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West Sussex Minerals Plan
Objector Site 52: Lavant.
Agricultural Land Classification
ALC Map and Report
June 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

WEST SUSSEX MINERALS PLAN
OBJECTOR SITE 52: LAVANT.

1. Summary

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

1.2 The site comprises approximately 58 hectares of land to the west of Mid Lavant, which is situated to the north of Chichester in West Sussex. An Agricultural Land Classification (ALC) survey was carried out during June 1995. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land surveyed. A total of 38 borings were described 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. On the area towards the west of the site, information from a previous survey (ADAS Ref. 4203/063/95) has been used for the purposes of classification.

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 survey, the agricultural land on the site comprised cereals and oilseed rape. An area of woodland has also been mapped on the site. Two fields of peas in the south-east of the site were not surveyed so as to avoid damaging the crop, these are marked on the map accordingly.

1.5 The distribution of grades and subgrades is shown on the attached ALC map, the areas and extent are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

Table 1: Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
2	3.1	5.3	7.2
3a	2.5	4.3	5.8
3b	37.6	64.5	87.0
Woodland	2.5	4.3	100% (43.2 ha.)
Not surveyed	12.6	21.6	
Total area of site	58.3	100%	

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

1.7 The majority of the agricultural land on the site has been classified as Subgrade 3b, moderate quality land, with topsoil stoniness as the main limitation. Soils within this

mapping unit typically comprise moderately stony topsoils resting upon very stony subsoils. Topsoil stone measurements within this mapping unit found the volume of stones greater than 2cm in size to exceed 15%. Excessively stony topsoils can inhibit crop growth and establishment, and can increase production costs due to wear and tear on machinery and tyres. Topsoils and subsoils were found to be less stony in the Subgrade 3a mapping unit. Topsoils were found to contain between 10-15% stones greater than 2cm in size, which is sufficient to limit this land to Subgrade 3a due to the aforementioned topsoil stone limitation.

1.8 In the Grade 2 mapping unit, soils were found to be deep and relatively stoneless. However, the soils show a slight restriction upon the amount of profile available water for crop growth such that a classification of grade 2 due to droughtiness is appropriate. Due to the relatively moist climate which prevails at this locality, this land is also limited by a minor workability restriction.

2. Climate

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

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

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

2.4 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. At this location, the field capacity days are relatively high in a regional context, therefore the likelihood of soil wetness problems may be increased.

2.5 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 : Climatic Interpolations

Grid Reference	SU 840 081	SU 840 083
Altitude (m)	35	40
Accumulated Temperature (Day °C, Jan-June)	1509	1503
Average Annual Rainfall (mm)	852	860
Field Capacity (days)	179	181
Moisture Deficit, Wheat (mm)	109	108
Moisture Deficit, Potatoes (mm)	103	102
Overall Climatic Grade	1	1

3. Relief

3.1 The site slopes gently downwards from north to south, lying at an altitude of approximately 35-40m (AOD). Nowhere on the site do altitude or relief pose any limitation to agricultural use.

4. Geology and Soils

4.1 The published geological map (BGS, 1972) shows the underlying geology of the site to comprise valley gravel.

4.2 The published Soil Survey map (SSGB, 1967) shows the soils on the site to comprise the undifferentiated and extremely flinty phases of the Charity series. These are described as 'well drained fine silty and fine silty over clayey soils, locally very flinty, some shallow over flint gravel' (SSEW 1983).

4.3 Detailed field examination broadly confirms the published map. Soils across the site typically comprise medium silty clay loam topsoils and subsoils, the majority of which are shallow over gravel, although across some parts of the site soils are deeper.

5. Agricultural Land Classification

5.1 The location of the soil observation points are shown on the attached sample point map.

Grade 2

5.2 In the east of the site, soils are relatively deep over gravel. Soil profiles typically comprise medium silty clay loam topsoils which become heavier with depth, and tend to be slightly stony becoming moderately stony at depth. A combination of soil textures, structures and the local climatic regime means that there is a slight restriction upon the amount of profile available water for plant growth. This in turn can affect the level and consistency of crop yields such that a classification of Grade 2 is appropriate. The profiles are well drained, Wetness Class I, yet the high field capacity days at the site means that a Grade 2 classification due to a slight workability restriction is appropriate.

Subgrade 3a

5.3 An area of good quality Subgrade 3a land has been mapped towards the south-west of the site. This land has been the subject of a previous survey (ADAS Ref: 4203/063/95). Soils within this mapping unit typically comprise medium silty clay loam topsoils and upper subsoils resting upon heavy silty clay loam lower subsoils. Profiles tend to be moderately stony, becoming stoneless at depth. Topsoil stone measurements within this mapping unit found 11-15% flints greater than 2cm in size. This volume of stones in the topsoil is sufficiently high to restrict this land to Subgrade 3a.

Subgrade 3b

5.4 The main limitation within this mapping unit is topsoil stoniness, soils tending to be relatively shallow over gravel. Topsoil stone measurements on the site found that the volume of flints greater than 2cm in size across much of the site are sufficiently high to

limit the land to a classification of Subgrade 3b. The main effects of stones are to act as an impediment to cultivation, harvesting and crop growth and to cause a reduction in the available water capacity of a soil. A high topsoil stone content can increase production costs by causing extra wear and tear to implements and tyres. Crop quality may also be reduced, as can the establishment of precision drilled crops. These shallow, stony soils are also affected by a significant soil droughtiness restriction to Subgrade 3b.

ADAS Ref: 4203/128/95
MAFF Ref: EL 42/228

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1972), Sheet No. 317, Chichester, 1:50,000 Series (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 and accompanying legend.

Soil Survey of Great Britain (1967), Sheets SU70 and SU80, Soils of the West Sussex Coastal Plain.

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, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

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

Woodland

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

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (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 **ST** : strongly developed	**MD** : moderately developed
ped size	**F** : fine **C** : coarse	**M** : medium **VC** : very coarse
ped shape	**S** : single grain **GR** : granular **SAB** : sub-angular blocky **PL** : platy	**M** : massive **AB** : angular blocky **PR** : prismatic

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

SAMPLE NO.	GRID REF	ASPECT USE	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	SU84200850	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
2	SU83900840	WHT		000		1	2	056	-53	056	-47	4				DR	3B	I30
3	SU84000840	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
4	SU84100840	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
5	SU84200840	CER		000		1	2	033	-76	033	-70	4				ST	3B	SIEVED
7	SU83500830	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
8	SU83600830	WHT		000		1	2	000	0	000	0					DR	3B	I30
9	SU83700830	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
10	SU83800830	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
11	SU83900830	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
12	SU84000830	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
13	SU84100830	WHT		000		1	2	000	0	000	0					DR	3B	I30
14	SU84200830	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
15	SU84300830	WHT		000		1	2	039	-70	039	-64	4				ST	3B	SIEVED
16	SU84400830	OSR		000		1	2	000	0	000	0					ST	3B	SIEVED
17	SU83500820	WHT		000		1	2	061	-48	061	-42	3B				DR	3B	I40GH
18	SU83600820	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
19	SU83700820	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
20	SU83800820	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
21	SU83900820	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
22	SU84000820	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
23	SU84100820	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
24	SU84200820	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
25	SU84300820	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
26	SU84400820	OSR		000		1	2	000	0	000	0					DR	3B	SIEVED
27	SU84500820	OSR		000		1	2	000	0	000	0					ST	3B	SIEVED
28	SU83700810	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
29	SU83800810	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
30	SU84000810	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
31	SU84100810	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
32	SU84200810	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
34	SU84400810	OSR		000		1	2	000	0	000	0					DR	3B	I40
35	SU84500810	OSR		000		1	2	140	29	113	8	2				WD	2	
36	SU84600810	OSR		000		1	2	140	29	112	7	2				WD	2	
40	SU84100800	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
41	SU84200800	CER		000		1	2	000	0	000	0					ST	3B	SIEVED
42	SU84300800	WHT		000		1	2	000	0	000	0					ST	3B	SIEVED
43	SU84400800	OSR		000		1	2	000	0	000	0					DR	3B	SIEVED
44	SU84500800	OSR		000		1	2	130	21	121	18	2				WD	2	I00 HR

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	mzcl	10YR54 00						16	0	HR	25						
2	0-30	zl	10YR43 44						11	0	HR	20						
3	0-25	mzcl	10YR54 00						25	0	HR	10						
4	0-25	zl	10YR43 00						17	0	HR	25						
5	0-20	zl	10YR54 00						20	10	HR	30						
7	0-25	mzcl	10YR43 00						16	0	HR	25						
8	0-30	mzcl	10YR43 00						11	0	HR	18						
9	0-25	mzcl	10YR54 00						24	0	HR	24						
10	0-25	mzcl	10YR54 00						20	0	HR	25						
11	0-25	mzcl	10YR43 00						18	0	HR	25						
12	0-20	mzcl	10YR54 00						25	5	HR	30						
13	0-30	zl	10YR43 00						14	0	HR	20						
14	0-30	mzcl	10YR54 00						15	5	HR	30						
15	0-25	mzcl	10YR43 00						17	0	HR	20						
16	0-25	mzcl	10YR43 00						22	3	HR	30						
17	0-30	mzcl	10YR43 00						10	0	HR	16						
	30-40	mzcl	10YR44 00						0	0	HR	25		M				
18	0-25	mzcl	10YR43 00						16	0	HR	22						
19	0-30	mzcl	10YR54 00						18	0	HR	30						
20	0-25	mzcl	10YR54 00						16	0	HR	25						
21	0-25	mzcl	10YR43 00						16	0	HR	20						
22	0-25	mzcl	10YR54 00						25	0	HR	30						
23	0-30	mzcl	10YR43 00						20	0	HR	30						
24	0-25	mzcl	10YR54 00						18	0	HR	30						
25	0-25	mzcl	10YR43 00						18	0	HR	25						

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	0-30	mzcl	10YR54 00						13	0	HR	15						
27	0-30	zl	10YR43 00						16	0	HR	20						
28	0-25	mzcl	10YR54 00						16	0	HR	25						
29	0-25	mzcl	10YR54 00						15	2	HR	27						
30	0-25	mzcl	10YR54 00						45	0	HR	55						
31	0-25	zl	10YR43 00						18	0	HR	22						
32	0-30	mzcl	10YR54 00						18	0	HR	30						
	30-40	mzcl	25YR63 00						19	0	HR	30		M				
34	0-30	mzcl	10YR54 00						12	0	HR	15						
	30-40	mzcl	25YR63 00						0	0	HR	30		M				
35	0-25	mzcl	10YR43 00						0	0	HR	8						
	25-45	mzcl	10YR44 00						0	0	HR	10		M				
	45-65	mzcl	75YR44 00						0	0	HR	10		M				
	65-100	hzcl	75YR54 00						0	0	HR	15		M				
	100-120	hzcl	75YR54 00						0	0	HR	30		M				
36	0-25	mzcl	10YR43 00						0	0	HR	10						
	25-50	mzcl	10YR46 00						0	0	HR	10		M				
	50-100	mzcl	75YR54 00						0	0	HR	10		M				
	100-120	hzcl	75YR56 00						0	0	HR	35		M				
40	0-30	zl	10YR43 00						16	0	HR	20						
41	0-30	mzcl	10YR54 00						18	0	HR	30						
42	0-30	zl	10YR43 00						20	0	HR	25						
43	0-30	mzcl	10YR64 00						12	0	HR	15						
	30-40	mzcl	25YR63 00						0	0	HR	15		M				
44	0-30	mzcl	10YR43 00						0	0	HR	5						
	30-60	mzcl	10YR44 00						0	0	HR	2		M				
	60-75	hzcl	75YR54 00						0	0	HR	2		M				
	75-100	mzcl	75YR54 00						0	0	HR	30		M				