65	ch	10YR81 00						0	0	HR	2			P			Y
27	0 20	mzcl	10YR43 00						4	2	HR	15						Y
	20 40	mzcl	10YR63 00						0	0	CH	30			M			Y
	40 65	ch	10YR81 00						0	0	HR	2			P			Y
28	0 20	mzcl	10YR43 00						8	2	HR	15						Y
	20 65	ch	10YR81 00						0	0	HR	2			P			Y
29	0 30	mz l	10YR43 00						2	0	HR	10						Y
	30 40	mzcl	10YR63 00						0	0	CH	30			M			Y
	40 65	ch	10YR81 00						0	0	HR	2			P			Y
30	0 25	mzcl	10YR33 00						2	0	HR	15						Y
	25 65	ch	10YR81 00						0	0	HR	2			P			Y
31	0 23	m cl	10YR43 00						2	0	HR	15						Y
	23 40	h cl	10YR44 00						0	0	HR	5			M			Y
	40 58	c	75YR54 00	75YR58 00	C			S	0	0	HR	2			M			Y
	58 68	m cl	10YR54 00						0	0	HR	2			M			Y
	68 98	ch	10YR81 00						0	0	HR	2			P			Y
32	0 30	m cl	10YR43 00						2	0	HR	15						Y
	30 48	h cl	10YR54 00						0	0	HR	5			M			Y
	48 70	ch	10YR81 00						0	0	HR	2			P			Y
33	0 28	m cl	10YR43 00						6	0	HR	15						Y
	28 40	h cl	10YR44 00						0	0	HR	20			M			Y
	40 70	h l	10YR54 00						0	0	HR	10			M			Y
	70 100	ch	10YR81 00						0	0	HR	2			P			Y
34	0 25	mzcl	10YR43 00						8	2	HR	15						Y
	25 65	ch	10YR81 00						0	0	HR	2			P			Y
35	0 25	m cl	10YR43 00						2	0	HR	10						Y
	25 60	m cl	10YR63 00						0	0	CH	30			M			Y Imp fints 60
36	0 25	m cl	10YR43 00						12	4	HR	25						Y
	25 65	ch	10YR81 00						0	0	HR	2			P			Y
37	0 25	mzcl	10YR43 00						11	8	HR	18						Y
	25 48	m cl	10YR63 00						0	0	CH	30			M			Y
	48 78	ch	10YR81 00						0	0	HR	2			M			Y

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	
38	0 25	m cl	10YR43 00						8	4	HR	12						Y	
	25 38	h cl	10YR44 00						0	0	HR	5		M				Y	
	38 80	c	10YR46 00						0	0	HR	10		M				Y	
	80 110	ch	10YR81 00						0	0	HR	2		P				Y	
39	0 30	m cl	10YR43 00						1	0	HR	5						Y	
	30 50	h l	10YR44 00						0	0	HR	2		M				Y	
	50 82	c	10YR46 00						0	0	HR	2		M				Y	
	82 120	mzcl	10YR64 00						0	0	CH	50		M				Y	
40	0 25	mzcl	10YR43 00						4	4	HR	10						Y	
	25 45	mzcl	10YR63 00						0	0	CH	30		M				Y	
	45 70	ch	10YR81 00						0	0	HR	2		M				Y	
41	0 28	mzcl	10YR43 00						6	1	HR	10						Y	
	28 65	h	10YR81 00						0	0	HR	2		P				Y	
42	0 25	mzcl	10YR43 00						10	2	HR	15						Y	
	25 40	mz l	10YR63 00						0	0	CH	30		M				Y	
	40 70	ch	10YR81 00						0	0	HR	2		P				Y	
43	0 25	mzcl	10YR43 00						14	2	HR	25						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
44	0 28	mzcl	10YR43 00						8	0	HR	15						Y	
	28 38	mzcl	10YR53 00						0	0	CH	30		M				Y	
	38 70	h	10YR81 00						0	0	HR	2		P				Y	
45	0 25	m cl	10YR43 00						4	0	HR	10						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
46	0 25	m cl	10YR43 00						9	4	HR	25						Y	
	25 35	m cl	10YR64 00						0	0	CH	30		M				Y	Imp fl ts 35
47	0 28	m cl	10YR43 00						4	0	HR	10						Y	
	28 65	ch	10YR81 00						0	0	HR	2		P				Y	
48	0 28	mzcl	10YR43 00						4	0	HR	8						Y	
	28 65	ch	10YR81 00						0	0	HR	2		P				Y	
49	0 20	m cl	10YR43 00						1	0	HR	10						Y	
	20 65	ch	10YR81 00						0	0	HR	2		P				Y	
50	0 25	m cl	10YR43 00						1	0	HR	8						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
51	0 25	mzcl	10YR43 00						10	0	HR	25						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	

				MOTTLES			PED		STONES				STRUCT/	SUBS				
AMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC	
52	0 34	mzcl	10YR43 00						6	0	HR	15						Y	
	34 65	mcl	10YR64 81						0	0	HR	5		M				Y	Imp fl nts 65
53	0 30	mzcl	10YR43 00						11	0	HR	20						Y	Imp fl t 30
54	0 25	m cl	10YR42 00						9	5	HR	18						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
55	0 25	mz l	10YR42 00						0	0	CH	20						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
56	0 30	m l	10YR43 00						16	8	HR	25						Y	
	30 50	m cl	10YR43 00						0	0	CH	25		M				Y	
57	0 30	m cl	10YR43 00						16	8	HR	25						Y	
	30 47	m cl	10YR43 00						0	0	CH	35		M				Y	
	47 65	h	10YR81 00						0	0	HR	1		P				Y	
58	0 25	cl	10YR42 00						9	5	HR	15						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
59	0 28	m cl	10YR42 00						1	0	HR	6						Y	
	28 65	h	10YR81 00						0	0	HR	2		P				Y	
60	0 30	cl	10YR43 00						2	0	HR	5						Y	
	30 65	h	10YR72 00						0	0	HR	5		P				Y	
61	0 30	mz l	10YR43 00						2	0	HR	10						Y	
	30 37	cl	10YR44 00						0	0	HR	10		M				Y	
	37 40	mcl	10YR64 00						0	0	CH	35		M				Y	
62	0 25	cl	10YR43 00						9	1	HR	18						Y	
	25 65	h	10YR81 00						0	0	HR	2		P				Y	
63	0 25	m cl	10YR43 00						8	2	HR	15						Y	
	25 65	ch	10YR81 00						0	0	HR	2		P				Y	
64	0 22	mz l	10YR43 00						6	2	HR	15						Y	
	22 65	ch	10YR81 00						0	0		0		P				Y	
65	0 23	mzcl	10YR43 00						3	0	HR	10						Y	
	23 65	h	10YR81 00						0	0	HR	2		P				Y	
66	0 18	mzcl	10YR43 00						3	0	HR	10						Y	
	18 65	h	10YR81 00						0	0	HR	2		P				Y	
67	0 24	m cl	10YR53 00						0	0	CH	10						Y	
	24 65	ch	10YR81 00						0	0		0		P				Y	

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
68	0 25	m 1	10YR43 00						6	1	HR	10						Y
	25 38	m cl	10YR43 54						0	0	CH	25		M				Y
	38 65	ch	10YR81 00						0	0	HR	2		P				Y
69	0 30	m 1	10YR53 00						0	0	CH	25						Y
	30 65	ch	10YR81 00						0	0	HR	2		P				Y
70	0 25	mz 1	10YR43 00						0	0	CH	10						Y
	25 65	ch	10YR81 00						0	0	HR	2		P				Y
71	0 28	m cl	10YR44 00						2	0	HR	5						Y
	28 65	ch	10YR82 00						0	0	HR	2		P				Y
72	0 28	m 1	10YR44 00						2	6	HR	10						Y
	28 65	ch	10YR82 00						0	0	HR	2		P				Y
73	0 35	mz 1	10YR43 00						4	0	HR	8						Y
	35 65	ch	10YR81 00						0	0	HR	2		P				Y
74	0 30	mzcl	10YR52 00						0	0	CH	25						Y
	30 65	ch	10YR81 00						0	0	HR	2		P				Y
75	0 25	m cl	10YR52 00						0	0	HR	10						Y
	25 50	ch	10YR81 00						0	0	HR	2		P				Y
76	0 25	mzcl	10YR43 00						0	0	CH	25						Y
	25 65	ch	10YR81 00						0	0	HR	2		P				Y
77	0 27	mzcl	10YR42 00						0	0	CH	30						Y
	27 65	ch	10YR81 00						0	0	HR	2		P				Y
78	0 28	mzcl	10YR43 00						0	0	CH	15						Y
	28 65	ch	10YR81 00						0	0	HR	2		P				Y
79	0 22	mzcl	10YR52 00						3	0	CH	30						Y
	22 65	ch	10YR81 00						0	0	HR	2		P				Y