**A2**
**Kingsmead Quarry Extension,**
**Horton, Berkshire**
**Statement of Site Physical Characteristics**
**ALC Map and Soil Resource Maps**
**December, 1993**

## STATEMENT OF SITE PHYSICAL CHARACTERISTICS

## KINGSMEAD QUARRY EXTENSION, HORTON, BERKSHIRE

### Introduction

1.1 In November, 1993, a detailed Agricultural Land Classification (ALC) was made on 65.9 hectares of land east of the existing Kingsmead Quarry at Horton in Berkshire. The information obtained during this survey forms the basis of the following statement of physical characteristics.

1.2 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality and physical characteristics of the agricultural land affected by the quarry extension.

1.3 The classification has been made using 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 long-term limitations on its use for agriculture.

1.4 The fieldwork was carried out with an observation density of approximately one per hectare. A total of 44 borings and four soil pits was examined.

1.5 The table below provides the details of the grades found across the site and shows that the majority of the agricultural land has been classified as Subgrade 3a with some Subgrade 3b. Soil wetness is the key limitation on the Subgrade 3a land where there is clear evidence of seasonal waterlogging which, in combination with the heavy topsoil textures, restricts the flexibility of the land. The areas of Subgrade 3b have been downgraded on the basis of a flooding limitation. At the time of survey, these lowlying parts of the site were either under standing water or showed evidence of recent flooding. No detailed long-term flooding information was avaiable for the site and these lowlying areas are considered as Subgrade 3b at best.

1.6 Part of the application area includes some of the adjacent active minerals workings which have been classified as Urban. Other derelict areas on the site of old Manor Farm are classified as Non-agricultural.

**Table 1 : Distribution of Grades and Subgrades**

| Grade | Area (ha) | % of Site | % of Agricultural Area |
|---|---|---|---|
| 3a | 40.5 | 61.4 | 80.2 |
| 3b | 10.0 | 15.2 | 19.8 |
| Non-Agric | 5.4 | 8.2 | 100% (50.5ha) |
| Urban | 10.0 | 15.2 | |
| Total | 65.9 ha | 100% | |

1.7 The ALC information is shown on the attached map at a scale of 1:5,000. It is accurate at this level but any enlargement may be misleading. This map supercedes any previous ALC information for this site.

1.8 A general description of the grades and subgrades is provided in Appendix I. 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.

**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 the overall climatic limitation are annual average 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 5 kilometre 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 No local climatic factors such as exposure or frost risk affect the site.

**Table 2 : Climatic Interpolations**

| | |
|---|---|
| Grid Reference | TQ015750 |
| Altitude (m) | 16 |
| Accumulated Temperature (days) | 1497 |
| Average Annual Rainfall (mm) | 662 |
| Field Capacity (days) | 137 |
| Moisture Deficit, Wheat (mm) | 118 |
| Moisture Deficit, Potatoes (mm) | 114 |
| Overall Climatic Grade | 1 |

## Relief

3.1 The site is level and lowlying with some slight depressions near the river.

## Geology and Soils

4.1 The relevant geological sheet for the site (British Geological Survey, 1981) shows Alluvium adjacent to the Colne Brook with Floodplain Gravel on the slightly higher land to the west.

4.2 The published soils information for the site (Soil Survey of England and Wales, 1983) describes the soils as Waterstock series, mostly permeable loamy soils affected by groundwater. The more detailed ALC survey disagreed with this information, finding much heavier soils throughout.

## Agricultural Land Classification

5.1 The ALC information is provided on the attached ALC map and the location of the soil observation points is shown on the sample point map.

## Subgrade 3a

5.2 The majority of the agricultural land on the site has been placed in this grade with soil wetness as the single most limiting physical factor. The four soil pit descriptions in the appendices show the range of soils that exist on the site. The soils are typically Heavy Clay Loam topsoils which generally overlie upper and lower subsoils of Heavy Clay Loam or Clay texture. Profiles are normally gleyed within 40 cm and during the augering

of the site this degree of wetness was attributed to what were originally believed to be poorly structured subsoil horizons. However, detailed examination of subsoil structural conditions in the four soil pits confirmed the absence of any slowly permeable layers.

5.4 Given the observed wetness, the soils are generally placed in Wetness Class II. This, in combination with the heavy nature of the topsoils and the prevailing Field Capacity level (137 days) limits the land to Subgrade 3a. There will be a restriction on the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock as well as a reduction in the range of crops that can tolerate the wet conditions.

5.5 Pit 4 is typical of those parts of the site which also experience a soil droughtiness limitation. Gravel deposits (ie. over 70% stone) were encountered at approximately 70 cm with very stony lower subsoils above which restrict the amount of water available in the top120 cm for extraction by crop roots.

**Subgrade 3b**

5.6 The areas of poorer quality land have been delimited on the basis of flood risk. At the time of survey, the southern part of the site was under standing water and had clearly been in that condition for some time (the growing crop of oilseed rape had been killed in this area) whereas the northern area showed evidence of recent flooding. No detailed site specific flooding information was available at the time of survey and so this land is considered as at best Subgrade 3b.

5.7 The active minerals workings in the east of the site have been classified as Urban. The remains of Manor Farm and its associated roads have been classified as Non-agricultural.

**Soil Resources : Topsoil**

6.1 'Topsoil' relates to the organic-rich surface horizons. One topsoil unit has been identified across the site which is typically a 30 cm thick Heavy Clay Loam. The topsoil is typically dark grey brown (10YR42 or 10YR32) with a negligible stone content and a weakly or moderately developed coarse subangular blocky structure. A total topsoil resource of 151,500 $m^3$ is available.

## Soil Resources : Subsoil

7.1 'Subsoil' relates to the non-organic-rich subsurface horizons. Four subsoil units are recognised across the site although, in detail, the subsoils are quite variable. A total subsoil resource of 374,450 $m^3$ is available.

7.2 **Subsoil Map Unit A**
In the centre of the site a limited area of shallower soils exists. Pit 4 specifically relates to this area and shows a Clay subsoil that is approximately 35 cm thick, overlying Gravel deposits which occur at approximately 70 cm depth. The Clay is dark grey brown (10YR42) with a high stone content of approximately 60% hard rock at the base of the horizon. Above this stony layer, the structure of the Clay is described as moderately developed coarse subangular blocky. This horizon shows clear evidence of gleying but the structures are permeable.

7.3 **Subsoil Map Unit B**
In the north of the site, the subsoils are approximately 70 cm thick before becoming impenetrable to the auger and are generally a mixture of Clay and Heavy Clay Loam textures. Pits 2 and 3 are located in this area and show that at these points the soil resource does actually extend to depth. The figure of 70 cm thickness is therefore considered to be the minimum subsoil resource available in this map unit. The soils are grey brown (10YR52) or light grey brown (10YR62) with up to 25% hard rock present at depth. There is clear evidence of gleying but the structures are permeable, described as moderately developed coarse subangular blocky.

7.4 **Subsoil Map Unit C**
In the south of the site, the subsoils extend to depth (and are 90cm thick) and are generally a mixture of Clay and Heavy Clay Loam textures. Part of this area regularly floods and was under standing water at the time of survey. A range of subsoil colours exists from dark grey brown (10YR32) to light yellowish brown (2.5Y63). All the subsoils are clearly gleyed and some do contain poorly structured clays that are slowly permeable with very low porosity.

7.5 **Subsoil Map Unit D**
In the west of the site, a separate map unit has been identified where the lower subsoils are much lighter in texture. Pit 1 is located in this unit and is typical of these soils. A Clay upper subsoil that is approximately 55 cm thick rests on a Medium Sandy Loam lower subsoil of 35 cm thickness. The upper subsoils are brown (10YR53) with a negligible stone content and

clear evidence of gleying. The structures are permeable and are typically moderately developed coarse subangular blocky in nature. The lower subsoils are also brown but with up to 25% stone content. Given this stone content, the subsoil structural conditions are assessed as moderate and permeable though the gleying continues to depth.

# 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 oopen 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

## REFERENCES

British Geological Survey, Sheet Number 269, Windsor, 1:50,000, 1981.

MAFF, Agricultural Land Classification of England and Wales : Revised Guidelines and Criteria for Grading the Quality of Agricultural Land, 1988.

Meteorological Office, Climatological Data for Agricultural Land Classification, 1989.

Soil Survey of England and Wales, Sheet Number 6, Soils of South East England, 1:250,000, 1983.

Soil Survey of England and Wales, Soils and their Use in South East England, Bulletin Number 15, 1984.

# APPENDIX III

## DEFINITION OF SOIL WETNESS CLASS

**Wetness Class I**

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

**Wetness Class 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 180 days, but only wet within 40 cm depth for 31-90 days in most years.

**Wetness Class 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.

**Wetness Class IV**

The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth fro 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.

**Wetness Class V**

The soil profile is wet within 40 cm depth for 211-335 days in most years.

**Wetness Class VI**

The soil profile is wet within 40 cm depth for more than 335 days in most years.

# APPENDIX IV

# SOIL PIT AND SOIL BORING DESCRIPTIONS

**Contents :**

**Sample Point Map**

**Soil Abbreviations - explanatory note**

**Database Printout - boring level information**

**Database Printout - horizon level information**

# SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

## Boring Header Information

1. **GRID REF** : national 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 measured by a hand-held optical clinometer.

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

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

6. **MB (WHEAT/POTS)** : Moisture Balance.

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

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

| | | |
|---|---|---|
| **MREL** : Microrelief limitation | **FLOOD** : Flood risk | **EROSN** : Soil erosion risk |
| **EXP** : Exposure limitation | **FROST** : Frost | **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 | **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 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

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

6. **STONE LITH** : One of the following is used.

**HR** : all hard rocks and stones
**CH** : chalk
**ZR** : soft, argillaceous, or silty rocks
**MSST** : soft, medium grained sandstone
**SI** : soft weathered igneous/metamorphic rock
**SLST** : soft oolitic or dolimitic limestone
**FSST** : soft, fine grained sandstone
**GH** : gravel with non-porous (hard) stones
**GH** : gravel with non-porous (hard) stones
Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

7. **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

8. **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

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

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

11. **IMP** : If the profile is impenetrable a 'Y' will appear in this column at the appropiate horizon.

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

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

14. 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 | USE | ASPECT | GRDNT | GLEY | SPL | --WETNESS-- CLASS | GRADE | -WHEAT- AP | MB | -POTS- AP | MB | M.REL DRT | FLOOD | EROSN EXP | FROST DIST | CHEM LIMIT | ALC | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1P | TQ01207480 | | | | 050 | | 1 | 2 | 151 | 33 | 117 | 3 | 2 | | | | WE | 2 | WEDR |
| 2 | TQ01807560 | ARA | | | 000 | 030 | 4 | 3B | 126 | 8 | 103 | -11 | 3A | | | | WE | 3B | SPL |
| 2P | TQ01657515 | PLO | | | 032 | | 2 | 3A | 152 | 34 | 117 | 3 | 2 | | | | WE | 3A | |
| 3 | TQ01907515 | ARA | | | 025 | | 2 | 3A | 149 | 31 | 113 | -1 | 2 | | | | WE | 3A | NO SPL |
| 3P | TQ01857537 | ARA | | | 035 | | 2 | 3A | 139 | 21 | 118 | 4 | 2 | | | | WE | 3A | |
| 4 | TQ01707550 | ARA | | | 042 | | 1 | 1 | 148 | 30 | 116 | 2 | 2 | | | | DR | 2 | NO SPL |
| 4P | TQ01407480 | PLO | | | 034 | | 2 | 3A | 104 | -14 | 111 | -3 | 3A | | | | WE | 3A | PIT 110 |
| 5 | TQ01807550 | ARA | | | 030 | | 2 | 2 | 101 | -17 | 113 | -1 | 3A | | | | DR | 3A | IMPNOSPL |
| 6 | TQ01907550 | ARA | | | 025 | | 2 | 3A | 83 | -35 | 94 | -20 | 3B | | | | DR | 3A | IMPNOSPL |
| 9 | TQ01807540 | ARA | | | 032 | 032 | 4 | 3B | 101 | -17 | 106 | -8 | 3A | | | | WE | 3B | SPL |
| 10 | TQ01907540 | ARA | | | 025 | 025 | 4 | 3B | 125 | 7 | 102 | -12 | 3A | | | | WE | 3B | SPL |
| 12 | TQ01707530 | ARA | | | 028 | | 2 | 3A | 151 | 33 | 113 | -1 | 2 | | | | WE | 3A | NO SPL |
| 13 | TQ01807530 | ARA | | | 000 | | 2 | 3A | 101 | -17 | 117 | 3 | 3A | | | | WE | 3A | IMPNOSPL |
| 14 | TQ01907530 | ARA | | | 030 | 055 | 3 | 3B | 126 | 8 | 112 | -2 | 2 | | | | WE | 3B | SPL |
| 16 | TQ01607520 | PLO | | | 050 | | 1 | 2 | 119 | 1 | 111 | -3 | 3A | | | | WE | 2 | |
| 17 | TQ01707520 | PLO | | | 038 | | 2 | 3A | 117 | -1 | 115 | 1 | 3A | | | | WE | 3A | |
| 18 | TQ01807520 | ARA | | | 032 | | 2 | 3A | 135 | 17 | 117 | 3 | 2 | | | | WE | 3A | IMPNOSPL |
| 23 | TQ01507510 | PLO | | | 055 | 055 | 2 | 3A | 114 | -4 | 113 | -1 | 3A | | | | WE | 3A | DR |
| 24 | TQ01607510 | PLO | | | 045 | 045 | 3 | 3B | 107 | -11 | 108 | -6 | 3A | | | | WE | 3A | |
| 25 | TQ01707510 | PLO | | | 045 | 045 | 3 | 3B | 124 | 6 | 113 | -1 | 2 | | | | WE | 3B | |
| 30 | TQ01507500 | PLO | | | 045 | 045 | 3 | 3B | 113 | -5 | 114 | 0 | 3A | | | | WE | 3B | |
| 31 | TQ01607500 | ARA | | | 032 | | 2 | 3A | 76 | -42 | 76 | -38 | 3B | | | | WE | 3A | IMPX3 |
| 32 | TQ01707500 | PLO | | | 030 | 030 | 4 | 3B | 146 | 28 | 111 | -3 | 2 | | | | WE | 3B | QSPL |
| 36 | TQ01407490 | PLO | | | 035 | | 2 | 3A | 91 | -27 | 97 | -17 | 3B | | | | DR | 3B | IMP60Q3A |
| 37 | TQ01507490 | PLO | | | 035 | 035 | 2 | 3A | 95 | -23 | 101 | -13 | 3B | | | | WE | 3B | |
| 38 | TQ01607490 | PLO | | | 000 | | 1 | 2 | 154 | 36 | 117 | 3 | 2 | | | | DR | 2 | AUGD 100 |
| 39 | TQ01707490 | PLO | | | 059 | | 1 | 2 | 111 | -7 | 120 | 6 | 3A | | | | DR | 3A | I78-Q.DR |
| 40 | TQ01107480 | PLO | | | 039 | 039 | 3 | 3A | 147 | 29 | 108 | -6 | 2 | | | | WE | 3A | |
| 41 | TQ01207480 | PLO | | | 046 | 046 | 3 | 3A | 150 | 32 | 109 | -5 | 2 | | | | WE | 3A | |
| 42 | TQ01507480 | PLO | | | 035 | 035 | 4 | 3B | 159 | 41 | 112 | -2 | 2 | | | | WE | 3B | |
| 43 | TQ01407480 | PLO | | | 036 | 036 | 4 | 3B | 95 | -23 | 103 | -11 | 3B | | | | WE | 3B | IMP65 |
| 44 | TQ01507480 | PLO | | | 045 | 045 | 3 | 3B | 96 | -22 | 106 | -8 | 3B | | | | WE | 3B | |
| 45 | TQ01607480 | PLO | | | 030 | 040 | 3 | 3A | 96 | -22 | 109 | -5 | 3B | | | | WE | 3A | I70-Q DR |
| 46 | TQ01107470 | PLO | | | 032 | | 2 | 2 | 158 | 40 | 115 | 1 | 2 | | | | WE | 2 | WEDR |
| 47 | TQ01207470 | PLO | | | 034 | | 2 | 3A | 154 | 36 | 113 | -1 | 2 | | | | WE | 3A | |
| 48 | TQ01307470 | PLO | | | 034 | 034 | 4 | 3B | 112 | -6 | 106 | -8 | 3A | | | | WE | 3B | IMP90 |
| 49 | TQ01407470 | PLO | | | 029 | | 2 | 3A | 119 | 1 | 112 | -2 | 3A | | | | WE | 3A | IMP92 |
| 50 | TQ01507470 | PLO | | | 060 | | 1 | 2 | 147 | 29 | 117 | 3 | 2 | | | | WE | 2 | WEDR |
| 51 | TQ01607470 | PLO | | | 000 | | 1 | 1 | 114 | -4 | 117 | 3 | 3A | | | | DR | 3A | I80-Q DR |
| 54 | TQ01307460 | PLO | | | 035 | 055 | 3 | 3B | 147 | 29 | 111 | -3 | 2 | | | | WE | 3B | |
| 55 | TQ01407460 | PLO | | | 045 | 045 | 3 | 3B | 141 | 23 | 110 | -4 | 2 | | | | WE | 3B | |
| 56 | TQ01507460 | PLO | | | 032 | | 2 | 3A | 112 | -6 | 114 | 0 | 3A | | | | WE | 3A | IMP 80 |

| SAMPLE NO. | GRID REF | USE | ASPECT | | | --WETNESS-- CLASS | GRADE | -WHEAT- AP | MB | -POTS- AP | MB | M.REL DRT | FLOOD | EROSN EXP | FROST DIST | CHEM LIMIT | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | TQ01607460 | PLO | | 060 | | 1 | 2 | 149 | 31 | 118 | 4 | 2 | | | | DR | 2 | Q MCL TS |
| 58 | TQ01207450 | PLO | | 035 | 035 | 4 | 3B | 141 | 23 | 104 | -10 | 2 | | | | WE | 3B | |
| 59 | TQ01307450 | PLO | | 030 | 030 | 4 | 3B | 135 | 17 | 109 | -5 | 2 | | | | WE | 3B | FLOODED |
| 60 | TQ01407450 | PLO | | 000 | | 1 | 2 | 96 | -22 | 103 | -11 | 3B | | | | DR | 3B | I62-Q DR |
| 61 | TQ01507450 | PLO | | 030 | 030 | 4 | 3B | 107 | -11 | 105 | -9 | 3A | | | | WE | 3B | PLSTC 60 |
| 62 | TQ01307440 | OSR | | 035 | 035 | 4 | 3B | 143 | 25 | 105 | -9 | 2 | | | | WE | 3B | PLST 70 |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1P | 0-29 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | WKCSAB | FR | | | | |
| | 29-50 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | MDCSAB | FM | M | Y | | |
| | 50-70 | c | 10YR53 00 | 10YR56 00 | C | | | Y | 0 | 0 | | 0 | MDCSAB | FM | M | Y | | |
| | 70-85 | mcl | 10YR53 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 1 | MDCSAB | FR | M | Y | | |
| | 85-110 | msl | 10YR53 00 | 75YR56 00 | C | | | Y | 0 | 0 | HR | 1 | MDCSAB | FR | M | | | |
| | 110-120 | msl | 10YR53 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 25 | | | M | | | |
| 2 | 0-30 | c | 10YR42 00 | 000C00 00 | C | | | Y | 0 | 0 | HR | 1 | | | | | | |
| | 30-70 | c | 10YR41 00 | 000C00 00 | C | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| | 70-120 | zc | 10YR52 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| 2P | 0-32 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 2 | MCSAB | FM | | Y | | |
| | 32-65 | c | 10YR52 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | MCSAB | FR | M | Y | | |
| | 65-120 | scl | 10YR62 00 | 75YR58 00 | M | | | Y | 0 | 0 | | 0 | MCSAB | FR | M | Y | | |
| 3 | 0-25 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 25-60 | c | 10YR52 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | M | | | |
| | 60-72 | c | 10YR41 00 | 000C00 00 | C | | | Y | 0 | 0 | | 0 | | | P | Y | | |
| | 72-120 | hcl | 25Y 63 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | M | | | |
| 3P | 0-35 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | WCSAB | FR | | | | |
| | 35-42 | hcl | 10YR42 00 | 10YR56 00 | C | | | Y | 0 | 0 | | 0 | MCSAB | FR | M | Y | | |
| | 42-100 | c | 10YR52 00 | 10YR58 00 | M | | | Y | 0 | 0 | | 0 | MCSAB | FR | M | Y | | |
| | 100-120 | c | 10YR61 00 | 10YR58 00 | M | | | Y | 0 | 0 | HR | 25 | | | M | | | |
| 4 | 0-32 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 4 | | | | | | |
| | 32-42 | c | 10YR52 00 | | | | | | 0 | 0 | HR | 1 | | | M | | | |
| | 42-80 | c | 25Y 53 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | M | | | |
| | 80-120 | hcl | 25Y 63 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | M | | | |
| 4P | 0-34 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | WDCSAB | FR | | | | |
| | 34-62 | c | 25Y 42 00 | 10YR56 00 | M | | | Y | 0 | 0 | | 0 | MDCSAB | FM | M | Y | | |
| | 62-70 | c | 10YR42 00 | | | | | Y | 0 | 0 | HR | 59 | | | M | | | |
| | 70-120 | gh | 25Y 42 00 | | | | | Y | 0 | 0 | | 0 | | | M | | | |
| 5 | 0-30 | mcl | 10YR42 00 | | | | | | 1 | 0 | HR | 6 | | | | | | |
| | 30-55 | c | 10YR51 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | M | | | |
| | 55-70 | mcl | 10YR51 00 | 000C00 00 | M | | | Y | 0 | 0 | HR | 10 | | | M | | | |
| 6 | 0-25 | mcl | 10YR42 00 | | | | | | 4 | 0 | HR | 15 | | | | | | |
| | 25-65 | c | 10YR41 00 | 000C00 00 | M | | | Y | 0 | 0 | HR | 15 | | | M | | | |
| 9 | 0-32 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 32-52 | c | 10YR52 00 | 000C00 00 | C | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| | 52-80 | c | 10YR52 00 | 000C00 00 | M | | | Y | 0 | 0 | HR | 1 | | | P | Y | | Y |
| 10 | 0-25 | hcl | 10YR42 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 25-60 | c | 10YR52 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| | 60-120 | c | 10YR61 00 | 000C00 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 0-28 | c | 10YR42 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 28-45 | c | 10YR52 00 | 000C00 | 00 | C | | Y | 0 | 0 | | 0 | | M | | | | |
| | 45-120 | hcl | 10YR62 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | | |
| 13 | 0-28 | hcl | 10YR42 00 | 000C00 | 00 | C | | Y | 0 | 0 | HR | 2 | | | | | | |
| | 28-45 | c | 10YR52 00 | 000C00 | 00 | C | | Y | 0 | 0 | | 0 | | M | | | | |
| | 45-70 | c | 10YR53 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | | |
| 14 | 0-30 | hcl | 10YR42 00 | | | | | | 1 | 0 | HR | 3 | | | | | | |
| | 30-55 | c | 10YR52 00 | 000C00 | 00 | C | | Y | 0 | 0 | | 0 | | M | | | | |
| | 55-80 | c | 10YR62 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| | 80-100 | hcl | 10YR62 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| 16 | 0-30 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | |
| | 30-50 | c | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 50-68 | c | 25Y 52 00 | 75YR46 | 00 | C | | Y | 0 | 0 | HR | 1 | | M | | | | |
| | 68-100 | c | 25Y 52 00 | 75YR46 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | | |
| 17 | 0-25 | hcl | 25Y 42 00 | | | | | | 1 | 0 | HR | 2 | | | | | | |
| | 25-38 | c | 25Y 42 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 38-70 | c | 25Y 53 00 | 75YR48 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | | |
| | 70-88 | mcl | 10YR53 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | | |
| | 88-100 | fscl | 10YR53 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | | |
| 18 | 0-32 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 32-50 | c | 10YR53 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | | |
| | 50-100 | hcl | 25Y 63 00 | 000C00 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | | |
| 23 | 0-35 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 35-55 | c | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 55-70 | c | 10YR52 00 | 75YR58 | 71 | C | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| | 70-90 | c | 10YR53 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| 24 | 0-25 | hcl | 10YR43 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 25-45 | c | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 45-78 | c | 10YR52 00 | 75YR58 | 71 | C | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| | 78-85 | c | 10YR52 00 | 75YR58 | 71 | M | | Y | 0 | 0 | HR | 5 | | M | | | Y | |
| 25 | 0-30 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 30-45 | c | 10YR42 00 | 10YR58 | 00 | F | | | 0 | 0 | HR | 1 | | M | | | | |
| | 45-60 | c | 10YR42 00 | 75YR58 | 00 | M | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 60-75 | c | 10YR53 00 | 10YR58 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| | 75-95 | c | 10YR52 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | Y | |
| | 95-100 | scl | 10YR62 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | Y | |
| 30 | 0-35 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 35-45 | c | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 45-60 | c | 10YR52 00 | 75YR58 | 71 | M | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 60-70 | hcl | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| | 70-80 | mcl | 25Y 63 00 | 10YR68 | 00 | M | | Y | 0 | 0 | HR | 1 | | M | | | Y | |
| | 80-82 | c | 10YR52 00 | 10YR58 | 00 | M | | Y | 0 | 0 | HR | 5 | | M | | | Y | |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 0-32 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 32-45 | c | 10YR52 00 | 000C00 | 00 | C | | Y | 0 | 0 | HR | 5 | | M | | | | |
| 32 | 0-30 | hcl | 10YR42 00 | | | | | | 0 | 0 | | 0 | | | | | | |
| | 30-55 | c | 10YR52 00 | 75YR58 | 00 | M | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| | 55-70 | c | 10YR52 00 | 75YR58 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| | 70-120 | scl | 10YR62 00 | 10YR58 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| 36 | 0-35 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 35-48 | c | 25Y 42 00 | 75YR56 | 00 | C | | Y | 0 | 0 | HR | 2 | | M | | | | |
| | 48-60 | c | 25Y 53 00 | 75YR56 | 00 | M | | Y | 0 | 0 | HR | 5 | | P | | | | |
| 37 | 0-35 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 35-45 | c | 25Y 42 00 | 10YR56 | 00 | C | | Y | 0 | 0 | | 0 | | M | Y | | | |
| | 45-60 | hcl | 25Y 63 00 | 10YR56 | 00 | M | | Y | 0 | 0 | HR | 5 | | M | | | | |
| 38 | 0-30 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 30-40 | c | 10YR43 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 40-58 | c | 10YR46 00 | 10YR58 | 00 | F | | | 0 | 0 | | 0 | | M | | | | |
| | 58-120 | mcl | 10YR56 00 | 10YR53 | 00 | F | | | 0 | 0 | | 0 | | M | | | | |
| 39 | 0-35 | hcl | 10YR42 00 | 10YR56 | 00 | F | | | 0 | 0 | HR | 1 | | | | | | |
| | 35-59 | mzcl | 10YR31 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | |
| | 59-70 | c | 10YR42 52 | 10YR58 | 00 | C | | Y | 0 | 0 | | 0 | | M | | | | |
| | 70-78 | hcl | 10YR42 00 | 10YR58 | 00 | C | | Y | 0 | 0 | HR | 25 | | M | | | | |
| 40 | 0-35 | mcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 35-39 | c | 25Y 42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 39-75 | c | 25Y 53 00 | 75YR56 | 00 | M | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| | 75-85 | hcl | 25Y 63 00 | 75YR56 | 00 | C | | Y | 0 | 0 | HR | 3 | | M | | | Y | |
| | 85-120 | msl | 25Y 63 00 | 75YR56 | 00 | M | | Y | 0 | 0 | HR | 2 | | M | | | Y | |
| 41 | 0-35 | mcl | 10YR42 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 35-46 | c | 25Y 53 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | |
| | 46-70 | c | 25Y 53 00 | 10YR56 | 00 | C | | Y | 0 | 0 | HR | 1 | | P | | | Y | |
| | 70-85 | mcl | 25Y 64 00 | 75YR56 | 00 | C | | Y | 0 | 0 | HR | 1 | | M | | | Y | |
| | 85-120 | msl | 25Y 63 00 | 75YR56 | 00 | C | | Y | 0 | 0 | HR | 1 | | M | | | Y | |
| 42 | 0-35 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 35-50 | c | 25Y 53 00 | 10YR56 | 00 | M | | Y | 0 | 0 | HR | 2 | | P | | | Y | |
| | 50-75 | hcl | 25Y 53 62 | 75YR56 | 00 | M | 00MN00 | 00 Y | 0 | 0 | HR | 1 | | M | | | Y | |
| | 75-105 | mcl | 25Y 53 62 | 75YR56 | 00 | M | | Y | 0 | 0 | | 0 | | M | | | Y | |
| | 105-120 | fsl | 25Y 63 00 | 10YR56 | 00 | C | | Y | 0 | 0 | HR | 5 | | G | | | Y | |
| 43 | 0-36 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 36-56 | c | 25Y 42 00 | 10YR56 | 00 | C | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 56-65 | hcl | 25Y 63 00 | 10YR56 | 00 | M | | Y | 0 | 0 | HR | 5 | | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 | 0-30 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 30-45 | hcl | 10YR42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 45-68 | c | 25Y 42 00 | 10YR56 00 | C | | | Y | 0 | 0 | HR | 2 | | P | | | Y | |
| 45 | 0-30 | mcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 30-35 | hcl | 10YR32 00 | 10YR58 00 | C | | | Y | 0 | 0 | HR | 5 | | M | | | | |
| | 35-40 | c | 10YR32 53 | 10YR58 56 | C | | | Y | 0 | 0 | HR | 5 | | M | | | | |
| | 40-60 | c | 10YR53 00 | 75YR56 00 | M | | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| | 60-70 | c | 10YR53 00 | 10YR58 00 | M | | | Y | 0 | 0 | HR | 10 | | M | | | | |
| 46 | 0-32 | mcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 32-55 | mcl | 25Y 64 63 | 75YR56 00 | M | | | Y | 0 | 0 | HR | 1 | | M | | | | |
| | 55-110 | msl | 25Y 63 00 | 75YR58 00 | M | | | Y | 0 | 0 | | 0 | | M | | | | |
| | 110-120 | lms | 25Y 63 00 | 75YR58 00 | M | | | Y | 0 | 0 | | 0 | | G | | | | |
| 47 | 0-34 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 34-50 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | | |
| | 50-75 | hcl | 25Y 63 64 | 75YR56 00 | M | | | Y | 0 | 0 | HR | 1 | | M | | | | |
| | 75-120 | msl | 25Y 63 00 | 75YR58 00 | M | | | Y | 0 | 0 | HR | 2 | | M | | | | |
| 48 | 0-28 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 28-34 | c | 25Y 42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 34-75 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 75-90 | hcl | 25Y 63 00 | 75YR56 00 | M | | 00MN00 00 | Y | 0 | 0 | HR | 3 | | M | | | Y | |
| 49 | 0-29 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 29-40 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | | |
| | 40-70 | hcl | 25Y 42 00 | 75YR56 00 | M | | | Y | 0 | 0 | HR | 3 | | M | | | | |
| | 70-92 | hcl | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | HR | 15 | | M | | | | |
| 50 | 0-30 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 30-48 | hcl | 10YR42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 48-60 | c | 10YR43 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 60-80 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | M | | | | |
| | 80-120 | hcl | 10YR53 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 5 | | M | | | | |
| 51 | 0-30 | mcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 30-57 | hcl | 10YR44 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | |
| | 57-78 | mcl | 25Y 54 00 | 10YR58 00 | C | | | | 0 | 0 | | 0 | | M | | | | |
| | 78-80 | mcl | 25Y 54 00 | 10YR58 00 | C | | | | 0 | 0 | HR | 25 | | M | | | | |
| 54 | 0-28 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 28-35 | c | 25Y 42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 35-40 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | | |
| | 40-55 | c | 25Y 63 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | M | | | | |
| | 55-70 | c | 25Y 63 00 | 75YR56 00 | M | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 70-120 | mcl | 25Y 63 00 | 75YR56 00 | M | | 00MN00 00 | Y | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | 0-29 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 29-45 | c | 25Y 42 00 | 10YR56 00 | F | | | | 0 | 0 | | 0 | | M | | | | |
| | 45-68 | c | 25Y 42 00 | 75YR56 00 | M | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 68-88 | mzcl | 10YR42 00 | | | | | Y | 0 | 0 | | 0 | | M | | | Y | |
| | 88-120 | zc | 25Y 31 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | M | | | Y | |
| 56 | 0-28 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 28-32 | c | 10YR42 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 32-40 | c | 25Y 64 00 | 10YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | | |
| | 40-70 | hcl | 10YR56 00 | | | | | Y | 0 | 0 | | 0 | | M | | | | |
| | 70-80 | mcl | 10YR56 00 | 75YR56 00 | C | | | Y | 0 | 0 | HR | 5 | | M | | | | |
| 57 | 0-34 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 34-60 | c | 10YR43 00 | | | | | | 0 | 0 | | 0 | | M | | | | |
| | 60-85 | c | 10YR52 00 | 75YR46 58 | M | | | Y | 0 | 0 | HR | 2 | | M | | | | |
| | 85-120 | mcl | 10YR53 00 | 10YR56 58 | M | | | Y | 0 | 0 | | 0 | | M | | | | |
| 58 | 0-35 | c | 10YR42 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 35-45 | c | 25Y 42 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 45-75 | c | 25Y 62 63 | 75YR56 00 | M | | | Y | 0 | 0 | | 0 | | P | | | Y | |
| | 75-120 | hcl | 25Y 62 00 | 75YR56 00 | C | | | Y | 0 | 0 | | 0 | | M | | | Y | |
| 59 | 0-30 | hcl | 10YR32 00 | | | | | | 0 | 0 | | 0 | | | | | | |
| | 30-59 | c | 10YR32 00 | 10YR56 00 | C | | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| | 59-120 | c | 10YR53 00 | 10YR56 00 | C | | | Y | 0 | 0 | | 0 | | M | | | Y | |
| 60 | 0-39 | hcl | 10YR42 00 | | | | | | 0 | 0 | HR | 3 | | | | | | |
| | 39-58 | hcl | 10YR44 00 | | | | | | 0 | 0 | HR | 3 | | M | | | | |
| | 58-62 | hcl | 10YR44 00 | | | | | | 0 | 0 | HR | 25 | | M | | | | |
| 61 | 0-30 | hcl | 10YR32 00 | | | | | | 0 | 0 | HR | 1 | | | | | | |
| | 30-60 | c | 05Y 31 41 | 10YR58 00 | M | | | Y | 0 | 0 | HR | 2 | | P | Y | | Y | |
| | 60-90 | c | 05Y 31 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| 62 | 0-35 | c | 10YR32 00 | | | | | | 0 | 0 | | 0 | | | | | | |
| | 35-70 | c | 25Y 42 00 | 10YR58 00 | M | | | Y | 0 | 0 | | 0 | | P | Y | | Y | |
| | 70-120 | hcl | 25Y 62 63 | 10YR56 00 | M | | | Y | 0 | 0 | | 0 | | M | | | | |

SOIL PIT DESCRIPTION

Site Name : KINGSMEAD QUARRY, HORTON  Pit Number : 1P

Grid Reference: TQ

Average Annual Rainfall : 662 mm
Accumulated Temperature : 1497 degree days
Field Capacity Level : 137 days
Land Use :
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---|---|---|---|---|---|---|
| 0- 29 | HCL | 10YR32 00 | 0 | 1 | | WKCSAB |
| 29- 50 | HCL | 10YR42 00 | 0 | 1 | | MDCSAB |
| 50- 70 | C | 10YR53 00 | 0 | 0 | C | MDCSAB |
| 70- 85 | MCL | 10YR53 00 | 0 | 1 | M | MDCSAB |
| 85-110 | MSL | 10YR53 00 | 0 | 1 | C | MDCSAB |
| 110-120 | MSL | 10YR53 00 | 0 | 25 | M | |

Wetness Grade : 2

Wetness Class : I
Gleying :050 cm
SPL : No SPL

Drought Grade : 2

APW : 151mm MBW : 33 mm
APP : 117mm MBP : 3 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : KINGSMEAD QUARRY, HORTON  Pit Number : 2P

Grid Reference: TQ 20

Average Annual Rainfall : 662 mm
Accumulated Temperature : 1497 degree days
Field Capacity Level : 137 days
Land Use : Bare Soil
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---|---|---|---|---|---|---|
| 0- 32 | HCL | 10YR32 00 | 0 | 2 | | MCSAB |
| 32- 65 | C | 10YR52 00 | 0 | 0 | C | MCSAB |
| 65-120 | SCL | 10YR62 00 | 0 | 0 | M | MCSAB |

Wetness Grade : 3A

Wetness Class : II
Gleying :032 cm
SPL : No SPL

Drought Grade : 2

APW : 152mm MBW : 34 mm
APP : 117mm MBP : 3 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : KINGSMEAD QUARRY, HORTON  Pit Number : 3P

Grid Reference: TQ 40

Average Annual Rainfall : 662 mm
Accumulated Temperature : 1497 degree days
Field Capacity Level : 137 days
Land Use : Arable
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---|---|---|---|---|---|---|
| 0- 35 | HCL | 10YR32 00 | 0 | 1 | | WCSAB |
| 35- 42 | HCL | 10YR42 00 | 0 | 0 | C | MCSAB |
| 42-100 | C | 10YR52 00 | 0 | 0 | M | MCSAB |
| 100-120 | C | 10YR61 00 | 0 | 25 | M | |

Wetness Grade : 3A

Wetness Class : II
Gleying :035 cm
SPL : No SPL

Drought Grade : 2

APW : 139mm MBW : 21 mm
APP : 118mm MBP : 4 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : KINGSMEAD QUARRY, HORTON  Pit Number : 4P

Grid Reference: TQ01407480  Average Annual Rainfall : 662 mm
Accumulated Temperature : 1497 degree days
Field Capacity Level : 137 days
Land Use : Bare Soil
Slope and Aspect : degrees

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---|---|---|---|---|---|---|
| 0- 34 | HCL | 10YR42 00 | 0 | 1 | | WDCSAB |
| 34- 62 | C | 25Y 42 00 | 0 | 0 | M | MDCSAB |
| 62- 70 | C | 10YR42 00 | 0 | 59 | | |
| 70-120 | GH | 25Y 42 00 | 0 | 0 | | |

Wetness Grade : 3A  Wetness Class : II
Gleying :034 cm
SPL : No SPL

Drought Grade : 3A  APW : 104mm  MBW : -14 mm
APP : 111mm  MBP : -3 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness