

SOUTH WEST BICESTER **OXFORDSHIRE**

GROUND INVESTIGATION

FACTUAL AND INTERPRETATIVE REPORT

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Prepared for:

A. D. Woodley Ltd c/o Mr J H Gould The Old Courtyard Copthall Farm Breakspear Road South Ickenham Middlesex **UB108HP**

Prepared by:

Pell Frischmann Consultants Ltd George House George Street Wakefield. West Yorkshire WFI 1LY



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EXECUTIVE SUMMARY

Pell Frischmann was instructed by A D Woodley and Sons to carry out a Site Investigation for the proposed development of the land surrounding Whitelands Farm. The purpose of the report is to highlight the geotechnical and environmental considerations that should be addressed as part of the proposed scheme.

The superficial deposits comprise localised deposits of alluvium made ground and the completely weathered upper surface of the solid geology. The underlying solid geology comprises Kellaways Clay, Combrash and Forest Marble Formations.

A total of 11 percussive boreholes and 110 trial pits were undertaken as part of this investigation. The exploratory holes confirmed the anticipated ground conditions, together with some additional areas of made ground.

It will be possible to construct shallow foundations on the majority of the site. Only limited areas of made ground, peat or soft clay are deemed unsuitable. Sulphate tests on a limited number of samples show that the soils fall into Class 1 of the BRE Digest, with the exception of a limited number of made ground samples.

With respect to contamination, the majority of the site did not contain any significant levels of contaminants. The backfilled quarry in the north west corner of the site did show elevated levels of some metals, but these were proved to be immobile.

Other than the provision of a clean break layer for landscaping areas or cover by hardstanding in limited areas, we do not consider the contaminants present a significant hazard on site, although disposal off site may attract additional costs. This is with the proviso that two anomalous results towards the eastern site boundary are investigated further, with a limited programme of testing.

The majority of soils encountered beneath the site will in general be acceptable for reuse as earthworks materials. Excavation sides within the soils will generally be stable, although excavation depth is likely to be restricted over much of the site due to shallow rockhead. Limited groundwater control measures may be required where perched water is encountered.



1. INTRODUCTION

A D Woodley and Sons Ltd has commissioned Pell Frischmann Consultants to carry out a Site Investigation at the site of Whitelands Farm at Bicester Oxfordshire. The proposal is to develop the land surrounding the farm for a variety of end uses, including residential and light industrial. The site investigation is required to ascertain whether the site is suitable for the proposed use and any remedial works that may be required.

This Report gives an assessment of the underlying ground conditions together with the possible problems that may occur as a result of the proposed scheme. This includes recommendations on foundation design, the potential for material re-use and an assessment of potential contamination of the site.

2. EXISTING INFORMATION

Information on sub-surface data has been obtained from the British Geological Survey Sheet SP52SE Geological Map ⁽¹⁾. Reference has also been made to the Pell Frischmann Desk Study ⁽⁷⁾ with respect to records of previous land use and potential contamination from sources either on or adjacent to the site.

3. SITE DESCRIPTION

The site is of generally low relief with a gradual fall to the Southeast. Land use was seen to be wholly agricultural, with fields surrounding the buildings of Whitelands Farm. Small stands of trees occurred across the site. Two main open drainage ditches were noted. One in the south eastern area of the site appeared to originate within the site boundary and exited the site in a south east direction. The other entered the site on the northern boundary and exited in an approximately east south east direction. At the time of the survey, the majority of the site was being used for crop production, with minor areas in the north eastern corner and immediately north west of Whitelands Farm being given over to livestock.



The backfilled quarry in the north western corner of the site did not show any significant surface features other than a slightly darker topsoil with occasional ash and clinker fragments compared to the surrounding areas.

An area of obviously disturbed ground in the north western corner of the site was noted during the ground investigation, forming shallow depressions and low rounded mounds. Exploratory boreholes were undertaken to investigate these features.

4. SITE HISTORY AND DEVELOPMENT

Based on current and historical Ordnance Survey maps obtained for the Desk Study and dating from 1884/1885, it was considered that the site was unlikely to be affected by a legacy of industry. Only two areas of potentially significant contaminating activities were identified either on or in the vicinity of the site.

In the north west corner of the site there is an infilled quarry which covers an approximate area of 500 square metres. From discussions with the Farmer for the site, Mr Alan Woodley, it is understood that the material disposed of, originated from nearby military premises and comprised mainly ash from burnt waste, with scrap vehicle parts. This quarry was accurately delineated during the ground investigation.

To the north east of the site there is an existing petrol filling station. Historical and current maps identified that the remainder of the site has comprised agricultural land throughout the period between 1884/1885 and the present.

During the ground investigation it became clear that there had been a further unrecorded area of quarrying activity in the north eastern area of the site. From the exploratory hole data, it appears that this activity comprised the shallow excavation of the weathered upper surface of the Forest Marble limestone, with larger blocks of stone being removed and the finer granular materials forming discard. These small spoil mounds gave a gently undulating surface to the area. There was also a suggestion of lime burning activity in one of the excavations, with some white calcined limestone noted within the generally fine grained granular material.



5. GEOLOGY AND HYDROGEOLOGY

5.1 Geology

Published geological information (1) indicates this area to be underlain by rocks of the Jurassic Period with limited overlying superficial deposits.

The superficial deposits, in the vicinity of the site, are recorded as Quaternary in age and comprise localised deposits of Alluvium, which generally follow the route of the local streams.

Based on the geological map of the area, the solid rocks under the site comprise the following (youngest first):

- Kellaways Clay
- Cornbrash
- Forest Marble Formations.

The Cornbrash Formation generally covers the northern areas of the site, with other smaller outcrops towards the south eastern boundary and typically comprises grey and yellow brown rubbly limestones. The Forest Marble Formation is present as a small outcrop in the north east corner of the site and generally comprises interbedded grey flaggy mudstone and sandy limestones. The Kellaways Clay Members present in the southern of the site comprises dark grey mudstones.

The ground investigation was able to penetrate the weathered upper surfaces of these formations, the Cornbrash being recovered as a sandy silty gravel, the Forest Marble Formations as either a coarse gravel (where limestone) or a stiff to very stiff clay (where mudstone) and the Kellaways Clays as a firm to very stiff clay.



Hydrogeology 5.2

The Environment Agency classifies inland waterways (rivers and canals) according to the General Quality Assessment scheme (GQA). The GQA scheme is designed to provide an accurate and consistent assessment of the state of water quality changes over time. The chemistry GQA describes quality in terms of three chemical measurements, which detect the most common types of organic pollution.

The nearest surface watercourse to the site is Gagle Brook, which lies approximately 50 to 100m south of the site. There are also two on-site streams or drainage ditches, which drain into an off-site drain lying approximately 350m east of the site. Gagle Brook and the on-site drains are not classified, however the unnamed off-site drain to the east has a GQA of Grade D (Fair).

The Environment Agency (EA) Groundwater Vulnerability Map and Regional Appendices, which make up part of the published 'Policy and Practice for the Protection of Groundwater', divide the underlying strata in England and Wales into major, minor and non aquifers dependent upon their potential for potable water supply.

The underlying Combrash and Forest Marble Formations are classified as a minor aquifer with the Kellaways Clay Formation classified as a non-aquifer.

There are four licensed groundwater or surface abstractions located within 500m of the site, one being on the site adjacent to Whitelands Farm. Three of the abstractions are to provide water for general agricultural use in adjacent farms whilst the fourth is the water supply for the adjacent caravan site.

There are two consents to discharge, one in the north east corner of the site and the second approximately 750m east of the site adjacent to the sewage treatment works.



6. FIELDWORK

6.1 General

V.

The ground conditions were determined by drilling cable percussion boreholes and excavating trial pits. Selected samples taken from the exploratory holes were subsequently used to undertake geotechnical and chemical laboratory testing.

The fieldwork was carried out between 7th and 22nd August 2001.

The ground investigation was carried out in general accordance with BS5930: 1981 "Code of Practice for Site Investigations" and was supervised by technical staff from Pell Frischmann Consultants Ltd. Pell Frischmann Consultants Ltd originally specified the locations and depths of the exploratory holes and pits. These were modified during the site works due to harvesting activities leading to access restrictions at various times across the site. The exploratory hole and pit locations are indicated in Figure 1.

6.2 Cable Percussion Boreholes

A total of eleven boreholes with a nominal diameter of 150mm were drilled by light cable percussion techniques to depths of between 1.5 metres and 5 metres below existing ground levels.

During the course of cable percussion boring, small (jar), large disturbed (bulk) and water samples were obtained for identification and classification purposes. In addition, 100mm nominal diameter undisturbed samples were obtained in cohesive soils using standard open drive sampling equipment.

In granular soils, cohesive soils and weathered bedrock, in situ Standard Penetration Tests (SPT's) were performed in accordance with BS 1377: Part 9 to provide an indication of the relative density and shear strength of the materials. The results, uncorrected for the effects of overburden pressure, are presented on the Borehole Records in **Appendix 1**.



A water-monitoring standpipe was installed in one borehole, BH9. The boreholes did not encounter groundwater during drilling operations.

The remainder of the boreholes were backfilled with arisings on completion.

6.3 Trial Pits

A total of 110 trial pits were dug using a Komatsu backactor excavator. The pits were taken to a maximum depth of 3m below the existing ground level.

During the course of trial pitting, both soil and water samples were obtained for identification, classification and chemical testing purposes. In addition in-situ CBR and vane shear tests were carried out where applicable. The trial pits were then backfilled with the arisings.

6.4 Exploratory Hole Records

The depths and descriptive details of all strata encountered, together with details of all samples recovered are presented on the Exploratory Hole Records in Appendix 1. The strata descriptions are based upon in-situ observations and examination of the samples by an Engineering Geologist and take into account the results of laboratory testing.

The descriptions are in general accordance with the requirements of BS 5930:1999⁽³⁾.



7. GROUND CONDITIONS

7.1 Strata Encountered

A summary of approximate areas of the different soils and rocks encountered is given in Figure 2. These broadly follow the arrangement of the geological map for the area, although it should be noted that our site investigation does not represent a detailed mapping exercise and that a degree of simplification has been adopted, with conditions being considered primarily in engineering terms.

The boundaries given in Figure 2 are generally estimated between widely spaced exploratory holes and should thus be regarded as only indicative. Further detailed investigation of individual plots would be required to confirm this initial estimate.

(i) Made Ground

The strata encountered generally confirmed the published geology of an area of made ground in the north west of the site, with the addition of made ground in the north eastern area of the site and other probably localised areas of fill in the central eastern area of the site.

Between 1.65m and 2.45m of granular made ground was identified in the north west of the site, predominantly comprising ash fill with much glass and metal fragments. Some larger pieces of metal were identifiably vehicle engine parts. The glass, including some intact bottles, showed some evidence of melting, indicating high temperature combustion in the past.

Made ground in the north eastern area of the site was largely a fine sandy silty clayey gravel, although a 1.3m thick layer of soft to firm cohesive material with plant remains was encountered in one trial pit, TP84.



Probable localised areas of fill were identified in the central eastern area of the site in Trial Pits 76 and 76B, comprised largely cohesive materials between 2.1m and 2.5m deep. Trial pit 76B was extended in a north east to south west direction and appeared to show a shallow channel in the underlying limestone, infilled by clay. This could represent either an infilled drainage ditch or formally unrecorded shallow limestone quarry, similar to those identified elsewhere on the site.

(ii) Alluvial Deposits

Alluvial deposits were encountered in the south eastern area of the site comprising predominantly sand between 1m and 1.8m thick, and in the north eastern corner as a thin layer of soft clay and peat to less than 1m depth below ground level.

(iii) Kellaways Clay

Kellaways Clay was encountered in much of the southern and south western area of the site. This comprised predominantly stiff clay (highly to completely weathered mudstone) between 0.5m and 2.5m thick, and either gradually becoming a weak to very weak mudstone with increasing depth or was underlain by limestone (the Cornbrash).

(iv) Cornbrash

Combrash was encountered in the much of the northern area of the site. This comprised predominantly coarse granular material (highly to completely weathered limestone) between 0.5m and 2.5m thick, and either was underlain by generally moderately weak to moderately strong limestone or a stiff to very stiff clay, this representing completely weathered mudstone of the Forest Marble Formation. Grading results for the Combrash identified a range from a silty sandy gravel to a very clayey very silty sandy gravel.



(v) Forest Marble

Forest Marble Formation was encountered in the north eastern area of the site and underlying the Combrash where the base of this layer was penetrated. The Forest Marble Formation comprised either a moderately strong light grey limestone, (weathered to a granular material on the upper surface) or a predominantly stiff to very stiff clay (highly to completely weathered mudstone). The clay was found to be between 0.5m and 2.5m thick, becoming a weak mudstone with increasing depth, with occasional beds of moderately weak siltstone. Grading results for the Cornbrash identified a range from a silty sandy gravel to a very clayey very silty sandy gravel.

7.2 Groundwater

Groundwater was encountered in a number of trial pits across the site, but its occurrence was intermittent, being present in some pits but absent in adjacent ones. Water inflow was generally restricted to a seepage and a delay of up to an hour was often required to allow sufficient water to collect to enable a sample to be obtained.

A very minor seepage (reported as the borehole becoming damp) was noted in made ground in Borehole 1. The majority of groundwater encountered was as seepages either within the Cornbrash or at the interface between this and the underlying Forest Marble mudstones.

Water in the form of both a seepage and a moderate inflow was encountered at the interface between the suspected clay fill and Cornbrash, in trial pits TP 76 and TP 76B

Both seepages and moderate inflows were noted in the weathered upper surface of the Forest Marble in the north east corner of the site, although this is considered to be a local feature, attributable to the proximity of drainage ditches in this area.

The water strikes are considered to represent perched water, generally within the Cornbrash.

It should be noted that groundwater levels may be subject to seasonal and other variation.



A summary of groundwater strikes is tabulated below in Table 1:

Hole Encountered (m) (m) BH1 1.3 None Very minor seepage in made ground BH2 3.0 None Very minor seepage at interface Combrash and underlying Forest Marble clay BH11 1.0 None Seepage from Combrash TP14A 1.8 None Seepage at interface Combrash and underlying Forest Marble clay TP15A 1.0 None Seepage from Combrash TP16 1.5 None Seepage from Sandy lenses in Forest Marble clay TP17 1.1 None Seepage from sandy lenses in Forest Marble clay TP18 0.5 None Seepage from Combrash TP20 0.5 None Seepage from Combrash TP47 1.0 None Seepage from Combrash TP52 2.0 None Seepage from Combrash TP59 1.8 None Seepage from Combrash TP70 0.9 None Seepage from Combrash TP71 0.9 None Seepage from Combrash TP76 2.5 1.7 after 30 mins. Moderate inflow at interface clay fill and underlying Combrash TP76B 2.1 2.0 after 20 mins. Seepage at interface clay fill and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel and underlying Forest Marble limestone	Exploratory	Depth Water	Depth Water Rise	Comments
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TP76 2.5 1.7 after30 mins. Moderate inflow at interface clay fill and underlying Combrash TP76B 2.1 2.0 after 20 mins. Seepage at interface clay fill and underlying Combrash TP83 0.8 0.6 after 20 mins. Moderate inflow close to interface of gravel and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel	TP59	1.8	None	Seepage from Combrash
underlying Cornbrash TP76B 2.1 2.0 after 20 mins. Seepage at interface clay fill and underlying Cornbrash TP83 0.8 0.6 after 20 mins. Moderate inflow close to interface of gravel and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel	TP71	0.9	None	Seepage from Cornbrash
TP83	TP76	2.5	1.7 after30 mins.	Moderate inflow at interface clay fill and
TP83 0.8 0.6 after 20 mins. Moderate inflow close to interface of gravel and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel				
TP83 0.8 0.6 after 20 mins. Moderate inflow close to interface of gravel and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel	TP76B	2.1	2.0 after 20 mins.	Seepage at interface clay fill and underlying
and underlying Forest Marble limestone TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel			∞ H	Combrash
TP89A 0.9 None Seepage at interface clayey gravel and underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel	TP83	0.8	0.6 after 20 mins.	Moderate inflow close to interface of gravel
underlying Forest Marble limestone TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel				and underlying Forest Marble limestone
TP89B 0.9 0.45m in 30 mins. Moderate inflow close to interface of gravel	TP89A	0.9	None	Seepage at interface clayey gravel and
11000				underlying Forest Marble limestone
and underlying Forest Marble limestone	TP89B	0.9	0.45m in 30 mins.	Moderate inflow close to interface of gravel
				and underlying Forest Marble limestone

Table 1 Groundwater Encountered by Exploratory Holes



8. LABORATORY TESTING

A programme of laboratory testing was prepared by Pell Frischmann Consultants. Engineering tests were carried out by Thyssen Geotechnical and chemical tests by ECOS Ltd. All engineering test results and chemical test data are presented in **Appendix 2**.

8.1 Engineering Tests

A programme of geotechnical testing was undertaken on selected bulk, small disturbed and undisturbed soil samples recovered from the exploratory holes. Testing was carried out in general accordance with BS 1377:1990⁽⁴⁾ and comprised:

- Natural Moisture Content
- Atterberg Limits
- Particle Size Analysis
- Quick Undrained Triaxial Test on Undisturbed Samples
- Quick Undrained Triaxial Test on Remoulded Samples
- One Dimensional Consolidation Test
- pH Value
- Sulphate Content
- 2.5kgCompaction Tests (Dry Density/Moisture Content Relationship)
- 4.5kgCompaction Tests (Dry Density/Moisture Content Relationship)
- California Bearing Ratio Tests at Natural Moisture Content
- California Bearing Ratio Tests at Each Compaction Point



8.2 Chemical Testing

A programme of chemical testing was undertaken on 58 selected soil samples recovered from the exploratory holes. Leachate tests were also undertaken on 11 of the soil samples to determine the potential mobility of any contaminants identified.

Soil samples obtained were analysed for the following determinants:

Arsenic	Lead	Cyanide
Boron	Mercury	Thiocyanate
Cadmium	Nickel	Selenium
Chromium	DRO	Zinc
Copper	pН	Phenol
Sulphate	Sulphide	Sulphur
PAH	Pesticide Suite	Leachate

A programme of chemical testing was undertaken on 11 selected water samples recovered from the exploratory holes to assist in identifying any potentially mobile contaminants.

Water samples obtained were analysed for the following determinants:

-Arsenic	Lead	Cyanide	
Boron	Mercury	Thiocyanate	
Cadmium	Nickel	Selenium	
Chromium	DRO	Zinc	
Copper	рН	Phenol	
Sulphate	Sulphide	Sulphur	
PAH	Chloride	PCB	
Ammoniacal Nitrogen	Total Organic Carbon		



9. ENGINEERING CONSIDERATIONS

9.1 Ground Conditions

(i) General

The investigation has identified that the site is underlain by Cornbrash, Kellaways Clay and Forest Marble, with limited areas of alluvium and made ground, as detailed in Section 7 of this report. An indicative plan showing their possible distribution is given in Figure 2. The engineering properties of these groups are considered below.

(ii) Made Ground

Between 1.65m and 2.45m of granular made ground was identified in the north west of the site, predominantly comprising ash fill with SPT 'N' values ranging from 1 to 20 (very loose to medium dense). The higher values are probably due to larger obstructions within the fine ash material and thus should be treated with caution. It is recommended that the lower bound 'N' value is assumed for the purposes of design and that the whole deposit is assumed to be very loose.

Made ground in the north eastern area of the site was largely a fine sandy silty clayey gravel, although a 1.3m thick layer of soft to firm cohesive material with plant remains was encountered in one trial pit, TP84. From observations during excavation, the granular material should be assumed to be very loose and the cohesive fill treated as a soft organic clay.

Probable localised areas of fill were identified in the central eastern area of the site and comprised largely cohesive materials. A single test on a sample of clay from TP76 has a low plasticity (CL on the Casagrande Plasticity Chart). Although described as a stiff clay in the trial pits, this type of material can be subject to considerable lateral variation, therefore conservative assumptions are recommended for design.



(iii) Alluvial Deposits

Alluvial deposits were encountered in the south eastern area of the site predominantly as a thin layer of sand, and in the north eastern corner as a thin layer of soft clay and peat.

The cohesive soils were found to have a high to extremely high plasticity (H to EH on the Casagrande Plasticity Chart). Shear strength values of 30 kN/m 2 were obtained from vane tests. The shear strength from a remoulded triaxial test (Cu_{rem}) was found to be only 9 kN/m 2 .

(iv) Kellaways Clay

Kellaways Clay was encountered in much of the southern and south western area of the site. This comprised predominantly stiff clay (highly to completely weathered mudstone) and either gradually becoming a weak to very weak mudstone with increasing depth or was underlain by limestone (the Cornbrash).

The cohesive soils were found to have a high to very high plasticity (CH to CVH on the Casagrande Plasticity Chart). Shear strength values of in excess of 130 kN/m² were obtained from vane tests. The shear strength from a triaxial test (Cu) was $71kN/m^2$. The shear strength from a remoulded triaxial test (Cu_{rem}) was found to be $227kN/m^2$.

(v) Cornbrash

Cornbrash was encountered in much of the northern area of the site. This comprised predominantly coarse granular material (highly to completely weathered limestone) and was either underlain by generally moderately weak to moderately strong limestone or a stiff to very stiff clay, this representing completely weathered mudstone of the Forest marble Formation. This clay gradually became a weak mudstone with increasing depth, with occasional beds of moderately weak siltstone.



SPT 'N' values of between 20 and 60 were obtained in the weathered Combrash (medium dense to very dense).

(vi) Forest Marble

Forest Marble Formation was encountered in the north eastern area of the site and underlying the Combrash where the base of this layer was penetrated. The Forest Marble Formation comprised either a moderately strong light grey limestone, (weathered to a granular material on the upper surface) or a predominantly stiff to very stiff clay (highly to completely weathered mudstone, becoming a weak mudstone with increasing depth, with occasional beds of moderately weak siltstone).

The granular weathered surface of the limestone was generally less than 1m in thickness and assessed as dense to very dense from observations during excavation.

The cohesive materials were found to have an intermediate to high plasticity (CI to CH on the Casagrande Plasticity Chart). Shear strength values of in excess of 130 kN/m^2 were obtained from vane tests. The shear strength from triaxial tests (Cu) varied between $96kN/m^2$ and $173kN/m^2$.

9.2 Foundation Assessment

Foundation design has at this stage been limited to a general assessment, identifying the suitable foundation types that can be adopted, an allowable bearing pressure for a pad footing and general advice. Individual structures should be reassessed when final locations, loadings and settlement requirements are known.

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The made ground in the back-filled quarry area would not be suitable as a founding medium for pad footings, however, it is understood that this area is currently identified for a roundabout and access road. This is discussed further in Section 9.3 of this report.

For the area of made ground associated with shallow working of the weathered limestone in the north eastern area of the site, the material was predominantly granular, with intact



limestone beneath. Individual footing loads should be taken through the made ground layer and onto the limestone beneath. Proof rolling of the made ground and removal of any soft spots or cohesive fill should be sufficient for most types of ground bearing slabs, although this recommendation should be reviewed if a low settlement tolerance or high slab loads are required (such as occurs with large distribution warehouses).

The alluvial deposits encountered in the extreme north eastern corner of the site include soft clays, peat and organic clay. These will not be suitable as a founding medium and should be removed from beneath building footprints and in the case of the peat, also from beneath areas of hardstanding. The limited thickness of these materials means that significant excavation is unlikely, although provision for groundwater control in the base of excavations may be required.

For the remainder of the site the weathered Combrash, Forest Marble Formation and Kellaways Clays should be suitable for shallow foundations for residential and most light industrial or similar structures.

For the Kellaways Clay, an assessment of the bearing capacity has been made using the shear strength data. An allowable bearing pressure of at least 180kN/m² has been calculated for a 2m x 2m plan area footing, for a settlement of less than 25mm.

For the Combrash and granular Forest Marble, an assessment of the bearing capacity of the weathered upper surface of the limestone has been made, modelling the material as a granular soil. An allowable bearing pressure of at least 450kN/m^2 has been calculated for a 2m x 2m plan area footing, for a settlement of less than 25mm.

For foundations taken down into the unweathered limestone beneath, An allowable bearing pressure of at least 600kN/m^2 can be adopted for a 2m x 2m plan area footing, for a settlement of less than 25mm.

For the cohesive Forest Marble, an assessment of the bearing capacity has been made using the shear strength data. An allowable bearing pressure of at least 240kN/m² has been calculated for a 2m x 2m plan area footing, for a settlement of less than 25mm.



9.3 Pavement Assessment

The subgrade will generally consist of the weathered upper surface of the Kellaways Clay, Cornbrash and to a lesser extent, the Forest Marble. Localised areas of made ground are also identified.

(i) Made Ground

The loose granular ash fill in the backfilled quarry at the north western edge of the site should respond well to proof rolling, with the removal of any soft spots. A CBR up to approximately 5% is advised, hence a sub-base thickness of 225mm or a 250mm capping with 150mm sub-base is recommended for this type of material.

It is strongly recommended that these materials are not trafficked during periods of wet weather as they could rapidly break down to a slurry. It should be noted that there is still a potential for differential settlement or reflective cracking at the quarry 'high walls' therefore it is recommended that any roads or hardstanding incorporate a geogrid reinforcement beneath the sub-base.

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For the area of made ground associated with shallow working of the weathered limestone in the north eastern area of the site, the material was predominantly granular, with intact limestone beneath. Proof rolling of the made ground and removal of any soft spots or cohesive fill should be sufficient to ensure a CBR of 15%. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 150mm is recommended for this type of material.



With respect to the localised cohesive fill materials encountered in TP68, TP76 and TP76B, a CBR of 3% is recommended based on in-situ CBR testing and a conservative assessment, given the nature of the material. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 300mm or a 350mm capping with 150mm sub-base is recommended for this type of material.

(ii) Alluvium

The alluvial deposits encountered in the extreme north eastern corner of the site include soft clays, peat and organic clay. The soft clays should either be removed or replaced, or a design for a CBR of 1% be adopted. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a 600mm capping with 150mm sub-base is recommended for this type of material.

Should this latter option be considered, the use of geogrid reinforcement is likely. Any peat should still be removed from beneath proposed roads and areas of hardstanding.

The soils in the south eastern area of the site were identified predominantly as sands. Subject to proof rolling, with the removal of any soft spots, a CBR of at least 10% should be achieved. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 175mm or a 190mm capping with 150mm sub-base is recommended for this type of material. Due regard nevertheless should be given to the relatively high fines content of this material and potential frost susceptibility with respect to final construction thickness.



(iii) Kellaways Clay

With respect to the Kellaways Clay in the southern half of the site, laboratory CBR tests and in-situ CBR tests by Mexe Probe indicated a CBR of 5% should be adopted for design purposes. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 225mm or a 250mm capping with 150mm sub-base is recommended for this type of material.

(iv) Cornbrash

With reference to the laboratory CBR tests, a CBR of greater than 15% should be achieved on Cornbrash, this occurring predominantly in the northern half of the site. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 150mm is recommended for this type of material. Due regard nevertheless should be given to the relatively high fines content of this material and potential frost susceptibility with respect to final construction thickness.

Given the relatively high fines content of some of this material, it is recommended that exposure to rainfall or surface water is minimised. A moisture content increase could lead to deterioration of the subgrade and an attendant reduction in CBR. Similarly, tracking of the subgrade should be avoided in periods of wet weather. Provision should also be made for the removal of localised 'soft spots' and replacement by suitable granular fill.

(v) Forest Marble

With reference to the laboratory CBR tests, a CBR of greater than 15% should be achieved on the granular Forest Marble, this occurring predominantly in the north eastern corner of the site. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 150mm is recommended for this type of material. Due regard nevertheless should be given to



the relatively high fines content of this material and potential frost susceptibility with respect to final construction thickness.

As with the Cornbrash, given the relatively high fines content of some of this material, it is recommended that exposure to rainfall or surface water is minimised. A moisture content increase could again lead to deterioration of the subgrade and an attendant reduction in CBR. Similarly, tracking of the subgrade should be avoided in periods of wet weather. Provision should also be made for the removal of localised 'soft spots' and replacement by suitable granular fill.

With respect to the cohesive Forest Marble, this generally underlies the Combrash in the northern half of the site, laboratory CBR tests indicated a CBR of 8% chould be adopted for design purposes. This is supported by in-situ CBR tests by Mexe Probe. Based on Figure 3.1 of the Department of Transport HD25/94⁽⁵⁾ Design Manual for Roads and Bridges, a sub-base thickness of 190mm or a 210mm capping with 150mm sub-base is recommended for this type of material.

This material is generally below a layer of Combrash and thus may not in the majority of cases form the subgrade. However, if road levels are required to be deeper than the existing ground levels, the reduction in CBR compared to the overlying Combrash should be borne in mind.

9.4 Excavations and Material Re-use

From observations during the trial pitting exercise, it is considered that excavations in most conditions will generally be stable, and the presence of hard strata at shallow levels will limit the depth of excavation over much of the site. Therefore a requirement for provision of temporary support or battering back of excavation sides is unlikely for the majority of development.



An assessment of the suitability of the various material groups is given below for use as general fill materials. It should be noted that the gradings obtained means that much of the granular material will be unlikely to achieve the relatively high specifications required for specialist fills, such as those required for drainage media or fill behind structures.

(i) Made Ground

The vast majority of made ground is unlikely to be able to be re-used as an engineered fill, other than as a Class 4 Landscaping Fill in accordance with the Department of Transport Specification⁽⁶⁾. It may be possible to re-use the stiff clays encountered in TP76 and TP76B as a Class 2B general fill, although with the potential for variation within such materials, further testing would be required before such an assumption could be adopted for design. Due regard should also be given to the recommendations given in Section 10 of this report with respect to contamination.

(ii) Alluvium

The majority of alluvial materials are also unlikely to be able to be re-used as an engineered fill, other than as a Class 4 Landscaping Fill in accordance with the Department of Transport Specification⁽⁶⁾.

The thin layers of alluvial sand in the south eastern area of the site may prove to be usable as a Class I fill, but the majority of this area is currently in the area identified as 'open space'.

(iii) Kellaways Clay

For the cohesive weathered Kellaways Clay materials, it is estimated that approximately 70% of this material should be suitable as a Class 2A or 2B general fill material in accordance with the Department of Transport Specification⁽⁶⁾, the majority of the remainder being too wet of the soils plastic limit.



(iv) Combrash

For the weathered Cornbrash materials, it is estimated that approximately 55% of this material should be suitable as a Class 1A or 1B general fill material in accordance with the Department of Transport Specification⁽⁶⁾, the remainder again having too high a fines (silt and clay) content. Although failing the criteria for this specification, as for the granular Forest Marble, we are of the opinion that a greater proportion of the material may be re-usable as an engineered fill, subject to a field trial. This would involve the laying of a test panel, followed by measurement of in-situ dry density and moisture content by Nuclear Density Gauge. Dependent on end –use requirements, the test panel could also be subjected to plate bearing tests to confirm acceptable compaction and performance.

(v) Forest Marble

For the cohesive weathered Forest Marble Formation materials, it is estimated that approximately 75% of this material should be suitable as a Class 2A or 2B general fill material in accordance with the Department of Transport Specification⁽⁶⁾, the majority of the remainder being too wet of the soils plastic limit.

For the granular weathered Forest Marble Formation materials, it is estimated that approximately 60% of this material should be suitable as a Class 1A or 1B general fill material in accordance with the Department of Transport Specification⁽⁶⁾, the remainder having too high a fines (silt and clay) content. Although failing the criteria for this specification, we are of the opinion that a greater proportion of the material may be re-usable as an engineered fill, subject to a field trial. This would involve the laying of a test panel, followed by measurement of in-situ dry density and moisture content by Nuclear Density Gauge. Dependent on end –use requirements, the test panel could also be subjected to plate bearing tests to confirm acceptable compaction and performance.



Particular care is needed in using the cohesive materials identified for earthworks, in both the Kellaways Clays and the cohesive Forest Marble. Their sensitivity to increase in moisture content is demonstrated by the CBR test results, where a rapid decline in CBR % is shown for only a slight increase in moisture. Delays following exposure and working during wet weather should both be expressly avoided.

For the granular materials, heavy compaction plant is likely to ensure sufficiently low air voids. The use of vibrating rollers is not recommended given the relatively high silt content, particularly if the more marginal materials are intended for re-use.

9.5 Shrinkage and Swelling

The test data indicates that the cohesive deposits are generally intermediate to high plasticity. It is recommended that a high shrinkability classification be adopted (NHBC Standard Building Near Trees Chapter 4.2). If foundations are to be placed on this material the guidelines of this standard should be followed with regard to foundation depths and the planting of trees.

9.6 Sulphate Assessment

As part of the site screen potential for contaminants, tests included for total sulphate content. Results show the total soil sulphate content to be below 0.24% SO₄, except within the ash fill materials encountered in the backfilled quarry at the north western corner of the site and one anomalous result at TP68. The pH results varied between 6.3 and 8.4 but were generally in excess of 7.

Tests on 11 groundwater samples showed sulphate levels to be well below 0.4 g/l SO_4 and pH to be between 7.2 and 7.9.

A total of 14 soil samples of near surface deposits were tested for 2:1 water/soil extract sulphate content and pH. Results show the 2:1 water/soil extract sulphate content to be below 0.4 g/l SO₄ except again within the ash fill materials encountered in the backfilled quarry at the north western corner of the site. The pH varies between 7.2 and 8.5.



For the ash fill material, the sulphate results fall into Class 2 of BRE Digest 363, 1996 (2). As discussed further in Section 10, the anomalous data from TP68 should be subjected to an additional limited site investigation. For the remainder of the site, the sulphate results fall into Class 1 of BRE Digest 363 in terms of soil and groundwater results.

9.7 Drainage

With respect to the excavation for site drains and other services, due regard should be given to the difficulties experienced by the excavator during the trial pitting exercise. Design should take account of the final levels identified in each of the logs. Attempting to dig below these levels may require the breaking out of rock.

It is understood that soak-away drainage is being considered for the site. To this end the permeability of the Cornbrash has been investigated using the laboratory grading data and a limited programme of soak-away tests in trial pits.

From the grading curves, a range of permeability has been calculated. For Combrash this varies from 1x10⁻⁵mm/s (typical of a silt) to 9x10⁻³mm/s (typical of a fine sand/coarse silt). This material would not be considered ideal for a soak-away drainage design, both in terms of performance and because of the risk of a loss of fines leading to silting up of the pit and even possible local subsidence.

The soakaway tests in trial pits are summarised overleaf in Table 2 with an average of the volume of water lost from each pit per minute:

0,00,000 min /6.00.00 min /0.006.00



Exploratory Hole	Average Water Loss	Average Water Loss
	m³/min.	Litres/min (Approx.)
TP45	0.010	10
TP46	0.115	115
TP56	0.050	50
TP64	0.005	5
TP65	0.012	12
TP73A	0.010	10

Table 2 Summary of Soak-away Tests

We have reservations with regard to adopting soak-aways as the main method of drainage on the site.

Firstly, the layer for drainage to occur in is likely to be restricted to the relatively thin Cornbrash layer, this at least in part being bounded above and below by weathered mudstones, giving an essentially impermeable cap and base to this layer. The capacity of this layer could thus be severely restricted. ٠

Secondly, it is understood that high groundwater levels can occur during the winter, based on discussions with the Farmer for the site, Mr Alan Woodley, who has observed water levels within approximately 0.5m below ground level during new drainage ditch excavation. This could in effect turn soak-aways into ponds during the period of maximum demand on the drainage system.



CONTAMINATION ASSESSMENT 10.0

General 10.1

Initial desk study information indicated no previous potentially contaminative use on or immediately adjacent to the site, other than a small quarry in the north west comer and a petrol station on the eastern boundary. The selection of samples for contamination testing was based on concentrating tests on these areas and any other suspected made ground, together with a general screen across the site.

The chemical analysis was undertaken by ECOS Ltd, a UKAS accredited laboratory with specialised testing expertise.

In order to interpret analytical results it is common practice to compare them with the various guidelines published across the UK and within Europe. These guidelines act as an aid and are by no means definitive and any judgement must be based on a source - pathway - target analysis. These guidelines include the UK Interdepartmental Committee on the Redevelopment of Contaminated Land (ICRCL) published in Guidance Note 59/83, UK Water Supply (Water Quality) Regulations (1989) and the soil and groundwater guidelines published by the Dutch authorities as the Dutch Intervention Levels.

The ICRCL values provide the most appropriate guidance in the UK and are primarily intended as a guide to site re-development. They were first published in 1983 and use the concept of 'trigger' and 'action' concentrations of contaminants in soil, which are related to the intended end use of the site. The concentrations are related to the sensitivity of the site. However ICRCL values relate to soil only and cover a limited range of contaminants.

Therefore, it is common practice to use either the Dutch value, or where there are threshold concentrations specified, the Department of the Environment concentrations (set out in Waste Management Paper 4 for the 'completion of landfill sites') for the assessment of groundwater contamination. The Dutch value may also be adopted for assessing soil contaminants for which there are no ICRCL guidelines.



The Dutch Intervention Levels are based on a framework comprising two threshold values of increasing concentration, the 'desired/target' level and the 'action/intervention' level. These are defined as follows:

- The Target Level Not considered as hazardous or posing significant risk when concentrations occur below this level.
- The Intervention Level A threshold value above which remediation should be considered.

10.2 Analysis of Results

The following sections subdivide the findings of the chemical testing programme into heavy metals potentially hazardous to health, phytotoxins and a range of other organic and inorganic contaminants. Only those results considered significant are given in the following sections.

10.2.1 Heavy Metals

Selected samples from the trial pits and boreholes were submitted for analysis to establish the concentrations of Heavy Metals. Where results exceeded the Dutch Intervention values the samples are identified in Table 3, with the relevant metals highlighted.

		>55mg/le	4. 5	>530~0/	الان الان الان الان الان الان الان الان	
Trial Pit	Depth (m)	Arsenic mg/kg	Cadmium mg/kg	Lead mg/kg	Mercury mg/kg	Chromium mg/kg
TTI	0.5	68.5	3.1	701	<1	87.7
TT2	0.5	122.8	2.2	1227	1.5	55.8
TT2	1.0	77.8	2.7	749.5	<1	58.5
TT3	1.0	87.7	5.2	1332.5	2.8	55.5
TP68	1.5	231	<0.2	6.6	<1	62.5
TP75	0.3	103.6	0.4	8.3	<1	39.2
% of Total S	amples	10%	-	7%	-	-

TABLE 3: Heavy Metals potentially hazardous to health

Shaded boxes indicate concentrations in excess of Dutch Intervention Values



Six arsenic concentrations exceeded the intervention value of 55mg/kg, with four of the samples being ash from the landfill site on the north western corner of the site, the other two occurring towards the central eastern boundary.

Four lead concentrations exceeded the intervention value of 530mg/kg the samples again being ash from the landfill site on the north western corner of the site.

The high results for arsenic and lead represent contaminants within the ash materials, which was anticipated, elevated metals being common in ash fills. The elevated levels of arsenic in the two other locations are somewhat more problematic.

Trial Pit 68 did include a thin clinker like layer of material at the interface between limestone and overlying clay, which on initial examination appeared to be the upper surface of limestone having been subject to leaching out of carbonate. Having considered further these observations, together with an assessment of the test data, we consider that this material is made ground, although it is not clear at this stage as to the origins of these materials.

There was no evidence of unusual conditions at the second of these two sampling points, TP75. Tests in similar materials in the surrounding area and groundwater samples did not identify any significant levels of contamination.

These high arsenic results may only represent isolated 'hot spots' of contamination, but we would strongly recommend a further limited investigation of both these areas.

10.2.2 Phytotoxic Metals

Soil samples were also submitted for analysis to establish the concentrations of phytotoxic metals, which can be detrimental to plants (namely copper, zinc and nickel). Where results exceeded ICRCL levels for phytotoxins or the Dutch Intervention values, the samples are identified in Table 4 overleaf, with the relevant metals highlighted.



Trial Pit No.	Depth (m)	Copper mg/kg	Nickel mg/kg	Zinc mg/kg
TT1	0.5	363.3	106	2967
TT2	0.5	420.6	169.8	1660-7
TT2	1.0	363.5	131.7	123728
TT3	1.0	327.2	173.0	1679.7
TP68	1.5	57.8	161.7	271.4
% of Total Sar	nples	7%	9%	7%

Key: Exceeding ICRCL Levels

Exceeding ICRCL Levels and Dutch Intervention Values

TABLE 4: Metals detrimental to plant growth

The results indicated that copper, nickel and zinc occurs at elevated levels only within the ash fill materials at the north western comer of the site, with a single elevated level at TP68 adjacent to the eastern boundary. Due regard should be given to the results if it is intended to use these materials in landscaping, by for example the use of a 500mm break layer of clean material between the fill and overlying topsoil. It is interesting to note however that the north western quarry area has been successfully used for crop growing, although this may reflect dilution of contaminants by ploughing and mixing with topsoil.

10.2.4 Other Organic and Inorganic Contaminants

Soil samples were also submitted for analysis to establish the concentrations of the following organic and inorganic contaminants: polyaromatic hydrocarbons, phenols, cyanide (total, free and complex), thiocyanate, sulphate, sulphide, sulphur and total petroleum hydrocarbons. Tests were also undertaken on selected samples for pesticides, PCBs and Diesel Range Organics. Only one result for one analyte from the entire site exceeded Dutch Intervention Values or ICRCL Action Limits, namely the sample from TP 68 at 1.5m depth, which gave an unusually elevated sulphate result of 14,027 mg/kg. This represents 3% of all samples tested and again may reflect a 'hot spot' of contamination.



10.2.5 Leaching Tests

Leaching tests were undertaken on 15 soil samples. All samples were analysed for 16 determinands comprising ammonia, arsenic, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, pH, total phenols, selenium, and zinc. No significant concentrations of contaminants were reported in these samples.

10.2.5 Water Testing

Chemical tests were undertaken on 11 water samples. All samples were analysed for determinands comprising arsenic, cadmium, chromium, lead, mercury, selenium, boron, copper, nickel, zinc, PAH (total and 16 EPA1), total phenols, cyanide, thiocyanate, sulphate, sulphide and sulphur.

Selected samples were also tested for chloride, ammoniacal nitrogen, total organic carbon, diesel range organics and PCBs. These concentrated on the areas adjacent to the quarry waste in the north western corner of the site and also the suspected made ground area towards the eastern boundary of the site. Other tests were undertaken as a general site screen.

A single sample was also recovered from the water bore at Whitelands Farm to test the water table at depth. It is understood that this water is abstracted from approximately 40m below existing ground levels, within the Great Oolite.

No significant concentrations of contaminants were reported in these samples, indicating that mobile contaminants were not present either from an on site source or from one originating off site.



10.2.6 Material Disposal

With regard to the disposal of the material off-site, reference has been made to the Environment Agency publication 'Guidance on the Disposal of Contaminated Soils'. Under the disposal option identification flowchart in this publication, the majority of material from this site will require disposal in a suitably licensed or permitted site.

This is based primarily on levels of arsenic across the site. Although these are below the Dutch Intervention Values, the Environment Agency upper threshold value and do not exceed the leachability lower threshold values, they do exceed the Environment Agency lower threshold value of 10 mg/kg for the majority of samples recovered.

Reference has also been made to the contamination classes used by the Greater Manchester Waste Regulation Authority. This is used by a number of Local Authorities in the UK. The soil samples identified in Table 3 have been classified in accordance with this document. The results are summarised below in Table 5:

Trial Pit	Depth (m)	Arsenic mg/kg	Cadmium mg/kg	Lead mg/kg	Mercury mg/kg	Chromium mg/kg
TT1	0.5	С	В	В	A	A
TT2	0.5	D	В	C	В	A
TT2	10	C	В	В	A	A
TT3	1.0	C	B	C	В	A
	1.0	D	A	A	A	A
TP68	0.3	D	A	A	A	A
TP75	0.3					

Class A: Uncontaminated

Class B: Slightly Contaminated

Class C: Contaminated

Class D: Heavily Contaminated

Class E: Unusually Highly Contaminated

TABLE 5: Heavy Metals potentially hazardous to health GMWRA Classification



The soil samples identified in Table 4 have also been classified in accordance with this document. The results are summarised below in Table 6:

Trial Pit No.	Depth (m)	Copper mg/kg	Nickel mg/kg	Zinc mg/kg
TTI	0.5	C	С	D
TT2	0.5	C	С	D
TT2	1.0	C	С	D
TT3	1.0	С	С	D
TP68	1.5	A	С	В

Class A: Uncontaminated

Class B: Slightly Contaminated

Class C: Contaminated

Class D: Heavily Contaminated

Class E. Unusually Highly Contaminated

TABLE 6: Metals detrimental to plant growth GMWRA Classification

Under the contamination classes used by the Greater Manchester Waste Regulation Authority, the materials sampled from the backfilled quarry would classify as either contaminated or heavily contaminated for arsenic, lead, copper and nickel, and slightly contaminated for mercury and cadmium. It is understood at present that the material is unlikely to be removed given the proposed construction of a roundabout over the area. We strongly recommend that this remains the case during the development of design.

The sample from TP75 at 0.3m depth classes as Class D Heavily Contaminated for arsenic.

The sample from TP 68 at 1.5m depth also classes as Class B Slightly Contaminated for zinc and Class D Heavily Contaminated for both arsenic and sulphate.

As stated previously, it is recommended that the areas these last two samples were taken from be investigated further, to delineate the suspected 'hot-spots' they represent.



Therefore, although not necessarily presenting a hazard whilst remaining on site, there is a strong possibility that the disposal of the materials identified above off-site may attract elevated rates and restrictions as to the suitable waste sites available. Should significant quantities of material need to be taken off-site, it is advised that the relevant waste regulatory authority is contacted in the first instance to ascertain the nearest suitable sites and the premiums charged on these materials.

10.2.7 General Comments for Construction Works

In general, good working practice should be sufficient to protect the workforce and public from the risk of hazards of contamination. In the event that any anomalous or suspect materials, water or odours are encountered, suspect material should be reported and professional advice sought.

These recommendations are subject to the findings of the limited additional investigation of the areas surrounding trial pits TP68 and TP75.



11.0 RECOMMENDATIONS AND CONCLUSIONS

It is proposed to develop the site for a variety of end-uses including residential, leisure, business and light industrial.

The investigation has identified that the site is underlain by Cornbrash, Kellaways Clay and Forest Marble, with limited areas of alluvium and made ground. An indicative plan showing their possible distribution is given in Figure 2.

A preliminary assessment of foundation types has been given for the anticipated ground conditions. Shallow footings are considered suitable for the site, only limited areas of made ground and peat with soft clays may require excavation from beneath foundation footprints and replacement by suitable granular fill.

Assessment of the sulphate content of the near surface in situ deposits shows that they fall into Class 1 of Table 1 of BRE 363, 1996⁽²⁾.

Soak-aways are considered unlikely to be a viable option as the main means of drainage for the site.

The majority of materials over the site are regarded as likely to be acceptable for re-use as general fill, with regard to the DTP Specification for Highway Works. Care will be needed to ensure moisture control is strictly adopted for the fill however, due to sensitivity to moisture content change.

For pavement design, a CBR of at least 15% is considered reasonable for the areas of the site underlain by Cornbrash and granular weathered Forest Marble, assuming proposed road levels remain close to existing. For areas underlain by Kellaways Clay, a CBR of 5% should be adopted for design.



With respect to contamination, we do not consider that the site presents a significant hazard to the proposed end-uses. Other than the provision of a clean break layer for landscaping or cover by hardstanding in limited areas, we do not consider special measures will be required, although disposal off site may attract additional costs. Should significant quantities of material need to be taken off-site, it is advised that the relevant waste regulatory authority is contacted to ascertain the nearest suitable site and the premiums charged on these materials.

High results for arsenic, lead and phytotoxins within the quarry backfill were anticipated, elevated metals being common in ash fills.

The elevated levels of arsenic and sulphate in TP68 and of arsenic in TP75 are somewhat These high results may only represent isolated 'hot spots' of more problematic. contamination, but we would strongly recommend a further limited investigation of both these areas.

No significant contamination was noted throughout the remainder of the site.

There is no evidence of any significant concentrations of mobile contaminants on the site or from any off site source.



12.0 REFERENCES

- 1. Geological Survey of Great Britain 1:10,000 Scale Geological Map. Sheet No SP52SE (Solid and Drift Edition).
- 2. Building Research Establishment, 1996. Sulphate and Acid Resistance of Concrete in the Ground. BRE Digest 363.
- 3. BS 5930:1999 Code of Practice for Site Investigation
- 4. BS1377:1990 Soils for Engineering Purposes
- 5. Department of Transport Design Manual For Roads and Bridges HD25/94
- 6. Department of Transport Specification For Highway Works Series 600
- 7. Pell Frischmann Consultants 2001. Phase 1 Desk Study for South West Bicester.



FIGURES



APPENDIX 1 EXPLORATORY HOLE LOGS

PELL FRISCHMANN CONSULTANTS LTD	. E	BOREH		Number				
ITE: Bicester	EQUIPMEN	-	BH1					
ELIENT: A D Woodley	GROUND LEVEL COORDINATE 0.000 E; 0.00 N:				TES 1: 0.00		DATE	13/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)			S/TES No	TS Test	INSTALLATIONS/ BACKFILL
TOPSOIL		0.50	.· .· .	4.00			and the second s	
MADE GROUND grey brown ash and clinker fill with much glass bottles, some metal and occasional pottery fragments. Glass showing signs of melting due to high temperatures in the past				1.06	D		19	
		2.00		2. 9 6	D			
oft to firm brown sandy CLAY		2.50	V 1	2.50	D			
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STRATA DESCRIPTION	KEY	DEPTH	LEVEL		SAMPL			INSTALLATION
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SITE: Bicester	EQUIPMEN	T AND ME	THODS:				BH5					
CLIENT: A D Woodley	GROUND LEVEL COORDINATES 0.000 E: 0.00 N: 0.00					DATE	14/08/200	01				
STRATA DESCRIPTION	(1111-11)				S/TES	TS Test	INSTALLATIO BACKFILL					
TOPSOIL		0.00		0.00	В							
Firm stiff grey mottled yellow CLAY				1. 9 6	U							
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SITE: Bicester	EQUIPMENT AND METHODS:							H6
CLIENT: A D Woodley	GROUND L 0.000	EVEL	E: 0	COORDINA 1.00	TES N: 0.00		DATE	15/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLE Type	S/TES No	TS Test	INSTALLATIONS/ BACKFILL
TOPSOIL		0.00		0.00				
Firm grey brown sandy CLAY		0.40						
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Firm to stiff grey CLAY		1.70	1-	1.70 2. 0 6	D U	١		
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TRATA DESCRIPTION		(Thick)	(mAOD)	Depth 0.80	Туре	No	Test	BACKFILL				
TOPSOIL		0.30		0.00								
Moderately strong yellow brown LIMESTONE (Chiselling 0.3m to 0.8m 1 Hr)		0.80			1	i						
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TOPSOIL		0.00		0.96	В			
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Bicester	GROUND LE	VEL	C E: O	COORDINATES E: 0.00 N: 0.00			DATE 16/08/200					
A D Woodley	0.000	DEPTH	LEVEL				S	INSTAL	ATIONS/			
STRATA DESCRIPTION	KEY	(Thick)	(mAOD)	Depth	Type	No	Test	BACI	KFILL			
TOPSOIL		0.30		y .00								
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A D Woodley	KEY	LEVEL :	SAMPLE	S/TES	s	INSTALLATIONS		
TRATA DESCRIPTION	NE I	DEPTH (Thick)	(mAOD)	Depth 0 .00	Туре	No	Test	BACKFILL
TOPSOIL		0.40		u .00				
Stiff brown CLAY with much coarse limestone								
gravel	=====			1. 9 6	D		56	
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Moderately strong yellow brown LIMESTONE (Chiselling 1.45m to 1.8m 1 Hr) End of Borehole at 1.80 m		1.80						
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PELL FRISCHMANN CONSULTANTS LTD	7	RIAL	PITRE	CORD			Trial Num				
SITE: Bicester	EQUIPME	EQUIPMENT AND METHODS						TP1			
CLIENT: A.D Woodly	GROUND 0.000	COORDINA 156334.00		DATE 08/08/20							
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)		SAMPLES/TES			INSTALLATIONS/			
TOPSOIL		0.30	(111400)	Depth	- <u> </u>	NO	Test	DAUNFILL			
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.00		0.50	В						
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong trong LIMESTONE		0.90 1.00									
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No groundwater encountered, trial pit st	able througho	out, unab	le to progre	ess below	1m		Scale 1:25 Figure	Sheet 1 of			

PELL FRISCHMANN CONSULTANTS LTD		TRIAL	PIT RE	CORD			Tria Nun	l Pit nber
SITE: Bicester	EQUIPME	NT AND M	ETHODS:		-		Т	P1A
CLIENT: A.D Woodly	GROUND 0.000	LEVEL	E:	COORDINA 456218.00		2456.0	DATE	08/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL			LES/TE		INSTALLATIONS
TOPSOIL		0.00	(mAOD)	Depth 0.10	Type	No	Test	BACKFILL
Orange brown very clayey fine to medium SAND		0.25		· .				
with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.60		0.50	В			
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone)	0.00.00	0.60						
		1.10						
/ellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		1.25						
End of Borehole at 1.25 m	i :					***************************************		
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Remarks	*	*				1.5	ogged by	Checked by
No groundwater encountered, trial pit walls	stable throu	ighout, ur	able to pr	ogress be	low 1.		cale 25	Sheet 1 of 1
otes: Atgripts are described in accordance with BS 5930:1999. https://doi.org/10.1006/pdf.com/netres/Thicknessess given in brackets in depth or						F	igure	

PELL FRISCHMANN CONSULTANTS LTD	T	'RIAL F	PIT RE	CORD			Trial Numl	
SITE: Bicester	EQUIPMEN	NT AND ME	THODS				T	2
CLIENT: A.D Woodly	GROUND 1 0.000	EVEL		COORDINA 156200.00		348.00	DATE	08/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLE Type	ES/TES	TS Test	INSTALLATIONS/
TOPSOIL		0.00	· ·					
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely		0.50		0.30	D			
weathered limestone) Yellow fine grained SAND with much coarse angular gravel of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.90					-	
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong strong LIMESTONE		1.20						
End of Borehole at 1.20 m			·					
			h depl		OK			
	And Sulp	enic Lote	1134		hK.			•
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			announced to the first of the f		11 1			
						The state of the s		
	·			A Commission of the Commission	<u> </u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Logged	by Checked
Remarks No groundwater encountered, trial pit s	table through	out, unab	le to prog	ress belov	v 1.2m		Scale 1:25	Sheet 1 c

PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	PIT RE	CORD			Γrial F Numb	er	
TE:	EQUIPMEN	T AND ME	THODS:				TF	23	
Bicester LIENT:	GROUND L	.EV E L		COORDINA 156266.001	TES N. 2222		DATE	08/08	3/2001
A.D Woodly	0.000				SAMPLE		s	INSTAL	LATIONS/
TRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	Type	No	Test		CKFILL
TOPSOIL		0.00	و المستعلق أستي	0.10	D				
		0.20							
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.50				and the second s			
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE, with bedding dipping at 20 degrees to the south									
degrees to the south		0.90			1				
End of Borehole at 0.90 m				1					
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Remarks		througho	nt unahle	to progre	ss belo	w 0.9n	Scale		-
Remarks No groundwater encountered, trial pit	walls stable	mougno	ut, uriable	. to progre			1.25 Fig.	ure	Sheet 1
							rig	uie	

PELL FRISCHMANN CONSULTANTS LTD			Number								
14MANN	EQUIPMEN		TP4								
Bicester	GROUND LEVEL COORDINATES						DATE 08/08/200				
NT: A.D Woodly	0.000		E: 45	56242.00		- l					
RATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	Type	No No	Tesl	INSTALLA BACKF			
PSOIL		0.00									
d brown very sandy clayey coarse angular		0.20		0.30	D						
RAVEL and COBBLES of limestone, assessed that the pit walls as dense (highly to completely eathered limestone)		0.60									
End of Borehole at 0.60 m			:								
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		0.50	a orpe					-			
	Ac	innic.	Home	No c	1						
	(Si	two ?	1505	49 S) K.,						
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Remarks	n halaur A. Em. aahh	les and boulde	ers of pale grey li	mestone (possi	ble bedrock)	Sc		Sheet		
No groundwater encountered, trial pit stable throughout, unable to progress	s pėlow viem, coop		, 3-,				1:2 Fi	s gure	Sueer		

PELL FRISCHMANN CONSULTANTS LTD	TRIAL F	PIT REC	ORD			Trial I Numb		
Bicester	EQUIPMENT AND ME	THOOS:				T	P5	
CLIENT: A.D Woodly	GROUND LEVEL 0.000	C E: 45	OORDINAT 6182.00N	ES 1: 2218	95.00	DATE	08/08/	2001
	KEY DEPTH	LEVEL	S	AMPLE	S/TES	TS	INSTALL	ATIONS/
STRATA DESCRIPTION	(Thick)	(mAOD)	Depth	Туре	No	Test	BACK	(FILL
TOPSOIL	0.00		0.10	D				
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)	0.50							
Stiff to very stiff grey CLAY becoming hard and friable at base (possible mudstone bedrock)				-				
			1					
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	2.30							
End of Borehole at 2.30 m								
	2 .							
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	The second secon	The second secon						ere e
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Pamarka			a j reservante de la	, , , ,		Logg	ged by	Checked t
Remarks No groundwater encountered, trial pit s	stable throughout, una	able to prog	ress belo	w 2.3m	1	Scal 1:25	5	Sheet 1 o
Notes:	n depth column.					rig	jure	

PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	Trial Pit Number					
TE: Bicester	EQUIPMEN	IT AND ME	TP6					
IENT: A.D Woodly	GROUND LEVEL COC 0.000 E: 456				TES N: 2217		DATE	08/08/2001
	KEY	DEPTH			SAMPLE	S/TES	rs	INSTALLATIONS
TRATA DESCRIPTION		(Thick) 0:00	(MOAm)	0.10	Type D	No	Test	BACKFILL
OPSOIL		0.30		0.10				
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed rom the pit walls as dense (highly to completely weathered limestone)					C. Landing and Company			
	0 . 0 0 . 0	0.90				: '	-	
Stiff yellow and grey mottled CLAY becoming very stiff with depth and hard and friable at the base of he pit (possible mudstone bedrock)			5 -				-	
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		-						
20.40		2.40						
End of Borehole at 2.40 m					`			
	4.	0.	Im dop		- O/C			
		Leo	57 (1) 18 (1) 07 (1)	3 0 6 00	ok ok	To the same of the		
		Sup	rate 1	(9) "	OK			
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					d ·	To provide the second s	- 1	
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							1 000	ed by Checked
Remarks No groundwater encountered, Irial pit stable throughout, unable to progress	below 2.4m						Scale	9

Notes: Materials are described in accordance with BS 5930:1999. Art topths and reduced levels are in metres. Thicknessess given in brackets in depth column

ENIBCHMANN	PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	PIT RE	CORD			Trial I Numb	oer	
SITE:		EQUIPMEN	IT AND ME	THODS:				T	27	
Bicester			· .					DATE		
CLIENT: A.D Wo	odly	GROUND L 0.000	.EVEL	E: 4	COORDINA 456350.00	res V: 2225		DATE	08/08	3/2001
		KEY	DEPTH	LEVEL		SAMPLE	S/TÉS	TS)	LLATIONS/
STRATA DES	SCRIPTION		(Thick)	(mAOD)	Depth 0.10	Туре	No	Test	BAC	CKFILL
TOPSOIL			0.40		0.10					
Red brown ver GRAVEL and from the pit wa weathered lim	ry sandy clayey coarse angular COBBLES of limestone, assessed alls as dense (highly to completely estone)				0.70	В				
		0.00.00	0.90							
Yellow brown PRAVEL and mm) of lime dense (highly	very sandy clayey course angular COBBLES (up to 150mm x 150mm x estone, assessed from pit walls as to completely weathered limestone)		1.30					The state of the s		
3	End of Borehole at 1.30 m									
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Remarks			and the first of the second section of the section of the second section of the sectio	* . *			•	Logge		Checked by
221	encountered, some localised collapse of pit walls 0.4-0.9m	, stable below this de	plh					1:25	· j	Sheet 1 of
Notes:	nbed in accordance with BS 5930:1999. Iced levels are in metres.Thicknessess given in brackets in			-				Figu	ıre	

PELL FRISCHMANN CONSULTANTS LTD	TI	RIAL P	IT REC	ORD		1	Trial P Numb		
TE: Bicester	EQUIPMEN	T AND ME	THODS:				TF	8	
JENT:	GROUND L 0.000	EVEL	E: 4!	OORDINA 56317.00	TES N: 2221		DATE (08/08	/2001
A.D Woodly	KEY	DEPTH	LEVEL		SAMPLE	S/TES	s		LATIONS/
TRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BAC	KFILL
TOPSOIL		0.00		:					
		0.30 0.40							
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed	0 0 0 0 0	0.40							-
from the pit walls as delise (flight) to serve	0 0 0 0 0 0	0.65	· .	0.70	D				
yellow brown very snady clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.80							
10mm) of limestone, assessed when the stone in the stone									
Stiff yellow brown very sandy CLAY with much squar medium to coarse gravel of limestone				•	1				
rigular medium to coarse graver of intestens illow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE	丑丑	1.30			!				
End of Borehole at 1.30 m									
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		and the second s					Logge	ed by	Checked
Remarks							Scale	,	
No groundwater encountered, that pit stable throughout, unable to progress	below 1.3m						1:25 Figu	ıre	Sheet 1 c
Notes: Malenals are described in accordance with 8S 5930:1999 Malenals are described in accordance with 8N 5930:1999							i igt	يار <u>ت</u>	

PELL FRISCHMANN CONSULTANTS LTD		RIAL P			and the second second		Numl		
	EQUIPMEN	T AND ME	THODS				T	P9	
Bicester	GROUND L	EVEL		COORDI	NATES 00N: 222	052.00	DATE 08/08/2001		2001
NT: A.D Woodly	0.000	DEPTH	LEVEL	+50551.		ES/TES	TS	INSTALL	
RATA DESCRIPTION	KEY	(Thick)	(mAOD)	Depth	Туре	No	Test	BACK	יונג
)PSOIL		0.25			- - - -				
ed brown very sandy clayey coarse angular RAVEL and COBBLES of limestone, assessed om the pit walls as dense (highly to completely eathered limestone)		0.50	·						
ellow and light gley very heart moderately strong oderately to highly weathered moderately strong									
End of Borehole at 0.60 m									
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	manus en							ogged by	Checked
Remarks No groundwater encountered, trial pit stable throughout, unable to progr	ess below 0.6m						1	cale :25 -igure	Sheet 1

3 = =	PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	IT RE	CORD		Numb	er	
TE:		EQUIPMEN	T AND ME	THODS:			11	210	
Bicester		GROUND L	EVEL	F·4	COORDINA 456354.00	TES N: 221897.00	DATE	08/08/2001	
LIENT: A.D Wo	oodly	0.000				SAMPLES/TES		INSTALLATIONS/	
TRATA DES	SCRIPTION	KEY	DEPTH (Thick)	(mAOD)	Depth	Type No	Test	BACKFILL	1
			0.00						1
TOPSOIL			0.30						
Red brown ve GRAVEL and from the pit w	cy sandy clayey coarse angular COBBLES of limestone, assessed alls as dense (highly to completely nestone)		0.50						
Yellow brown GRAVEL and 10mm) of lime dense (highly	very snady clayey course angular COBBLES (up to 150mm x 150mm x estone, assessed from pit walls as to completely weathered limestone)		1.00						
	End of Borehole at 1.00 m								
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Remarks	The second secon			los and hould-	re in hil hace (n	ossible limestone be	drock) Sca	1	
No groundwat	er encountered, trial pit stable throughout, unable to progre	ss below 1m due to l	mestone cobb	ies and Doulde	is in pit base (p	Suppose in contact to the	1:2: Fic	gure Sheet	. 1 of
							1.16	,	

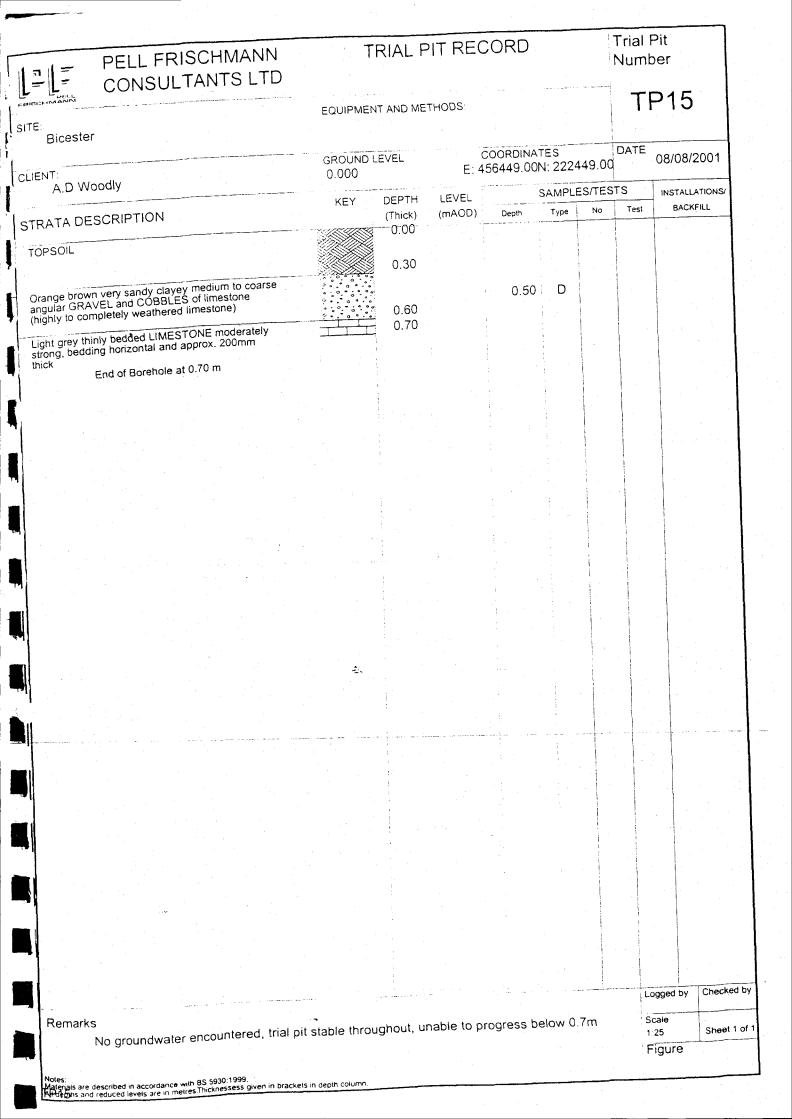
PELL FRISCHMANN CONSULTANTS LTD	7	RIAL	PIT RE	CORD			Trial F Numb	
ITE: Bicester	EQUIPME	NT AND MI	ETHODS:				TF	P11
LIENT: A.D Woodly	GROUND 0.000	LEVEL	Ε.	COORDIN 456347.0		740.00	DATE	20/08/2001
TO A TAID DESCRIPTION	KEY	DEPTH	LEVEL	:	SAMPL	ES/TES	STS	INSTALLATIONS/
TRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
TOPSOIL-Mid brown soft fiberous silty clayey TOPSOIL with rootlets and organics (5%) with very accasional fine flint and limestone gravel.		0.25						
Mid brown and orange mottled moderately firm cohesive silty CLAY with grey moderately weak medium to coarse grained highly weathered		0.35						
Yellow grey moderately strong medium to coarse grained broken moderately weathered LIMESTONE in a yellow moderately coarse damp sndy clayey matrix (CORNBRASH) End of Borehole at 0.56 m								
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Remarks	sh as no furt	her nrog	ess coulc	he made			Scale	
Trial pit terminated at 0.56m in Cornbras	on, as no lun	ilei biogi	JJJ COUIC	. Do made			1:25	Sheet 1 of
oles: Algriais are described in accordance with BS 5930: 1999. With this and present in the real in merces Thicknessess given in brackets in de							Figure	

PELL FRISCHMANN CONSULTANTS LTD	CONSULTANTS LTD							
PERMANN	EQUIPMEN	T AND ME	THODS:	and the second second second		T	P12	
Bicester	GROUND LI	EVEL		COORDIN	IATES 00N: 2216	DATE	20/08/2	2001
NT: A.D Woodly	0.000 KEY	DEPTH	LEVEL			S/TESTS	INSTALLA	1
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No Test	BACKF	- 11.1
PSOIL-Mid brown soft fiberous silty clayey PSOIL with rootlets and organics (5%) with very		0.28						
d brown and orange mottled moderately firm hesive silty CLAY silow grey moderately strong medium to coarse ained broken moderately weathered LIMESTONE a yellow moderately coarse damp sandy clayey		0.39 0.55						
End of Borehole at 0.55 m	:		÷ .	: :				
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Remarks Trial pit terminated at 0.55m in Corn		further p	rogress c	ould be	made	. <u> </u>	Logged by Scale 1:25	Checke

PELL FRISCHMANN CONSULTANTS LTD	PIT REC	CORD		r	Trial Pit Number							
E:	EQUIPMEN	NT AND ME	THODS:				TI	P13				
Bicester	GROUND LEVEL COORDINATES 0.000 E: 456397.00N: 221451.							DATE 20/08/2001				
A.D Woodly	KEY	DEPTH	LEVEL		SAMPLE		i	INSTALLATIONS/				
TRATA DESCRIPTION	NET.	(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL				
OPSOIL-Mid brown soft fiberous sitty clayey OPSOIL with rotets and organics (5%) with very		0.00 0.20		0.20	D							
		0.34 0.40	· -									
Mid brown and orange mottled moderately firm cohesive silty CLAY with grey moderately weak medium to coarse grained highly weathered		0.40	: :									
Vellow grey moderately strong medium to coarse												
grained broken moderately weathered LIMESTONE in a yellow moderately coarse damp sandy clayey matrix (CORNBRASH)												
End of Borehole at 0.40 m	:											
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Remarks				•			Scal					
Trial pit terminated at 0.40m in Combrash, as no further progress could be	e made. Samples: Ti	213 S1 0.5kg P	ol				1:25	Sheet 1				
Notes: Materials are described in accordance with 8S 5930:1999. KH-Degins and reduced levels are in metres Thicknessess given in brackets							Fig	ure				

PELL FRISCHMANI CONSULTANTS LT		IRIAL FILINGUIND							Number				
		EQUIPMENT AND METHODS:											
	GROUND (0.000	LEVEL	 F:	COORDINAT	res v: 22265		DATE	07/08/2	2001				
lly					SAMPLES		s i	INSTALL	ATIONS/				
RIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	Туре	No	Test	BACK	1				
		0.00		0.10	D				. !				
		0.30											
andy clayey coarse angular BBLES of limestone, assessed	2	0.50											
as dense (highly to completely one)		0.50		0.60	D								
grey very thinly bedded grey very thinly bedded phly weathered moderately strong FONE, becoming damp at base o		0.80											
of Borehole at 0.80 m		:	**										
), in o	. Alphila			!						
		A.		102 mm/le	L OK								
		1/1/80-15	e de de la companya d	12 mg/4	OK								
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هم سیدی	ial nit etable throug	ahout unah	ole to nr	ogress beld	ow 0.8m		Scal						
roundwater encountered, tr	iai pit stable tilloug	ji lout, ur ut	Pr	J			1:25 Fig		Sheet 1				
roundwater encountered, tri d in accordance with BS 5930:1999. d levels are in metres Thicknessess given in	,	ghout, unat	ole to pr	ogress beld	0.8m		Scal	le					

PELL FRISCHMANN CONSULTANTS LTD	ANN TRIAL PIT RECORD							
TE: Bicester	EQUIPMEN	IT AND ME						214A
JENT:	GROUND L 0.000	EVEL	E: 4	00RDINA 56481.00	TES N: 2225	578.00	DATE	09/08/2001
A.D Woodly	KEY	DEPTH	LEVEL	1	SAMPLE	SITES	STS	INSTALLATIONS
TRATA DESCRIPTION		(Thick)	(mAOD)	Depth 0.10	Type	No	Test	BACKFILL
TOPSOIL				0.10				
the large coarse angular		0.30	:	0.40	D			
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.50	:		e Talendaria		A CONTRACTOR OF THE CONTRACTOR	
weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone)					The state of the s			
				<u> </u>				
	0 0 0 0 0					-		
		1.80	1	1.80	D.			
Stiff light grey CLAY with much coarse angular		1.00		1.80 1.80 1.80 2.00 2.00	D W B			
Stiff light grey CLAY with much coarse angular limestone gravel, becoming v. stiff below 2.4m		<u></u>		2.00	B			
						1		
		2.60						
End of Borehole at 2.60 m		2.00		:	4 .			
	ځ.							weder
				, Imde	PHL			1.8m
	***	A 4	Arse	ilm de	30 ms	Mes	> >>	
	The second secon		The second of th	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1	OK.	
			Miero	o/ 2	(d)		+K	
		:	. Ziric		; () :		O.	
		1	The second		496 "		dK.	4-7mg/
						i		
				7. 				
		a e e		= + +	i.	<u>. 1</u>	Logg	ged by Checked
Remarks							Sca	е
No groundwater encountered. Some minor instability 0.3-1.8m				*			1.25 Fig	Sheet 1
Notes: Materials are described in accordance with BS 5930:1999. Medical and reduced levels are in metres. Thicknessess given in brackets					• •			



PELL FRISCHMANN CONSULTANTS LTD								Trial Pit Number TP15A			
PELL											
Bicester		GROUND LEVEL COORDINATES 0.000 E: 0.00 N: 0.00					DATE 0	8/08/20	01		
NT: A.D Woodly	0.000 KEY	SAMPLES/TE		SITEST		NSTALLATIO	1 .				
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILI			
PSOIL		0.30		0.40	D						
ange brown very sandy clayey medium to coarse gular GRAVEL and COBBLES of limestone ghly to completely weathered limestone)			. · . . · . . · .								
	0 - 0 - 0	0.85		1.00	W						
ery stiff grey sandy Clay with much angular ledium to coarse angular gravel of limestone.											
		1.75									
End of Borehole at 1.75 m			*								
							dor				
		0.4	e de	o file			.om				
	CLEA	Arsenie	03	ris/kg) 00 K						
		Chrom		H	OK OK						
		Nichs!	Esko	. V v	PK						
		suppliere	. 68	7 : 41 :	OK		9/0/	2			
		· 1									
					: : : : :						
					:						
		-					Log	iged by	Checked		
Remarks Groundwater seepage at 1.6m, pit stable throughout, unable to progre	ess below 1.75m due	to limestone co	bbles and bould	ers in pit base			Sca 1:2		Sheet 1		

PELL FRISCHMANN	TOMEDIE RELATION							rial Pit umber				
CONSULTANTS LTD	EQUIPMENT	TP16										
Bicester	TTO T							DATE - COMMON				
NT: A.D Woodly	GROUND LE 0.000	EVEL	E: 4!	56527.00N	1: 22231	14.00		001				
	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	AMPLES Type		S INSTALLA Test BACKF					
RATA DESCRIPTION		0.00	(11) 1007	0.10	D							
OPSOIL		0.30			7							
ed brown very clayey sandy coarse GRAVEL and OBBLES of moderately strong limestone, boulder light grey limestone noticed in pit face 500 x 500 100mm, assessed as dense in pit walls	2 . 0 . 0 . 0	0.50	-		- 1			1				
100mm, assessed as dense in pit wais												
100mm, assessed as dense in provided the lower clayey sandy coarse angular RAVEL and COBBLES of moderately strong mestone, assessed as dense in pit walls, (highly completly weathered limestone)				1		Above the second						
	0 0 0 0											
	0.0000							-				
	0 4 . 0			1.50) W							
			1									
			1 .									
				1								
	0 - 0 - 0 0											
		0	1	:	: : :							
	0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2.60		2.6	0 B							
Very stiff grey mottled yellow sandy CLAY with much coarse angular limestone gravel.												
			; ; ,	· · · · · · · · · · · · · · · · · · ·	1							
End of Borehole at 3.10 m					1							
End of defended at a	an and an annual state of the s	and the same of th		, ama e	1 1 - 1 - 1 - 1 - 1 - 1							
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	*				1 -							
	. *	i :				<u> </u>			Charles			
		Lagran Mariana de Principal de Alban						,	Check			
Remarks Groundwater seepage at 2.6m. Slight spalling of pit walls 0.5-2.6m, had	nd vane lests on 2.6m	-3.1m Cu= 12	0+,120+,120+ k	N/m2			1:2	ale 25 gure	Sheet			
Notes: Materials are described in accordance with 8S 5930:1999. AH-the phs and reduced levels are in metres. Thicknessess given in bracki								J				

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD							Trial Pit Number				
ITE: Bicester	EQUIPMEN	NT AND ME	THODS:			TP16A						
LIENT: A.D Woodly	GROUND 0.000	UND LEVEL COORDINATES 30 E: 456411.00N: 2222					DATE	08/08/2001				
STRATA DESCRIPTION	KEY	DEPTH	LEVEL		SAMPLE			INSTALLATIONS				
TOPSOIL		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL				
		0.30										
Orange brown very sandy clayey medium to coarse angular GRAVEL and COBBLES of limestone (highly to completely weathered limestone)		0.60		0.50	D							
Light grey thinly bedded LIMESTONE moderately strong, bedding horizontal and approx. 10mm thick				i. I	:							
End of Borehole at 1.00 m		1,00										
End of Borenials at these w												
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						<u> </u>						
Remarks	. tt symbol				., 4		Logged	by Checke				
No groundwater encountered, trial pit st	able througl	nout, unat	ole to prog	ress belo	w im		Scale 1:25 Figur	Sheet 1				



Bicester

PELL FRISCHMANN CONSULTANTS LTD

TRIAL PIT RECORD

Trial Pit Number

TP17

EQUIPMENT AND METHODS:

CLIENT: A.D Woodly	GROUND 0.000	LEVEL		56500.00		197.00	DATE	09/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLI Type	ES/TES	TS Test	INSTALLATIONS/
TOPSOIL		0.00	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
		0.30	:	0.20 0.20	D B			•
Red brown very sandy clayey medium to cangular GRAVEL and COBBLES of limest	coarse		:	0.50	В			
(highly to completely weathered limestone				0.00	_			
		0.80						
Light grey slightly sandy course angular G of limestone (highly to completely weather	RAVEL							
limestone)		1.10	: :	1.10	W			
Very stiff grey mottled yellow sandy CLAY some to much coarse angular limestone g	with							
		-						
		4		1	! !	-		
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		7	gar is reserved answered	₽				
		7				And the state of t		
		2.60			:			
End of Borehole at 2.60 m		•						
	- 1 설. 1			: :	:			
The second secon	en e	1	sater					
	· O. O. m. dogth		1.1.m		4			
CLEA A	senie 25mg/kg:	>20				-		
Ch.	colotals 34 "	OK .						
		> K			1			
Co	pper en c							
W	icket All A	On Section			l i			
7.	inc 106 in	ok.	48 mg) ! · ·				
1000	phale 1995	g KC	4 u mg/					
	The second secon			a manager of			Logged	by Checked t
Remarks	W [*] A						Logger	

No groundwater encountered, trial pit stable throughout, unable to progress below 2.6m onto light grey strong limestone, hand vane on 1.1m-2.6m Cu= 120, 120+, 120 - 125

Sheet 1 of 1

Figure

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD						Trial Pit Number							
SITE: Bicester	EQUIPMEN	IT AND ME	THODS:			TP18								
CLIENT:	GROUND L 0.000	GROUND LEVEL COORDINATES D 0.000 E: 456492.00N: 222000.00			ORDINATES 3492.00N: 222000.0			09/08/2001						
A.D Woodly	KEY	DEPTH	LEVEL	and the second of the second o	SAMPLES/TES			INSTALLATIONS/						
STRATA DESCRIPTION	INC I	(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL						
TOPSOIL		0.00			k i									
0/ 1/2 / 1/4 4 Ab		0.30			1 1 2									
Stiff orange brown sandy CLAY with some to much subangular limestone gravel		0.00	· ·											
		0.60												
Yellow brown clayey sandy coarse angular GRAVEL and COBBLES of moderately strong limestone, assessed as dense in pit walls, (highly to completely weathered limestone)														
to completely weathered limestone)														
en de la composition della com		1.15												
End of Borehole at 1.15 m														
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	والمنطقية المراز المرازات	and the same of th				<u> </u>	Loga	ed by Checked						
Remarks			500m				Scale							
Trial pil stable throughout, unable to progress below 1,15m due to boulder of	of limestone (estimate	ed at 500mm x	500mm)				1 25	Sheet 1 c						
Notes: Materials are described in accordance with BS 5930:1999. NHM bihs and reduced levels are in metres. Thicknessess given in brackets in							Figi	nt6						

PELL FRISCHMANN CONSULTANTS LTD	TF	RIAL P	IT REC	ORD			rial P umb		
CONSULTATION	EQUIPMEN'	T AND ME	THODS:		and the same and the same and the same		TF	19	
Bicester	GROUND LI		C	OORDINA	ATES DN: 2218		ATE	20/08/2001	
NT: A.D Woodly	0.000		E: 45		SAMPLE		s	INSTALLATIONS/	1
RATA DESCRIPTION	KEY	DEPTH (Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL	-
PSOIL: Mid brown soft fiberous sndy clayey PSOIL with rootlets and organics (5%) with very		0.25		0.25	ם	-			
ange brown moderately firm confesive sitty sure, AY		0.52 0.62							
silow grey moderately strong medium to coarse ained broken moderately weathered LIMESTONE a yellow moderately coarse damp sandy clayey atrix (CORNBRASH) End of Borehole at 0.62 m	/:	0.02	and the second second						
CLEA Arenia 32 molto	> 20								
Chronium dd 11	DK.							, particular of the control of the c	
Carlot Change) Francis	· · · !			E .				
Copper 27 " S									
In the second se	K	· •							
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Sulphate (181 " 01	.	and the state of t		\$ \$					
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							CALL TO THE PARTY OF THE PARTY		
							The second second second second		
			and the second of the second o		garanta (*). Sura		!	ogged by Che	-cke
Remarks Trial pit terminated at 0.62m in Cornbrash, as no further progress coul	d be made. Samples	_{5:} TP19 S1 0.5	ikg Pal .					Scale 1:25 She Figure	eet

PELL FRISCHMANN CONSULTANTS LTD	TF	RIAL P	IT RE	CORD			Trial I Numb		
CHIVANN	EQUIPMENT AND METHODS: TP19/								
Bicester	GROUND LE								2001
ENT: A.D Woodly	0.000		E. 4	156501.00					
to the second se	KEY	DEPTH (Thick)	LEVEL (mAOD)	Deplh	SAMPLES	S/TES No	Test	1	_ATIONS/ KFILL
RATA DESCRIPTION	- 3/3/3	(Thick)	(111200)	Depin	1,700				
OPSOIL: Mid brown moderately cohesive silty ayey TOPSOIL with rootlets and organics (5%)		0.18							
id brown mottled grey stiff to firm collected with occasional grey moderately weak edium to coarse grained highly weathered meeting grayel. Becoming more competent with		0.50							
pepth ue grey-occasionally orange mottled very stiff shesive fissured silty CLAY with occasional range moderately coarse sndy fissures at creasing depths. Becomes more competent with epth, to resemble a dark blue grey occasionally range mottled very stiff fissured slightly reathered silty MUDSTONE at 2.80m								24	
epth, to resemble a dark blue grey occasionally range mottled very stiff fissured slightly reathered silty MUDSTONE at 2.80m				1.2	0 B				
							THE REAL PROPERTY OF THE PERSON NAMED IN COLUMN 1 IN C		
		La garante	1						
		2.80							
End of Borehole at 2.80 m	ಕ್ಕಿ	1							
				:					
					•				
							Log	ged by	Checked
Remarks Trial pit terminated at 2.80m in Mudstone, as no further progress could by	e made, Samples: TP	29 S1 1.2-1.6r	n				1:2		Sheet 1
							Fi	gure	

PELL FRISCHMANN CONSULTANTS LTD	, T	RIAL P		Trial Pit Number					
HELD MANN	EQUIPMEN	NT AND MET	THODS:				TI	20	İ
Bicester	GROUND	LEVEL		COORDINA	TES		DATE 20/08/2		
ENT: A.D Woodly	0.000		E: 4	56501.00			1		
	KEY	DEPTH	LEVEL (mAOD)	Depth	Type	S/TESTS		INSTALLATION BACKFILL	NS.
RATA DESCRIPTION		(Thick) 0.00	(IIIAOO)	Deptin	Туре				
OPSOIL: Mid brown fiberous sandy silty TOPSOIL ith rootlets and organics (5%) with very casional fine flint and limestone gravel		0.25		0.25	. D				
ellow and grey white weak coarse grained very ose medium dense silty SAND and light grey and sellow very weak coarse grained angular highly eathered limestone gravel									
		1.00							
Oark blue grey mottled orange brown very stiff onesive silty clay with orange moderately coarse sandy fissures at increasing depth and occasional angular limestone gravel. More competent with depth, resembling a dark blue grey occasionally orange mottled very stiff fissured damp slightly weathered silty MUDSTONE at 2.00m									
veathered sity in a 1									
the angles of the state of the		2.50					The second secon		
Dark blue grey very stiff damp fissured silty MUDSTONE with occasional orange mottling									
End of Borehole at 3.00 m		3.00							
		ă Î		1					
				1					
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		grant of the second second of the second second		44 / W W W W			Lo	gged by Che	ck
Remarks	·	oon 0 Skn Pot T	P20 S1 1.0-2.5r	n				ale	
Trial pil terminated at 3,00m in Mustone, as no further progress could be	e made, Şampies: 15	20 0.5kg (0), 11					1:2 Fi	gure She	
Notes: Materials are described in accordance with BS 5930:1999. Materials and reduced levels are in metres.Thicknessess given in bracket							, 1 1	90.0	

PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	PIT REC	ORD			Trial Pit Number				
E:	EQUIPMEN	T AND ME	THODS:				T	221			
Bicester				OORDINA	TES		DATE				
ENT: A.D Woodly	GROUND L 0.000		E: 45	56501.00	N: 2213			20/08/			
TRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	Type			INSTALL BACK			
Sharous candy silty TOPSOIL		0.00									
with rootlets and organico (over		0.25		0.25	В						
MADE GROUND Orange and blue grey mottled firm to stiff cohesive silty clay with grey moderately weak medium to coarse grained highly weathered limestone and very occasional rounded flint gravel. 2" Clay pipe encountered at 0.90m			: : :								
		0.90		*							
Blue grey moderately strong medium to coarse grained broken moderately weathered LIMESTONE in a grey and yellow moderately coarse damp sandy clayey matrix (CORNBRASH)		1.00									
End of Borehole at 1.00 m											
	***						1				
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			ere e			i	Lo	gged by	Checke		
Remarks Trial pit terninated at 1.0m in Cornbrash, as no further progress could be a	nade, Samples: TP	21 S1A, TP21	S1B (2 bags) 0.2	5-0.90m			. Sc	ale 25	Sheet		
Trial pit terninated at 1,0m in Cornbrash, as no further progress could be i	naga, apropias, ir							igure	1		

PELL FRISCHMANN CONSULTANTS LTD	11	RIAL F	IT REC	ORD		1	Trial I Numl	oer	
CHMANN	EQUIPMEN	T AND ME	THODS:				TI	P22	
Bicester	GROUND L	EVEL	<u> </u>	OORDINA 56667.00	ES J. 2226	22636 00		07/08/2	001
ENT: A.D Woodly	0.000	DEDTH	LEVEL			S/TESTS		INSTALLA	TIONS
RATA DESCRIPTION	KEY	(Thick)	(mAOD)		Туре	No	Test	BACKF	ILL .
)PSOIL		0.20		0.10	D				
ed brown very sandy clayey coarse angular RAVEL and COBBLES of limestone, assessed om the pit walls as dense (highly to completely eathered limestone)		0.60							
ellow and light grey very thinly bedded noderately to highly weathered moderately strong ostrong LIMESTONE		0.80							
o strong LIMESTONE End of Borehole at 0.80 m									
o.i.m. dopt							and the second s		
) 	1							
CLEA Viserie 21 mg/kg >= Chrismium 66 11 OK Lead 24 11 OK	we '								
Widel 36 11 OK		i 			:				
Zinc 65 " OK									
Sulphate 907 " OK									
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Remarks No groundwater encountered, trial pit	stable throu	ghout, ur	nable to pr	ogress be	8.0 wol	im		cale	Shee

Notes:
Materials are described in accordance with BS 5930:1999.

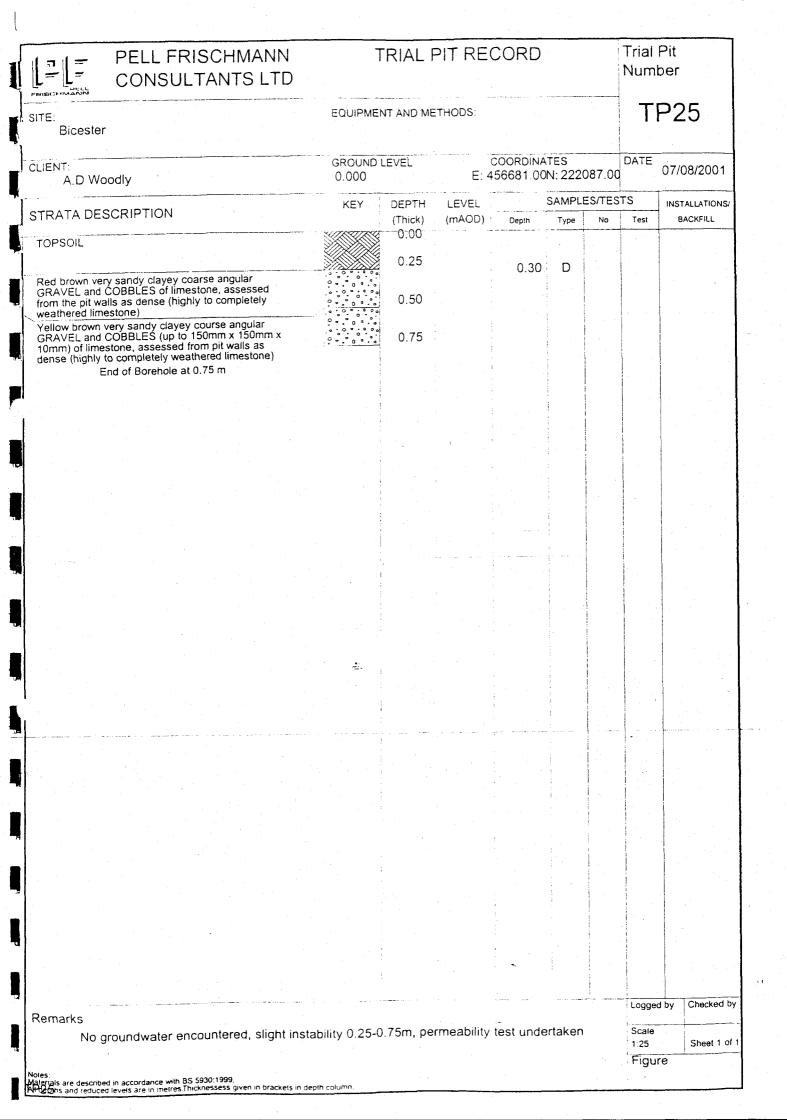
Anterials are described in accordance with BS 5930:1999.

Anterials are described in accordance with BS 5930:1999.

PELL FRISCHMANN CONSULTANTS LTD	TR	IAL P	TREC	ORD		1	rial f Numb	oer				
Bicester	EQUIPMENT AND METHODS:							TP22A				
NT:	GROUND LE	VEL	E: 4	COORDINA 56615.00	TES N: 2225		DATE	07/08	/2001			
A.D Woodly		DEPTH	LEVEL		SAMPLE	S/TES		4	LATIONS/			
ATA DESCRIPTION	NC I	(Thick)	(mAOD)	Depth 0.10	Туре	No	Test	BAC	KFILL			
PSOIL				<u>,</u> , , ,								
		0.30										
d brown very sandy clayey coarse angular RAVEL and COBBLES of limestone, assessed m the pit walls as dense (highly to completely eathered limestone)	3.0	0.60										
nathered limestone) Illow and light grey very thinly bedded bederately to highly weathered moderately strong strong LIMESTONE		1.00										
		1.00										
tiff to very stiff light grey and brown mottled v. andy fissured CLAY with cobbles in the upper orface												
							a particular of the state of th					
				# 1 1 1								
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				2.0	0 D							
		2.40		1 . 1 .	:							
Light blue grey very thinly bedded moderately weathered moderately weak MUDSTONE End of Borehole at 2.50 m		2.50						-				
	. . €.											
	en en en en en en en en en en en en en e	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										
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		4		1 -								
								Logged	by Check			
Remarks				a ta aras	ace hal	law 2 !	5m	Scale				
Remarks Very minor groundwater seepage,	trial pit stable	througho	out, unabl	e to progr				1:25 Figur	Shee			

EDIECEIMANN	PELL FRISCHMANN CONSULTANTS LTD	· T	RIAL F	PIT REC	CORD			Trial P Numbe	
SITE: Bicester		EQUIPMEN	NT AND ME	THOOS:				TP	23
CLIENT:	podly	GROUND I	GIVOOND EEVEE				DATE 0	7/08/2001	
STRATA DES		KEY	DEPTH (Thick)	LEVEL (mAOD)		SAMPLES/TESTS Type No Te		S I	NSTALLATIONS/ BACKFILL
TOPSOIL			0.00	<u>```</u>					
			0.30						
from the pit wa weathered limi	y sandy clayey coarse angular COBBLES of limestone, assessed alls as dense (highly to completely estone)		0.50	:					
Yellow brown GRAVEL and 10mm) of lime	very sandy clayey course angular COBBLES (up to 150mm x 150mm x stone, assessed from pit walls as to completely weathered limestone)		0.80						
Very stiff light CLAY with mu gravel	grey mottled brown fissured friable ich medium coarse angular limestone				,				
				·					
					2.00	D			
					2.50	D			
Dark blue gre	v very thinly bedded moderately		2.65 2.75		:				
weathered mo	y very thinly bedded moderately oderately strong to strong LIMESTONE End of Borehole at 2.75 m		:		:				
					i -				
									· .
MARKET I STATE AND AND AND AND AND AND AND AND AND AND						:	<u> </u>	Logged	by Checked b
Remarks No	groundwater encountered, trial pit w	valis stable th	iroughout	, unable to	progress	s below	2.75m		Sheet 1 of
Notes: Materials are descrit	ped in accordance with BS 5930:1999.	denih columa						Figure	

Bicester CLIENT: GROUND LEVEL COORDINATES DA A.D Woodly 0.000 E: 456647.00N: 222200.00 KEY DEPTH LEVEL SAMPLES/TESTS		4
Bicester CLIENT: A.D Woodly COORDINATES DA COORDINATES COORDINATES DA COORDINATES COORDINATES COORDINATES DA COORDINATES COORDINATE	07/0	8/2001
A_D Woodly O_000 E: 456647.00N: 222200.00 KEY DEPTH LEVEL SAMPLES/TESTS STRATA DESCRIPTION (Thick) (mAOD) Depth Type No T TOPSOIL Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong LIMESTONE	07/0	8/2001
STRATA DESCRIPTION KEY DEPTH LEVEL SAMPLES/TESTS (Thick) (mAOD) Depth Type No T TOPSOIL Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong LIMESTONE	INSTA	5/2001
STRATA DESCRIPTION (Thick) (mAOD) Depth Type No T TOPSOIL Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong LIMESTONE 1.10		ALLATIONS/
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong LIMESTONE 0.30 0.60 0.70 B	Test BA	ACKFILL
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		
weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow and light grey very thinly bedded moderately to highly weathered moderately strong LIMESTONE		
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong 1.10		
Yellow and light grey very fining bedded moderately to highly weathered moderately strong 1.10		
End of Borehole at 1.10 m		
		·
	-	
	l l	
	Logged by	Checked by
l de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	Scale	
Notes: Malgripls are described in accordance with BS 5930:1999.		Checked by



PELL FRISCHMANN CONSULTANTS LTD		. 1	Trial Num							
SITE: Bicester	EQUIPME	nt and me	ETHODS:				TP26			
CLIENT:	GROUND 0.000	LEVEL		COORDINA 56591.00		DATE 979.00		20/08/2001		
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)		SAMPLI Type	ES/TES	TS Test	INSTALLATIONS BACKFILL		
TOPSOIL: Mid brown soft fibrous sandy clayey TOPSOIL with rootlets and organics (5%) and occasional flint and limestone gravel		0.36		0.36	D					
Orange brown moderately firm cohesive sandy CLAY										
Yellow grey moderately strong medium to coarse grained broken moderately weathered LIMESTONE in a yellow moderately coarse damp sandy clayey matrix (CORNBRASH)		0.80								
End of Borehole at 0.90 m	·:		:							
						-				
	2.			· ·				1		
			The second secon							
					4					
							Logger	by Checked		
Remarks Trial pit terminated at 0.9m in Cornbrash, as no further progress could be made	e. Samples: TP26 S	\$1 0.36m					Scale 1.25 Figur	Sheet 1		

Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number CONSULTANTS LTD **TP27** EQUIPMENT AND METHODS: Bicester COORDINATES GROUND LEVEL 20/08/2001 E: 456615.00N: 221792.00 CLIENT: 0.000 A.D Woodly SAMPLESITESTS INSTALLATIONS/ LEVEL DEPTH KEY BACKFILL STRATA DESCRIPTION (mAOD) Depth Type (Thick) 0.00 TOPSOIL: Mid brown soft fibrous sandy clayey TOPSOIL with rootlets and organics (5%) and occasional flint and limestone gravel 0.30 Grey brown mottled very stiff cohesive silty sandy 0.72 Orange brown and grey mottled stiff friable silty clay with light grey coarse grained angular LIMESTONE gravel and cobbles 1.00 Yellow grey moderately strong medium to coarse rained very loose broken moderately weathered LIMESTONE in a yellow moderately coarse damp sandy clayey matrix (CORNBRASH). Becomes more competent and difficult to excavate with depth depth 1.80 End of Borehole at 1.80 m Checked by Logged by Remarks Scale Trial pit terminated at 1.80m in Combrash, as no further progress could be made. Samples: TP27 S1 0.5kg Pot, TP27 S1 0.3-0.7m, TP27 S2 Sheet 1 of 1 1:25 Figure Notes. MalgrigIs are described in accordance with 85 5930;1999. Articuths and reduced levels are in metres.Thicknessess given in brackets in depth column



PELL FRISCHMANN CONSULTANTS LTD

TRIAL PIT RECORD

Trial Pit Number

Figure

EQUIPMENT AND METHODS:

TP28

ENT: A.D Woodly	GROUND 0.000	LEVEL		00RDINA 56656.00		00.00	DATE	20/08/2001
	KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS	INSTALLATIONS
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
OPSOIL: Mid brown soft fibrous sandy clayey OPSOIL with rootlets and orgsnics (5%) and ccasional flint and limestone gravel		0.23		0.23	D			
lid brown stiff to firm cohesive silty CLAY with rey moderately weak medium to coarse highly eathered limestone gravel		0.33	***	0.33	В			
ellow brown and grey weak coarse grained very								
ery weak coarse grained highly weathered mestone				·				
		1.50						
Park blue occasionally brown and yellow mottled ery stiff cohesive fissured silty CLAY with occasional orange moderately coarse sandy								
ssures at increasing depths. Becomes more competent with depth, resembling a dark blue grey accasionally orange mottled very stiff fissured lightly weathered silty mudstone at 3.40m					!	-		
lightly weathered silty mudstone at3.40m			: : :					
					1 .		and accommodately and a second	
			•		· .			
					1		1	
End of Borehole at 3.40 m		3.40						
0.03m depth Chromium 42 mg/	ie OV							
	ok .				1			
Zine 87 m	GK.							
Sulphate 773 ".	oy.	•		·.		ř.		
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					4			
			grand and			ب السائد الأب	Logge	d by Checked

	PELL FRISCHMANN CONSULTANTS LTD		TRIAL F	PIT RE	CORD		Trial Pit Number					
Bicester		EQUIPME	NT AND ME	THODS:			1.	TI	TP29			
LIENT: A.D Wo	odly	GROUND 0.000	LEVEL		COORDINA 156651.00		151.00	DATE	20/08/200			
STRATA DES		KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS Test		LATIONS/		
			(Thick)	(mAOD)	Depth	Туре	NO	Test	BAC.			
TOPSOIL with occasional fine	brown soft fibrous sandy silty rootlets and organics (5%) with very flint and limestone gravel.		0.30									
Mid brown stiff grey moderate highly weather	to firm cohesive silty CLAY with ly weak medium to coarse grained ed limestone gravel											
ŀ												
·							Maria II.					
₹. 0 5			1.20	:	1. <u>2</u> 0 1.20	D B						
Yellow and gre silty SAND wit	ey weak coarse grained very loose h much light grey and yellow very grained highly weathered limestone											
gravel			1.60						-			
Dark blue grey stiff cohesive horange moder	y occasionally orange mottled very fissured silty CLAY with occasional ately coarse sandy fissures at					:						
increasing der depth, resemb	ately coarse sandy fissures at boths. Becomes more competent with bling a dark blue grey occasionally divery stiff fissured slightly		1							- -		
weathered silt	d very stiff fissured slightly y MUDSTONE at 2.70m		† † †							e jes		
-			-									
			2.70									
	End of Borehole at 2.70 m		-		1	:						
							-					
						d						
:					1	1 1 1						
			:	a	and the same of th			Logg	ed by	Checked b		
Remarks		· · · · · · · · · · · · · · · · · · ·	nn e 1 1 2 1 5 =	TP29 S2				Scale				
Trial pit terminated	d at 2.70m in Mudstone, as no further progress could be	made, Samples: TP2	(9 ST 1.2 - 1.0H	, 11 L3 JE				1:25 Figi		Sheet 1 o		
Notes: Materials are descrit	ped in accordance with BS 5930;1999 and layers are in metres.Thicknessess given in brackets in	n depth column.										



PELL FRISCHMANN CONSULTANTS LTD

rvoies; Materials are described in accordance with BS 5930:1999. Art100hs and reduced levels are in metres.Thicknessess given in brackets in depth column

TRIAL PIT RECORD

Trial Pit Number

TP30

Figure

ITE: Bicester EQUIPMENT AND METHODS:

The second last of the colonial to the second state of the second

ENT: A.D Woodly	GROUND LEVEL 0.000		E: 4	00RDINA 56651.00	N: 2212		L	20/08/2	2001
and the second s	KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS	INSTALL	
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACK	FILL
OPSOIL: Mid brown fibrous sandy silty TOPSOIL th rootlets and organics (5%) with very casional fine flint and limestone gravel		0.00	· ·	0.20	D				
d brown and orange moderately firm fnable sitty indy sandy CLAY with occasional orange oderately coarse sandy fissures and grey oderately weak medium to coarse grained highly		0.50							
cathered LIMESTONE gravel cathered LIMESTONE gravel cathered Limestone grained loose silty and with light grey and yellow very weak coarse cained highly weathered LIMESTONE gravel		and the state of t							
		And the state of t							
		A THE STREET STREET		1.80	B				
Dark blue grey occasionally orange mottled very stiff cohesive fissured silty CLAY with occasional standards fissures		2.00							
orange moderately coarse sandy fissures. Becomes more competent with depth, resembling a stark blue grey occasionally orange mottled very stiff fissured slightly weathered silty MUDSTONE at 3.0m				! !					
		3.00							
End of Borehole at 3.00 m				1 1	*.				
				, 112 Marie 1911					
Algob majo									
Chromium 30 mg/	ieg ok.								
Michael Le vi	OVC	,							
Time The	, OK								
18 " Supplied of 418"	OK	1 7 8 9				and the second second			
				# : : :					
		- ! - :	en en egenerage.	- 11111	. 1		Log	ged by	Checke
Remarks Trial pit lerminated at 3.0m in Mudstone, as no further progress could be many the state of the stat	ade. Samples: TP	30 0.5kg Pot, T	P30 S1 A, B, C.	TP30 S2 1.8-3	.0m		Sc.		Sheet

TRIAL PIT RECORD Trial Pit PELL FRISCHMANN Number CONSULTANTS LTD **TP31** EQUIPMENT AND METHODS: SITE Bidester DATE COORDINATES GROUND LEVEL 20/08/2001 E: 456651.00N: 221151.00 CLIENT: 0.000 A.D Woodly SAMPLES/TESTS INSTALLATIONS/ LEVEL KEY **DEPTH** BACKFILL STRATA DESCRIPTION (mAOD) Depth (Thick) 0.00 TOPSOIL: Mid brown moderately cohesive clayey TOPSOIL with rootlets and organics (5%) with very occasional fine flint and limestone gravel 0.26 D 0.26 Mid brown and orange soft becoming firm moderately cohesive sandy becoming firm moderately cohesive sandy becoming silty with depth CLAY 0.70 Blue grey occasionally orange mottled very stiff cohesive fissured silty CLAY with occasional orange moderately coarse sandy fissures and grey moderately weak medium to coarse grained highly weathered limestone gravel 0.87 at 0.870: Brown and orange moderately weak medium to coarse grained broken weathered LIMESTONE in a grey and yellow moderately coarse damp sandy clayey matrix (CORNBRASH) End of Borehole at 0.87 m Checked by Logged by Remarks Scale Trial pit terminated at 0.87m in Combrash, as further progress could be made. Samples: TP31 0.5kg Pot, TP31 S1 0.87m Sheet 1 of 1 1:25 Figure nules: Materials are described in accordance with BS 5930:1999. Artigans and reduced levels are in metres. Thicknessess given in brackets in depth column

PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F		Trial Pit Number					
SITE: Bicester	EQUIPMEN	NT AND ME	THODS:				TP3		
CLIENT: A.D Woodly	GROUND I	EVEL	E:	COORDINA 456798.00	NATES 00N: 222591.00		DATE	07/08/2001	
	KEY	DEPTH	LEVEL		SAMPLES/TES		TS	INSTALLATIONS	
STRATA DESCRIPTION	- w / / F W / / T T T F	(Thick)	(mAOD)			No	Test	BACKFILL	
TOPSOIL		0.00		0.10	D				
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.60		0.50	D				
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		0.80			· .				
End of Borehole at 0.80 m									
							-		
0.5m depth		ă.							
Arsenia 18 mg/leg ox									
Nietwie 29 m OK						Andrew Agency			
- Crie - 23 OK					:				
Sulphote 857 - OK									
	<u>ئ</u> .				:				
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	at a second								
				· : '		<u> </u>	Logged	by Checked	
Remarks No groundwater encountered, trial pit stab	le througho	out, unabl	e to prog	gress below	0.8m		Scale	Sheet 1	
140 grounding -							1:25	Sneer	

PELL FRISCHMANI CONSULTANTS LT	*	TRIAL	PIT RE	CORD			Trial Pit Number				
Bicester	EQUIPME	NT AND MI	ETHODS:				T	P33			
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 456749.00		473.00	DATE	07/08/200			
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	· · · · · · · · · · · · · · · · · · ·		ES/TES		INSTALLATION			
TOPSOIL		0.00	(IIIAOO)	Depth 0.10	Type D	No	Test	BACKFILL			
		0.25									
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.70		0.50 0.50	B D			· .			
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		1.00									
End of Borehole at 1.00 m				;							
								İ			
A Landa			:				-				
0.5 400					•						
Arsenia 17 mg/	9 016										
Chromium 18 11			:								
Wield on y	C.K.										
7,0 33 W 6	DK.			!							
Sulphale 780 " c	DVC.										
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		<u> </u>					Logged t	y Checked			
emarks No groundwater encountered, trial pi	it stable througho	ut, unable	e to progre	ess below	1 m		Scale 1:25 Figure	Sheet 1			

OUND LE	OEPTH (Thick) 0.30 0.80 1.30 1.40			N: 22228 SAMPLES	36.0d	DATE	07/08/204 INSTALLATION BACKFILL	ONS/
EY : (0.30 0.80	E: 4	.56775.00M 	SAMPLES Type D	36.0d S/TES	rs	INSTALLATIO	ONS/
	(Thick) -0.00 0.30 0.80		_{Оер≀н} 0.10	Type D				
	0.00 0.30 0.80	(mAOD)	0.10	D	No	Test	BACKFILL	
	0.30							
	1.30		0.50	D				
0 9 . 0					<u>-</u>			
	1.40					ì	1 .	
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e, unab	ie to pro	ogress bel	ow 1.4m			1:25	She	et 1
	e, unab		e, unable to progress bel	e, unable to progress below 1.4m			e, unable to progress below 1.4m Scale	

PELL FRISCHMANN CONSULTANTS LTD		TRIAL I	PIT RE	CORD			Trial Num	
SITE: Bicester	EQUIPME	NT AND ME	T AND METHODS:				T	P35
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 56799.00		200.00	DATE	07/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLI Type	ES/TES	TS Test	INSTALLATIONS BACKFILL
TOPSOIL		0.30		0.20	D			
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.70		0.50	В			
End of Borehole at 0.70 m	. 0 . 0							
						r		
	:							
	<u>2</u> .				: : : :			

Remarks

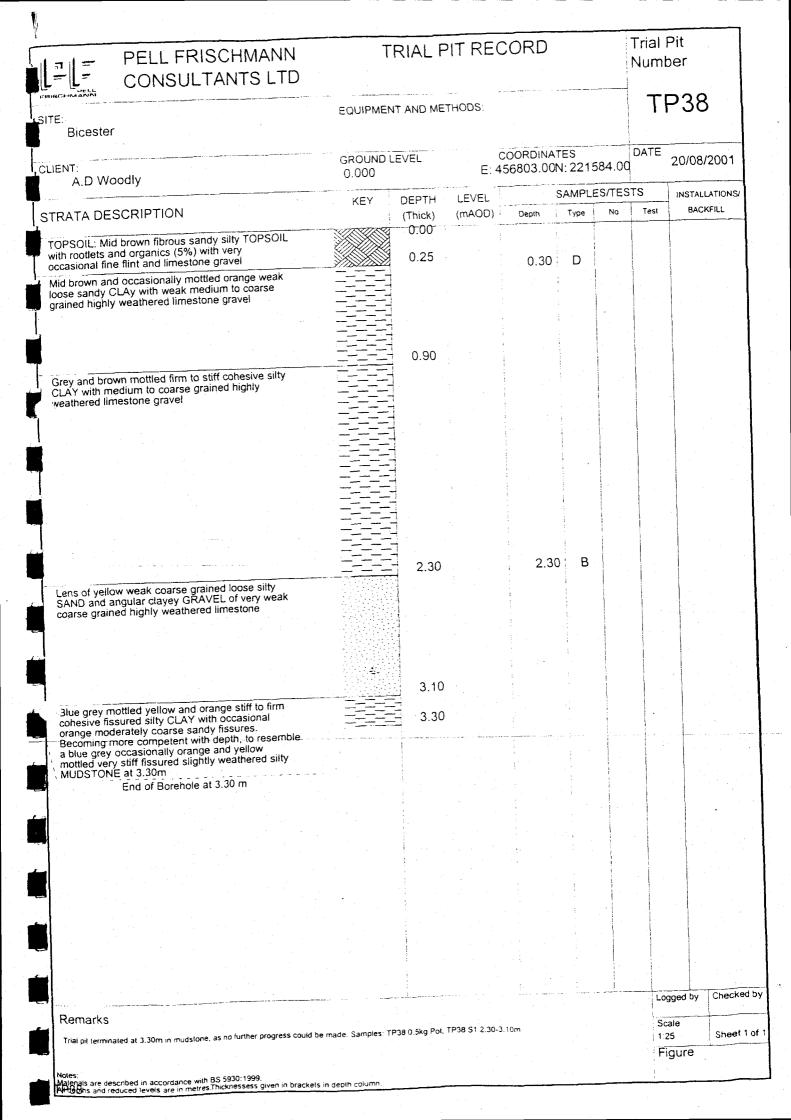
No groundwater encountered, trial pit unstable, unable to progress below 0.7m due to boulders of limestone

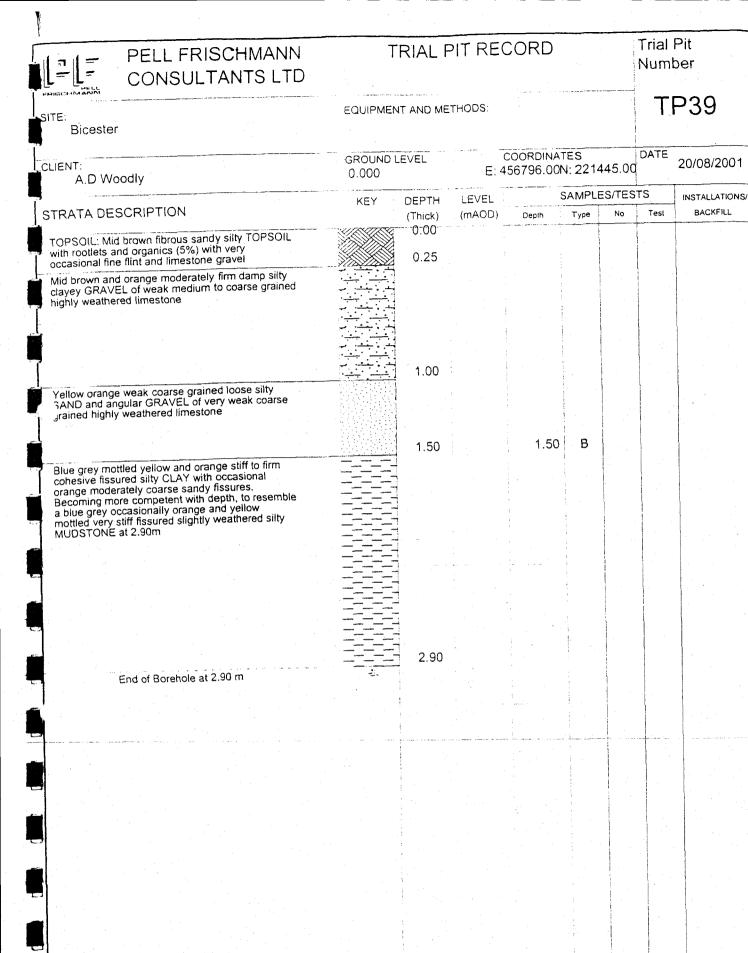
Logged by	Checked by
1-;	
Scale	
1:25	Sheet 1 of 1
·	
Figure	

Notes: Materials are described in accordance with BS 5930-1999. AH-130ths and reduced levels are in metres. Thicknessess given in brackets in depth column

PELL FRISCHMANN CONSULTANTS LTD	Τ	RIAL F	PIT RE	CORD			Trial Pit Number				
CHMANN	EQUIPMEN	T AND ME	THODS:				TP36				
Bicester	GROUND L 0.000	EVEL	E: 4	000RDINA 56771.00	TES N: 2219		DATE	20/08/	3/2001		
A.D Woodly	KEY	DEPTH	LEVEL		SAMPLE	S/TES	rs	INSTALL	ATIONS/		
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACK	FILL		
OPSOIL: Mid brown soft fibrous silt clayey OPSOIL with rootlets and organics (5%)		0.20						-			
ght orange and brown weak loose friable silty LAY with grey moderately weak medium to parse grained highly weathered limestone gravel		0.50		0.50	W						
ellow grey strong hard medium to coarse grained roken moderately weathered LIMESTONE in a ellow/tan moderately coarse damp sandy calyey natrix (CORNBRASH)		1.00									
End of Borehole at 1.00 m		1.00]							
Loct er	a de la companya de l										
Sulphate 46	moll market										
		(man in in in in in in in in in in in in in	4								
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					: •						
									<u></u>		
Remarks		in Combrash	as no further pr	ogress could be	made. Sam	ples: TP3		не	Check		
Remarks 0.5m water sample remoned from base of pit after approx. 5 mins. Trial p	oit terminated at 1,0m	in Complasif		- , 			1:25	gure	Sheet		

PELL FRISCHMANN CONSULTANTS LTD	T1	RIAL P	T REC	ORD		:	Trial Numl		
HIMANN	EQUIPMEN	T AND ME	THODS:				T	P37	
Bicester	GROUND L	EVEL	· · · · · · · · · · · · · · · · · · ·	COORDINA	TES	754.00	DATE	20/08/2	2001
NT: A.D Woodly	0.000			56800.00	SAMPLE		<u> </u>	INSTALL	ATIONS/
RATA DESCRIPTION	KEY	DEPTH (Thick)	(mAOD)	J. 1., 1.4. 1.4. 1.4. 1.4. 1.4. 1.4. 1.4.				BACKI	FILL
PSOIL: Mid brown soft clayey TOPSOIL with others and organics (5%) with very occasional officer and limestone gravel		0.25		0.25	D				
pht/mid brown soft damp moderately cohesive ty sandy CLAY becoming wetter with depth									
and grey hard medium to coarse grained		0.85						-	
ellow and grey hard medium to coarse grained oken rubbly weathered LIMESTONE in a brown nd yellow moderately coarse wet sandy clayey natrix (CORNBRASH)								,	
		1.60							
End of Borehole at 1.60 m									
					: : :				
Diasin depth Arsenic 15 mg/kg	ANK								
Chromium 50 4 0	Kari								
Copper 21 " O	<u></u>								
Nichel 28 " OK									
Sulphate 564 " 614									3 (2 to 10 t
				()					
				• i					
						: <u>- </u>	1	ogged by	Check
Remarks Water encountered at 1.60m insufficient for sample. Trial pit terminated	at 1,60m in Combra	ish, as no furth	er progress cou	d be made. Sa	imples: TP3	37 0,5kg P	ot	Scale 1:25 Figure	Shee





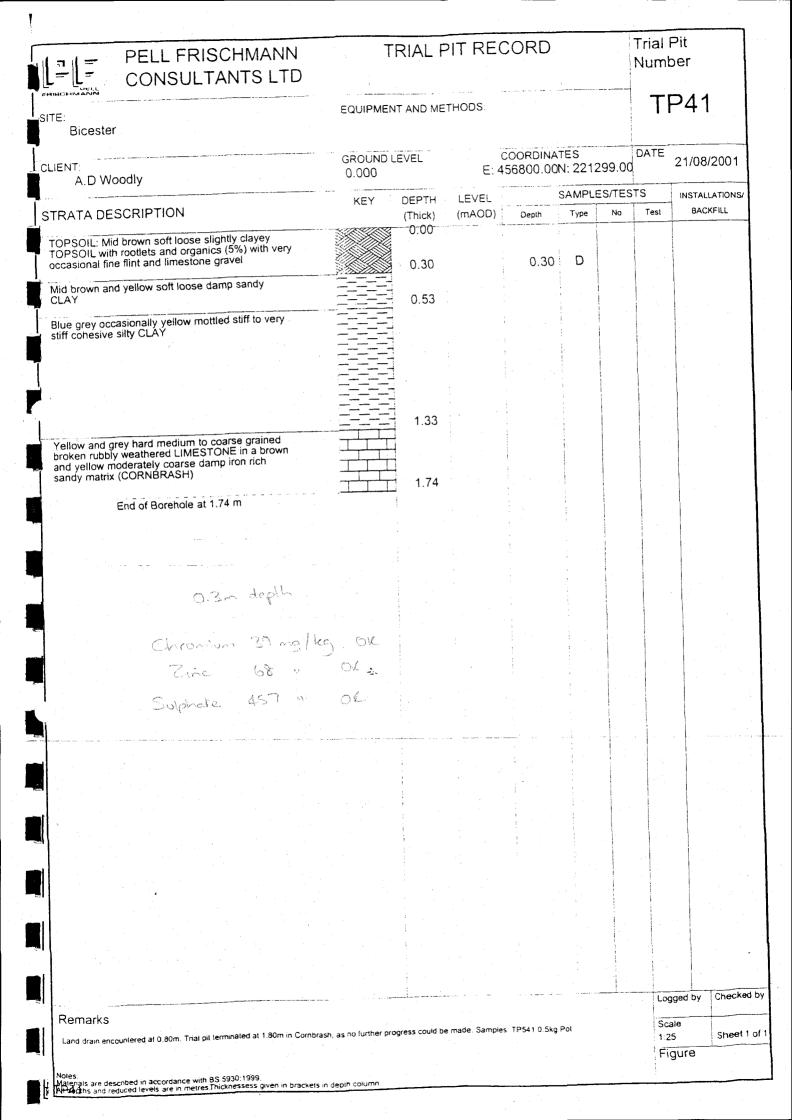
Scale
1:25 Sheet 1 of
Figure

Remarks

Trial pit terminated at 2,90m in Mudstone, as no further progress could be made. Samples: TP39 S1 1,50-2,90m

Notes: Materials are described in accordance with BS 5930:1999. An 1951ns and reduced levels are in metres.Thicknessess given in brackets in depth column

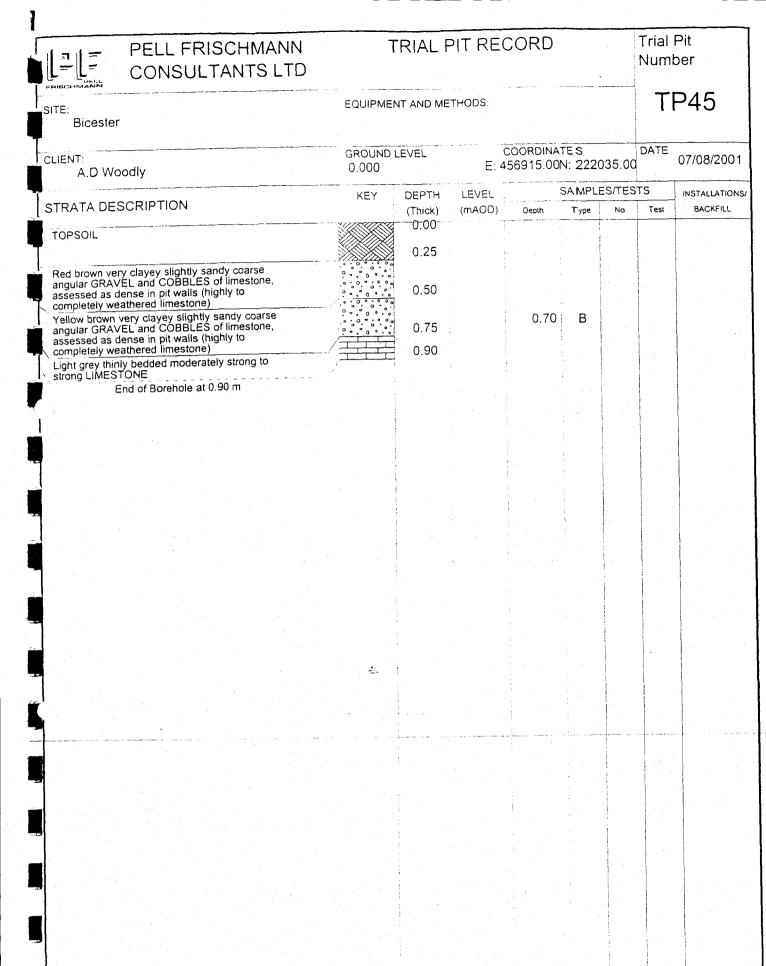
	PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	PIT REC	CORD			T ria l Numb		
ITE: Bicester		EQUIPMEN	IT AND ME	THODS:				TI	P40)
LIENT:		GROUND L 0.000	EVEL	E: 4	COORDINA 56800.001	ΓES N: 2212	299.00	DATE	21/08	/2001
A.D Wo	odly		DCDTH	LEVEL		SAMPLE		L	INSTAL	LATIONS/
TRATA DES	SCRIPTION	(Thick) (m.		(mAOD)	Depth	Туре			BAC	KFILL
TOPSOIL: Mid TOPSOIL with occasional fine	brown moderately cohesive clayey rootlets and organics (5%) with very afint and limestone gravel		0.29		0.29	D				
Mid brown and moderately col	I orange soft becoming firm hesive silty slightly sandy CLAY al fine angular limestone gravel asionally yellow mottled stiff to firm red damp silty CLAY with inge and yellow moderately coarse is, and small (<1m) dark brown and is damp iron rich sand lenses		0.40							
								No.		
			2 30							
matrix (CORN	llow and grey hard to very hard arse grained broken well cemented blitic LIMESTONE in a brown and ately coarse damp sandy clayey NBRASH) End of Borehole at 2.30 m		2.30 2.30					A PART OF THE PART		
		2.	1							
							-	Logg	ged by	Checked
Remarks Trial pit terminate	ed at 2,30m in Combrashm, as no further progress could b	e made. Samples: T	P40 0,5kg Pol					Scal 1:25	- 1	Sheet 1 c



GROUND 0.000 KEY	DEPTH	·	COORDINA 56961 001	TEC		TF	P42		
0.000	DEPTH			TEC	TP42				
KEY			30301.00	N: 2225	1	DATE	07/08/2001		
		LEVEL	·	SAMPLE	S/TES	rs	INSTALLATIONS/		
	(Thick) 0.00	(mAOD)	Depth 0.10	Туре	No	Test	BACKFILL		
	0.25		0.10		,				
			0.50	D					
	0.90								
/	0.85			der a service de la constante					
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	1	and the second second		· parties and a second		Logge	d by Checked		
Om Linable to order	ess pil below 0	.95m				Scale			
.am, unable to progr	235 pr. 321011 0					1:25 Figu	Sheet 1 o		
	9m, unable to progr	O. 90 O. 95	0.90	0.50	0.50 D	0.50 D	0.50 D 0.90 0.95 Logger Sm. unable to progress pit below 0.95m Logger Scale 1.25 Figur		

GROUND LI 0.000 KEY			COORDINA 156966.001	TES N: 22234		1	P43
0.000	DEPTH (Thick)	E: 4	\$56966.00 1	res N: 22234		1	
KEY	(Thick)				48.00	DATE	07/08/2001
		(mAOD)		SAMPLES	S/TES	TS	INSTALLATIONS/
			Depth	Туре	No	Test	BACKFILL
* . 0 *	0.30		0.30	D			
	0.60						
	0.60 0.65						
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	and the second second second second second						d by Checked
through	out, una	ble to pro	gress belov	w 0.65m	1	Scale 1:25	Sheet 1 c
						e throughout, unable to progress below 0.65m	Figu

THE CHIMANN	PELL FRISCHMANN TRIAL PIT RECORD CONSULTANTS LTD						Trial Pit Number				
ITE: Bicester		EQUIPMENT AND METHODS:						TP44			
CLIENT: A.D Woodly		GROUND LEVEL COORDINATES 0.000 E: 456947.00N: 22					200.00	DATE	07/08/2001		
STRATA DESC	CRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	i consumeration	SAMPLE Type	ES/TES No	TS Test	INSTALLATIONS BACKFILL		
TOPSOIL			0.00								
assessed as der completely weat	clayey slightly sandy coarse L and COBBLES of limestone, nse in pit walls (highly to thered limestone)		0.55		0.50	D					
En	d of Borehole at 0.55 m				1						
		:			1						
•					!						
						:					
	and the second second					! :					
	0.5m depth		* *								
	Arsenie 2009/kg	rok.		:							
	Chronium 33 "	OK-			!						
	Copper 16 or	ov.				:					
		OK									
	CINC DI	OK .									
	Sulphate 618 "	OK.			i : :	•					
		<u>.</u>									
The second of th	e <u>a la composição de l</u>	a para servici e servicione	I I			.1					
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Remarks								Logge	d by Checked		
	ountered, trial pit stable throughout, unable to progre	ss below 0.55m (possib	le strong lime	slone bedrock o	r limestane boul	ders)		Scale 1:25	Sheet 1		
						ž.		Figu	re		



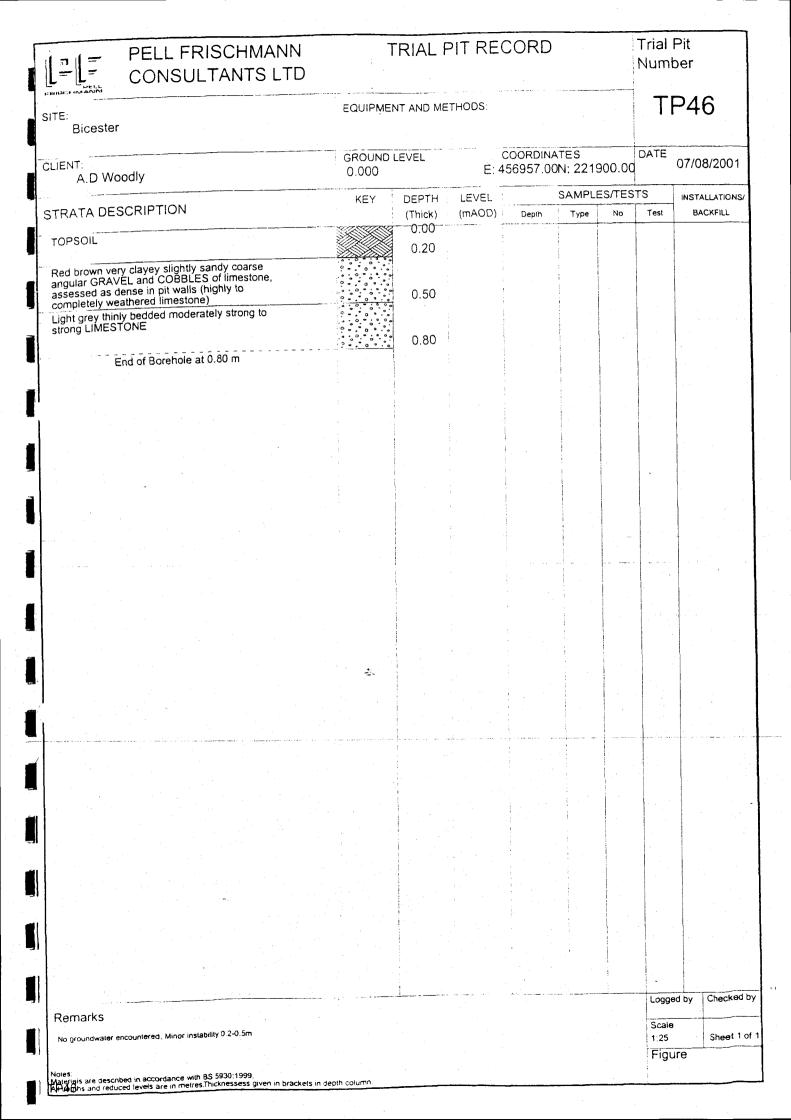
No groundwater encountered, trial pit stable throughout, unable to progress below 0.9m, permeability test carried out

Logged by Scale Sheet 1 of 1 1:25

Checked by

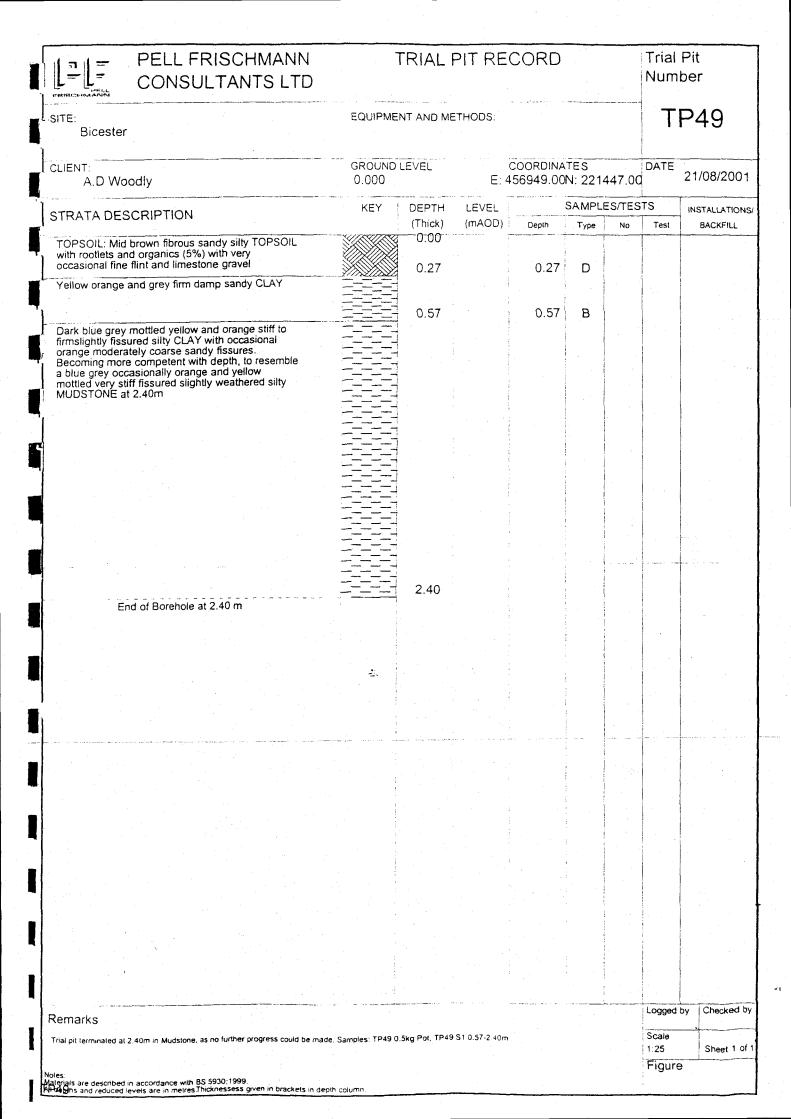
Figure

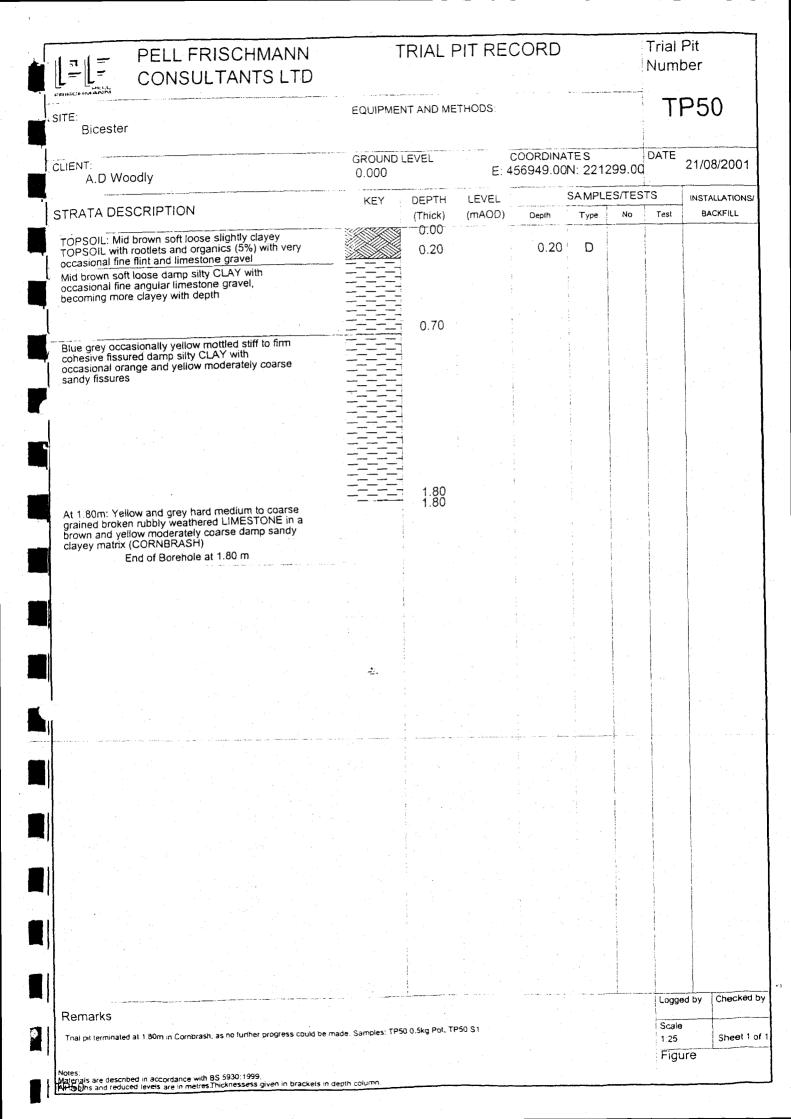
lotes. Jaierials are described in accordance with BS 5930:1999. HHA ohs and reduced levels are in metres.Thicknessess given in brackets in depth column

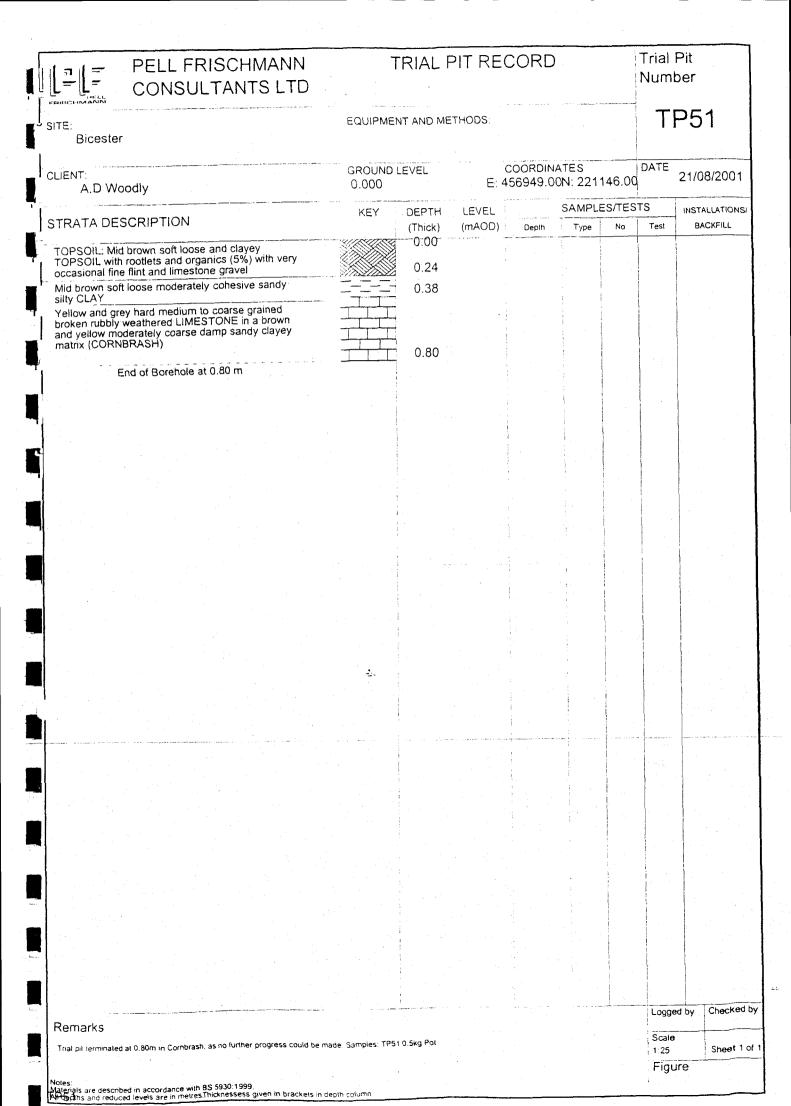


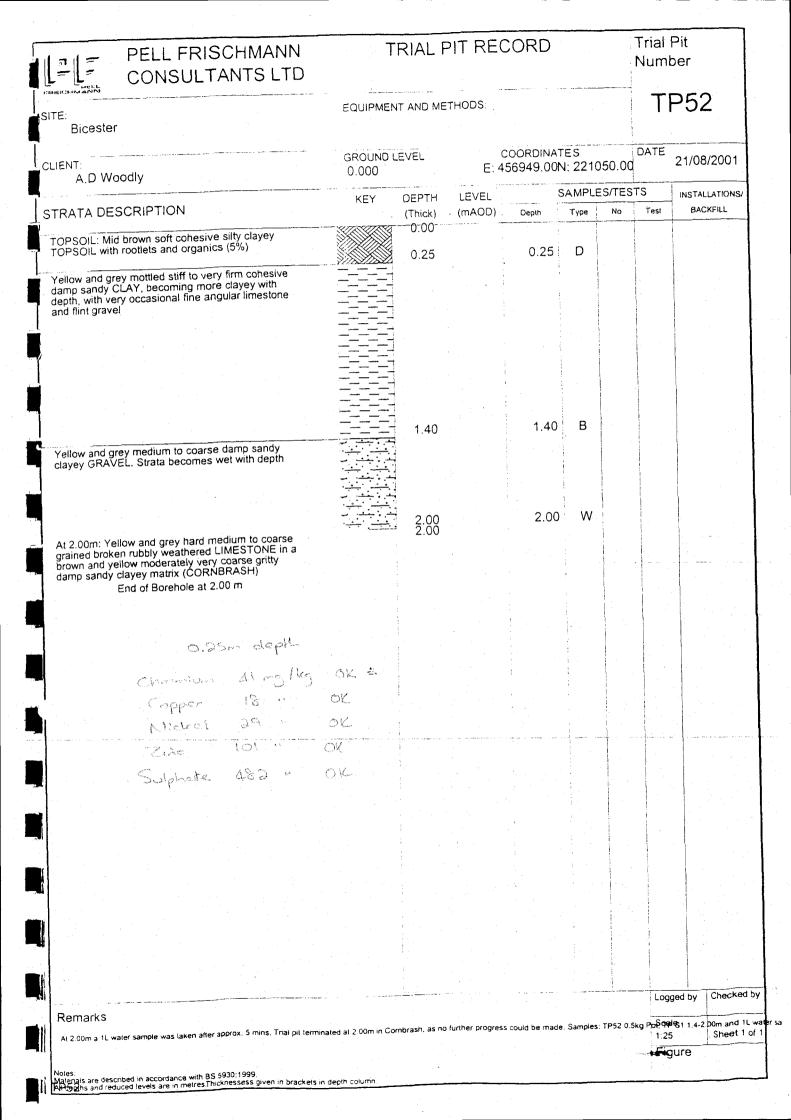
PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD TANTS LTD						Trial Pit Number			
BCHMANN	T AND ME	ID METHODS:					TP47			
Bicester	GROUND LEVEL COORDINATES					DATE 21/08/2001				
IENT: A.D Woodly	0.000 KEY DEPTH		E: 456926.00N: 221717.0			717.00)		STALLATIONS	
			LEVEL	SAMPLES/T			Test	INSTALLA BACKF		
TRATA DESCRIPTION		(Thick) 0.00	(mAOD)	Depth	Type	No	rest	BACK		
OPSOIL: Mid brown soft clayey TOPSOIL with ootlets and organics (5%) with very occasional one flint and limestone gravel		0.30		0.30	D					
Mid brown soft moderately cohesive sandy CLAY										
		0.60	,		1					
Yellow and grey hard medium to coarse grained broken rubbly weathered LIMESTONE in a brown and yellow moderately coarse damp sandy clayey matrix (CORNBRASH)										
		1.00		1.00	W					
End of Borehole at 1.00 m			* * * * * * * * * * * * * * * * * * *							
(x,y) = (x,y) + (x,y	· !				1					
	Water									
0.3m depth	0.90	`		1						
GULA Arsens Song My 700										
Chromium 63 " OK										
Michael 34 11 OK		; :		į '	÷					
30 " Fot 26.5"		1 .		÷ .						
Sulphate 636: 10K	133 ma	į 10								
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	N. C.	- 1 - 1 - 1								
		<u> </u>					Logge	d by Ci	hecke	
Remarks			•							
Remarks Water sample taken at 1,00m after approx. 30 mins. Trial pit terminated at 1	.00m in Cornbrash	, as no further	progress could b	e made. Sampl	es: TP51 0	Skg Pol,	1:25	S	heet	
							Figu	re		

PELL FRISCHMANN CONSULTANTS LTD	PELL FRISCHMANN TRIAL PIT RECORD CONSULTANTS LTD EQUIPMENT AND METHODS:						Trial Pit Number TP48			
CHIMANN										
Bicester ENT:	GROUND LEVEL 0.000		E: 4	COORDINATES E: 456949.00N: 221601.00				DATE 21/08/20		
A.D Woodly						AMPLES/TES		INSTAL	'ALLATIONS/	
RATA DESCRIPTION	KEY	DEPTH (Thick)		Depth	Туре	No	Test		KFILL	
		0:00								
DPSOIL: Mid brown soft loose clayey TOPSOIL th rootlets and organics (5%) with very ccasional fine flint and limestone gravel		0.30		0.30	D					
id brown and yellow grey mottled firm to stiff amp sandy gravelly CLAY		0.60	1							
the grow firm to stiff cohesive silty CLAY with		0.00								
lue grey firm to stiff cohesive silty CLAY with parse white and orange sand lenses			1	1						
	_===	1.00		1.00	В					
ellow and grey white hard medium to coarse rained broken rubbly weathered LIMESTONE in a rown and yellow moderately coarse damp iron rich andy matrix (CORNBRASH)				1	:					
rown and yellow moderately coarse dains incomment and matrix (CORNBRASH)				!	•					
		1.70								
End of Borehole at 1.70 m					1					
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			and the second	Charles and the second of the con-			Logg	ed by	Check	
Remarks		unori e :	TD48 C11 0 1 3	'Om			Scal			
Trial pit terminated at 1.70m in Cornbrash, as no further progress could be	made. Samples: Tf	248 0.5kg Pol.	1240 311. 4-1.6				1:25 Fig		Sheet	









PELL FRISCHMAN CONSULTANTS LT		TRIAL PIT RECORD							Trial Pit Number			
csiTE: Bicester	E	EQUIPMENT AND METHODS:							P53			
CLIENT: A.D Woodly		GROUND 0.000	LEVEL			COORDINATES 57092.00N: 222486.0			07/08/2001			
STRATA DESCRIPTION		KEY DEPTH LEVEL SAMPLES/TES (Thick) (mAOD) Depth Type No				TS Test	INSTALLATIONS/					
TOPSOIL			0.00		0.10	D						
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone), firm red brown clay lens (max 0.2m thick) noted in N. W face of the pit between 0.2m and 0.4m in depth	X		0.70		0.30	D						
End of Borehole at 0.70 m		İ		•								
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	10 mg 10 10 mg 10	: :	A STATE OF THE STA				i !	Logged	by Checked by			
Remarks								Scale				
NO GROUNDWATER ENCOUNTERED								1:25 Figur	Sheet 1 of			

PELL FRISCHMANN	TRIAL	Trial Pit Number				
CONSULTANTS LTD			TP54			
	EQUIPMENT AND M	ETHOUS.				
Bicester	GROUND LEVEL	C E: 45	OORDINATES 57242.00N: 222435.0	DATE 07/08/2001		
NT: A.D. Woodly	0.000 KEY DEPTH	LEVEL	SAMPLES/TE	ESTS INSTALLATIONS/		
RATA DESCRIPTION	(Thick)	(mAOD) -	Depth Type No	Test .		
DPSOIL	0.25					
oft to firm yellow and grey mottled very sandy LAY with much coarse angular gravel of mestone.						
			0.80 D			
	1.20	<u>)</u>				
White and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE						
End of Borehole at 1.25 m						
Arsonie Songling of						
Chambra 36 " O'						
Copper IT	У .					
	<u>a</u> .	#				
		• •				
				Logged by Checks		
		Same de la green de la constant de		Scale		
Remarks No groundwater encountered, trial pit stable throughout				1:25 Sneet		
Notes: Materials are described in accordance with 85 5930:1999. Materials are described in accordance with 85 5930:1999. Alterials and reduced levels are in metres Thicknessess given in brace.			· · · · · · · · · · · · · · · · · · ·			

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD						Trial Pit Number				
SITE: Bicester	EQUIPMEN	NT AND ME	THODS:				TF	P55			
CLIENT: A.D Woodly	GROUND I	EVEL	E: 4	COORDINA 57119.00	TES N: 2222	 281.00	DATE	07/08/2001			
	KEY	DEPTH	LEVEL		SAMPLI	ES/TES	TS	INSTALLATIONS/			
STRATA DESCRIPTION		(Thick)	(mAOD)	Depth 0.10	Туре	No	Test	BACKFILL			
TOPSOIL		0.30	·	U, (U							
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) Yellow slightly sandy coarse angular GRAVEL and COBBLES of limestone (highly to completely weathered timestone)		0.60		•							
End of Borehole at 0.90 m	? • . • . ° . ° . ° . ° .	0.90			1						
O-1 in dopth				The desired of the second of t							
CLEA Arsenie Dimolly > 20 Chamillon 33 " OK Lead 26 " OK							The second secon				
Mickel 33 in OK Zine 75 W OK											
Sulphate 696 " DK	ë.										
								W			

) 		Logge	d by Checked			
Remarks No groundwater encountered, pit unstable between 0.3-0.9m							Scale 1:25 Figu	Sheet 1			

Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number CONSULTANTS LTD **TP56** EQUIPMENT AND METHODS: SITE: Bicester DATE COORDINATES GROUND LEVEL 07/08/2001 E: 457100.00N: 222101.0d CLIENT 0.000 A.D Woodly SAMPLES/TESTS INSTALLATIONS/ LEVEL DEPTH KEY STRATA DESCRIPTION Test BACKFILL Νo (Thick) (mAOD) Depth Type 0.00 TOPSOIL 0.25 Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, (highly to completely weathered limestone) 0.50 Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, (highly to completely weathered limestone) В 0.70 1.00 End of Borehole at 1.00 m Checked by Logged by Remarks No groundwater encountered, that pit unstable at 0.25-1m, unable to progress below 1m due to cobbles and boulders, permeability test undertaken Scale Sheet 1 of 1 1:25 Figure Notes: Materials are described in accordance with BS 5930:1999. Alt tophs and reduced levels are in metres.Thicknessess given in brackets in depth column

PELL FRISCHMANN CONSULTANTS LTD	PELL FRISCHMANN TRIAL PIT RECO CONSULTANTS LTD							r
SITE: Bicester	EQUIPMEN	IT AND ME	THODS			-	TP	57
CLIENT:	GROUND L 0.000	EVEL		COORDINA .00	TES V: 0.00	D	ATE 16	6/08/2001
A.D Woodly	KEY	DEPTH	LEVEL		SAMPLES	/TESTS	S IN	STALLATIONS/
STRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
TOPSOIL		0.00		0.30	D			
Stiff orange brown CLAY with much coarse angular limestone gravel		0.45	:					
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone. (highly to completely		0.68			AMPLIANCE OF THE PARTY OF THE P			
weathered limestone) End of Borehole at 1.80 m			<i>.</i>					
					:			
0.3m depth								
CLEA Arsenia 49 mg/kg >	90				STATE OF STA			
Chromium 66 ; "	SVK.						-	
Wickel 48 "	OK -	:						
Zine 89 11	ok							
Sulphate 48. ".	01.							
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Remarks							Scale 1:25	Sheet 1 of
							Figur	
Notes: Materials are described in accordance with BS 5930-1999. Alterials and reduced levels are in inefres. Thicknessess given in brackets.	in depth column.	·					1 .	

PELL FRISCHMANN CONSULTANTS LTD	TF	RIAL P	IT REC	ORD			Trial Pit Number				
-MARIN	EQUIPMEN	r and me		and the second s			T	P58			
Bicester					*FC		DATE				
NT:	GROUND LI	EVEL	E: 0.	• -	N: 0.00			16/08/2	2001		
A.D Woodly	KEY	DEPTH	LEVEL	and the second second second	SAMPL	ES/TE	STS	INSTALLA	i i		
RATA DESCRIPTION		(Thick) 0.00	(mAOD)	Depth		140	1030				
DPSOIL .		0.25		0.20	D						
ed brown very sandy clayey coarse angular RAVEL and COBBLES of limestone, (highly to Impletely weathered limestone)		0.60									
ellow brown very sandy clayey course angular RAVEL and COBBLES (up to 150mm x 150mm x 0mm) of limestone, (highly to completely eathered limestone)		1.50									
End of Borehole at 1.80 m											
			•			1					
o so death											
OLEA Arsone Dinglikg >	. 115 an	: :									
CLEA Arsonic 21 mg/89 /	0 K										
Chromium 57 0	e e e e e e e e e e e e e e e e e e e					1					
Copper 29 "	OK &										
Nieural 36 vi	- OX					-					
Ziric 135											
Sulphate 365 "	<u>ok</u>	1 · ·	A. M. L. L. L. E. 1981 C. L. 1981	and a substitute of the second			- 7				
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								Logged by	Checke		
Remarks								Scale 1:25 Figure	Sheet		

PELL FRISCHMANN CONSULTANTS LTD	7	RIAL	PIT.RE	CORD		1	Trial Pit Number				
SITE: Bicester	EQUIPME	NT AND ME	THODS				T	P59			
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 157100.00		591.00	DATE	21/08/2001			
TA DESCRIPTION	KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS	INSTALLATIONS			
STRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL			
TOPSOIL: Dark brown soft clayey TOPSOIL and organics (5%)		0.25									
Mid brown and grey mottled moderately firm cohesive damp sandy CLAY, becoming sandier with depth				0.35	D						
		0.60									
Yellow and brown coarse grained moderately weak loose slightly clayey gravelly SAND with medium coarse angular flint and limestone gravels, becoming more clayey with depth											
		· · · · · · ·						·			
		1.80 1.80		1.80	W						
At 1.80m: Yellow and grey hard medium to coarsegrained angular broken rubbly weathered LIMESTONE cobbles, in a brown and yellow weak damp sandy clayey matrix (CORNBRASH)			• •								
End of Borehole at 1.80 m	Salar Service Service										
0.35m dapth											
Chromism 42 mg/kg	OK 2.										
Coppers 20 4	OK :		•								
Zinc 104 "	Ole			- · · · · · · · · · · · · · · · · · · ·							
Sulphate 698 m	- OV				:						
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	·	<u></u>		·			Logge	by Checked by			
Remarks						054.0.5	Logged				
At 1.80m a 1L water sample was taken after approx. 40 mins. Trial pit termina		nbrash, s no fu	mner progress o	could be made. S	amples: T	н59 0.5kg	Figur	GIAGOT 1 S.			
Notes. Materials are described in accordance with BS 5930:1999. Air togins and reduced levels are in metres. Thicknessess given in brackets in de Air togins.	epth column."										

PELL FRISCHMANN CONSULTANTS LTD	11 (1) (2 1 /1 1 (2 0 0 1 (2							Trial Pit Number				
SITE: Bicester	EQUIPMENT AND METHODS:						TP59A					
CLIENT: A.D Woodly	GROUND 0,000	LEVEL		COORDINA 157100.00		447.00	21/08/2001					
STRATA DESCRIPTION	KEY	DEPTH	LEVEL (mAOD)			ES/TES		INSTALLATIONS/ BACKFILL				
		(Thick)	(MAOD)	Depth	Туре	No	Test	BACKFILL				
TOPSOIL: Mid brown soft loose slightly clayey TOPSOIL with rootlets and organics (5%) with very occasional fine flint and limestone gravel		0.30		0.30	D			·				
Mid brown soft loose damp clayey SAND with occasional fine angular limestone gravel, becoming more clayey with depth												
		1.00	· · · · · · · · · · · · · · · · · · ·	1.00	В	-						
Yellow, grey and white hard medium to coarse jrained broken rubbly weathered LIMESTONE cobbles and boulders in a brown and yellow dmp sandy clayey matrix (CORNBRASH)												
sandy clayey matrix (CORNBRASH)					· ·							
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	1111			:								
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		2.40										
End of Borehole at 2.40 m					1							
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Remarks		and the second s					Logged					
At 2.40m water encountered but not enough for a 1L sample. Trial pit terminate	ed at 2.40m in Corn	brash, as no fu	irther progress o	could be made.	Samples:	ΓP59A 0.5I	1.23	211661 1 01				
Notes: Materials are described in accordance with BS 5930:1999. Materials and reduced levels are in metres. Thicknessess given in brackets in de			•				Figur	е				

Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number CONSULTANTS LTD TP60 EQUIPMENT AND METHODS SITE: Bicester COORDINATES DATE GROUND LEVEL CLIENT: 21/08/2001 E: 457100.00N: 221300.00 0.000 A.D Woodly SAMPLES/TESTS INSTALLATIONS/ DEPTH LEVEL STRATA DESCRIPTION **BACKFILL** (Thick) (mAOD) Depth 0.00 TOPSOIL: Mid brown soft cohesive silty clayey TOPSOIL with rootlets and organics (5%) D 0.34 0.34 Mid brown and grey mottled stiff to very firm cohesive damp sandy CLAY, becoming more clayey with depth 0.90 Red and orange mottled soft to firm cohesive damp ilty CLAY with occasional fine angular limestone At 1.50m: Yellow and grey hard medium to coarse grained broken rubbly weathered LIMESTONE in a brown and yellow moderately very coarse gritty damp sandy clayey matrix (CORNBRASH) End of Borehole at 1.50 m 0.3am depth Arsenic 33 mg/kg > 20 CLEA Chronium 54 m Copper 28 u ~~\Z. Michel 39 4 OK Zinc 105 -OV Sulphate 865 " $\bigcirc \lor \subset$ Checked by Logged by Remarks Scale Trial pit terminated at 1,50m in Cornbrash, as no further progress could be made. Samples: TP60 0,5kg Pot

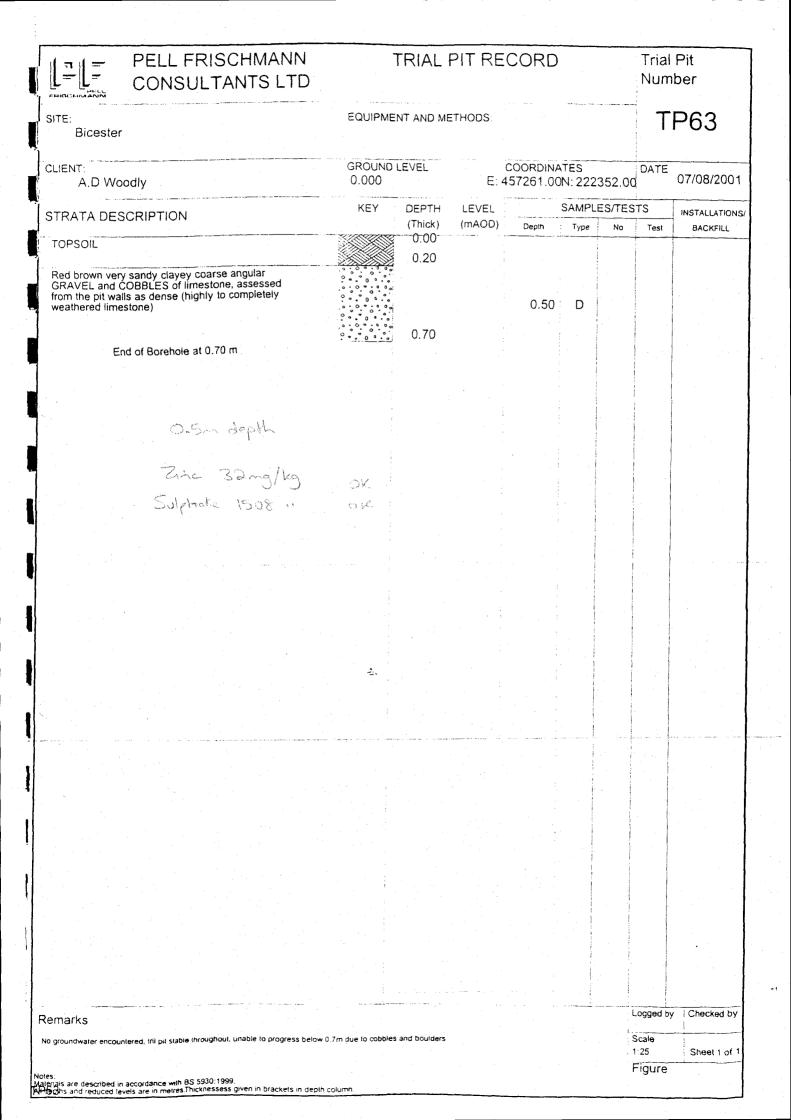
ioles. Algrials are described in accordance with 8S 5930:1999. IP 150hs and reduced levels are in metres.Thicknessess given in brackets in depth column

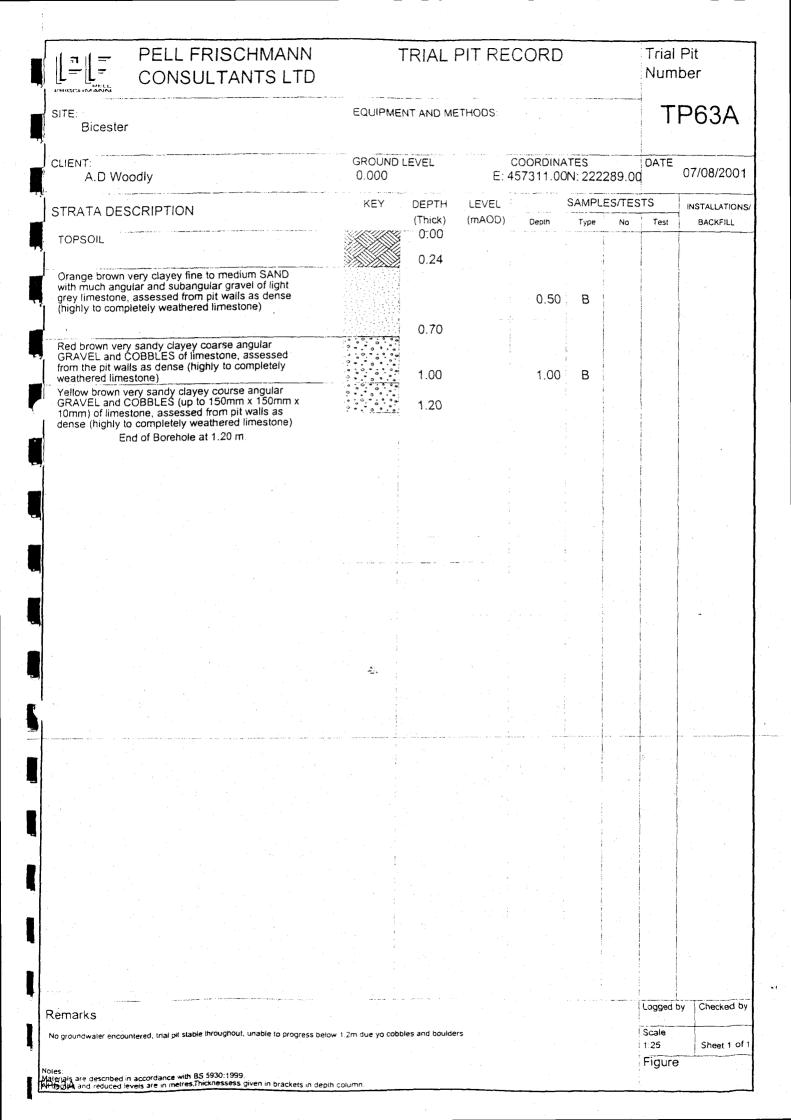
Sheet 1 of 1

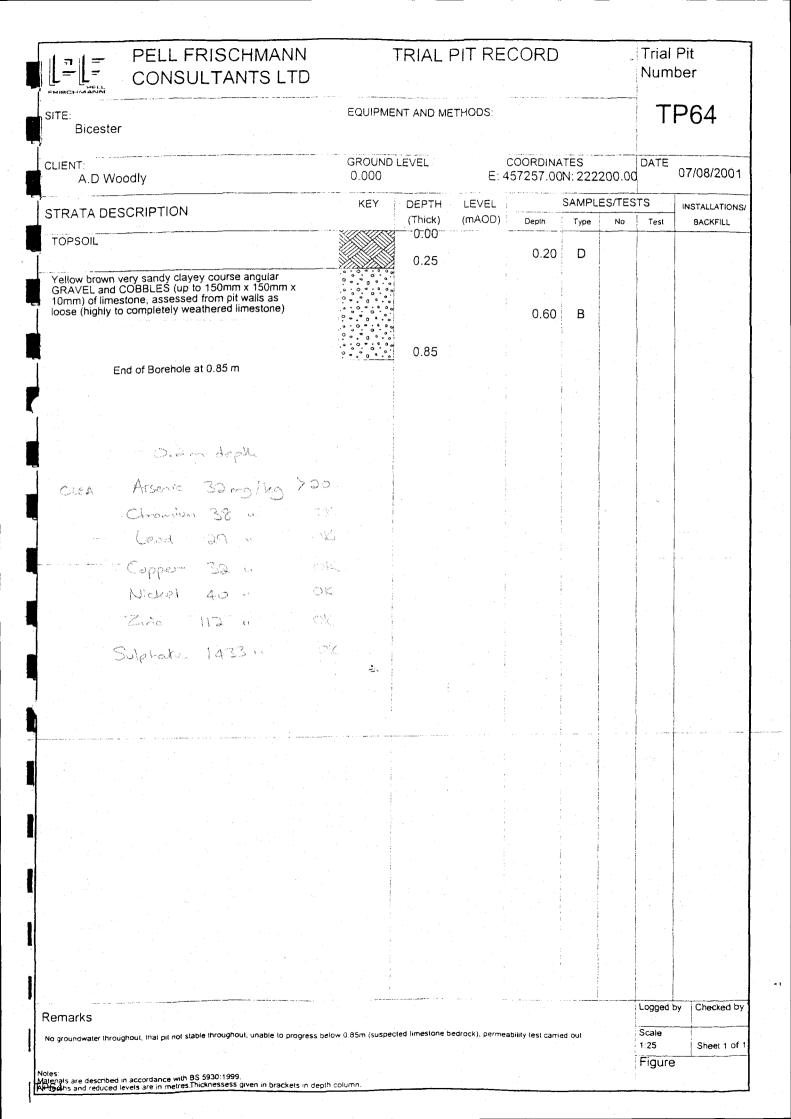
1:25 Figure

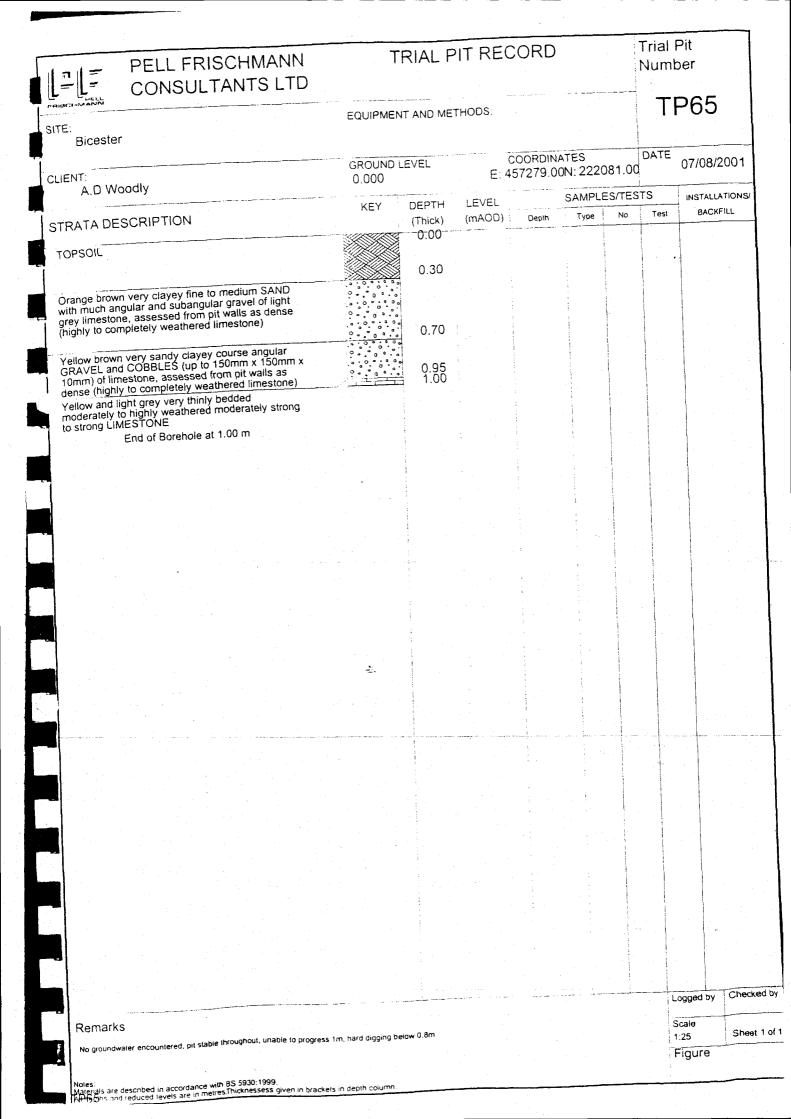
PELL FRISCHMANN CONSULTANTS LTD	1	TRIAL PIT RECORD							Trial Pit Number			
E: Bicester	EQUIPMEN	EQUIPMENT AND METHODS:										
ENT: A.D Woodly	GROUND L 0.000	EVEL	E; 4	COORDINA 57100.00	res V: 2213	300.00	DATE	21/08/	/2001			
	KEY	DEPTH	LEVEL		SAMPLE	S/TES	;		LATIONS			
RATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	Na	Test	BAC	KFILL			
DPSOIL: Mid brown soft cohesive silty calyey DPSOIL with rootlets and organics (5%)		0.25		0. 26	D							
ellow and grey mottled stiff to very firm cohesive amp sandy CLAY, becoming more clayey with epth, with very occasional fine angular limestone and flint gravel. Gravel content increases with		0.50		0.50	В							
epth ellow and grey hard medium to coarse grained roken rubbly weathered LIMESTONE in a grey and ellow moderately very coarse damp sticky sandy ayey matrix (CORNBRASH)												
		1.20										
End of Borehole at 1.20 m						!						
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Trial pit terminated at 1.20m in Combrash, as no further progress could	be made. Samples: TP	561 0.5kg Pat	TP61 S1 0.5-1	20m			1:25		Sheet			

EBHECOMANN	PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD							Pit ber			
SITE: Bicester		EQUIPME	NT AND MI	ETHODS:				TP62				
CLIENT:	odly	GROUND 0.000	LEVEL		COORDINA 457073.00		1078.00	DATE	21/08/2001			
STRATA DES	CRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)			ES/TES		INSTALLATIONS/			
TOPSOIL: Mid to TOPSOIL with representation occasional fine in	orown moderately cohesive clayey ootlets and organics (5%) with very flint and limestone gravel		0.00	(INACE)		Type	No	Test	BACKFILL			
Mid brown, yello	ow and orange soft to firm esive damp sandy CLAY with angular limestone gravel		0.23		0.25	D						
				: :								
Blue grey occasi	ionally yellow mottled stiff to firm d damp silty CLAY with		0.83	:	0.83	В		The state of the s	(C)			
 occasional orang 	ge and yellow moderately coarse and small (<1m) dark brown and damp iron rich sand lenses											
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mottled very stiff MUDSTONE with coarse sandy fiss			2.30 2.30									
End	of Borehole at 2.30 m											
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Remarks		مركد المالية	· · · · · · · · · · · · · · · · · · ·				Lo	gged by	Checked by			
	m in Mudstone, as no further progress could be made. S	Samples: TP62 0.5kg	Pot, TP62 S1	0.83-1 _{.8m}				ale	Ch			
otes: Ligigls are described in ac	cordance with 8S 5930:1999. s are in metres.Thicknessess given in brackets in depth o						: 1:: F 	gure	Sheet 1 of 1			









PELL FRISCHMANN CONSULTANTS LTD		TRIAL	PIT RE	CORD		- Comment	Trial Pit Number						
ITE: Bicester	EQUIPMENT AND METHODS: TP6												
LIENT: A.D Woodly	GROUNG 0.000	DLEVEL		COORDINA 457190.00			DATE	07/08/2001					
	KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS	INSTALLATIONS/					
TRATA DESCRIPTION		(Thick)	(mAOD)	Depih	Туре	No	Test	BACKFILL					
TOPSOIL		0.20		0.20	0								
Orange brown very clayey fine to medium SAND with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.40		0.30	В								
(highly to completely weathered limestone) Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone			:										
		0.95 1.00		0.80	В								
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMES TONE		1.00	:		-								
End of Borehole at 1.00 m													
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Remarks			1				Logged	by Checked					
No groundwater encountered, trial pit stable throughout							Scale 1:25	Sheet 1 o					
							Figure						

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD							Trial Pit Number				
SITE: Bicester	EQUIPME	NT AND ME	THODS:				T	P67				
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 1.00	TES N: 0.00)	DATE	16/08/2001				
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)		SAMPLI		TS	INSTALLATIONS/ BACKFILL				
TOPSOIL		0.00	(111400)	Depth	Туре	No	Test	BACKFIEL				
		0.30										
Orange brown very clayey fine SAND			•	0.50	В		į	:				
		0.70										
Stiff orange brown sandy CLAY with much coarse angular limestone gravel												
			•									
	=====		:									
			· .		: :							
		2.40			: -							
End of Borehole at 2.40 m			!		:							
			e de la companya de l									
	; ;											
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Remarks							Logged	by Checked by				
							Scale 1:25	Sheet 1 of 1				
lotes: (atemals are described in accordance with BS 5930:1999. Hybrighs and reduced levels are in metres.Thicknessess given in brackets in dec	arb column						Figur	e .				

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD						Trial Pit Number			
TE: Bicester	EQUIPME	NT AND ME	THODS:		CONTRACTOR OF THE STATE OF THE		TF	P68	,	
LIENT: A.D Woodly	GROUND 0.000	LEVEL	 E: 0	COORDINA .00	TES N: 0.00	C	DATE	16/08/	2001	
	KEY	DEPTH	LEVEL		SAMPLE				ATIONS/	
TRATA DESCRIPTION		(Thick) 0.00	(mAOD)	Depth	Туре	No	Test	BACK	.FILL	
TOPSOIL		0.30		•						
MADE GROUND stiff grey slightly silty clay		0.00								
								İ		
				:						
						-				
		1.50 1.60		1,50	D					
MADE GROUND coarse gravel of very dark grey clinker like material in an orange brown sand matrix. Possibly limestone with calcite leached	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1.70								
	Ar E									
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, (highly to completely weathered limestone)		· ·				:				
End of Borehole at 2.40 m	***			,						
		i.		i İ	·		:			
1.5m depth				·						
QUEAT Arsent 231 mg/kg	> 20									
	ēĶ. ≥ .						!			
Copper 50 v	OK :									
CLEA MONEY 162 11 > 5	50								magaa waxaa waxaa ka	
Zine 201 "							1			
Suiphale 14027 "	er i de la companya d			*			1			
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Pomorko					مشدد تبيره		Logge	d by	Checked	
Remarks							Scale 1.25		Sheet 1	
			٠				Figu			

SITE: Bicester CLIENT: A.D Woo									:		
A.D Woo	Bicester				EQUIPMENT AND METHODS:						
	odly	,		GROUND L 0.000	EVEL		COORDIN 0.00	RDINATES N: 0.00			16/08/2001
STRATA DESC				KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLE Type	S/TES	TS Test	INSTALLATIONS/
TOPSOIL	<u> </u>				0.00						· · · · · · · · · · · · · · · · · · ·
Vallow brown ve	ery sandy clayey o	course angular			0.34		•				
GRAVEL and CO 10mm) of limest weathered limes	one, (highly to continue)	50mm x 150mm mpletely	X	0 0 0 0	0.60						
End	d of Borehole at 2	2.40 m									
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Remarks										Scale 1.25 Figu	Sheet 1 C

PELL FRISCHMANN CONSULTANTS LTD		TRIAL	PIT RE	CORD			Trial Num	
SITE: Bicester	EQUIPME	NT AND ME	ETHODS:	an in the second section is a second	and the second second second		TI	270
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDIN	ATES N: 0.00)	DATE	16/08/2001
STRATA DESCRIPTION	KEY	DEPTH	LEVEL		SAMPL	ES/TES	TS	INSTALLATIONS
TOPSOIL		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
		0.30						
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, (highly to		0.50						
completely weathered limestone)		0.65		0.60	D			
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x		0.80						
10mm) of limestone, (highly to completely weathered limestone)	/ *************************************							
End of Borehole at 2.40 m								
				:				
5.6 m depth				i				
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CLEA Arzenie 24 mg/kg	720	-			* * * * * * * * * * * * * * * * * * *			
Chromium 22 "				:				
- Idialan 34 "	OK :							
Zinger 48 Wil	- 6K							
Sulphale 582 "	JOK !			•	1			
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							Logged b	y Checked by
Remarks							Logged b	- Checked by
							Scale 1:25	Sheet 1 of
Notes: Materials are described in accordance with BS 5930:1999. Metablins and reduced levels are in metres. Thicknessess given in brackets in dep							Figure	

PELL FRISCHMANN CONSULTANTS LTD	7	RIAL I	PIT RE	CORD			Trial Numb	
Bicester	EQUIPME	NT AND ME	ETHODS:				TI	⊃71
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 457216.00		214.00	DATE	21/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Think)	LEVEL (mAOD)		SAMPLE	S/TES	TS Test	INSTALLATIONS BACKFILL
TOPSOIL: Mid brown soft loose slightly clavey		(Thick) 0.00	(111400)	Depth	Туре	110	1631	BAOM IEE
TOPSOIL with rootlets and organics (5%)		0.30		0.30	D			
Yellow orange and grey mottled moderately soft damp sandy CLAY with fine angular limestone gravel, becoming more clayey with depth				:				
graver, becoming more clayey with deput				:				
		0.90 0.91		0.90	W			
Yellow, grey and white hard medium to coarse grained broken rubbly weathered LIMESTONE in a brown and yellow damp sandy clayey matrix		0.91						
brown and yellow damp sandy clayey matrix (CORNBRASH) End of Borehole at 0.91 m	:							
City of Borefiole at 0.51 m	water		:					
0.3m dopth	0.9 m							
Acsenic 2009/19 OK								
Chromium 40 v 18								
Lead I I was got a								
Copper 17 1 10%			\$ *		*. •		1	
Nickel 37 in ok								
Zmc 83 " 0K Sulphate 1665 " 0K	₽ .	. A A						
Sulphate 1665 " OK	43 m) (X						
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Remarks						07407	Logged	
Al 0.90m a 1L water sample was taken after approx. 5 mins. Trial pit terminated	at 0.91m in Cornl	orash, as no fu	riner progress o	could be made. S	samples; T	₽71 0.5kg	1:25 Figur	0.100

Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number CONSULTANTS LTD TP72 EQUIPMENT AND METHODS SITE: Bicester DATE COORDINATES GROUND LEVEL CLIENT: 07/08/2001 E: 457400.00N: 222346.00 0.000 A.D Woodly SAMPLES/TESTS LEVEL INSTALLATIONS/ KEY DEPTH STRATA DESCRIPTION BACKFILL (mAOD) (Thick) Depth Type 0.00 TOPSOIL 0.15 0.20 D Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed 0.30 В from the pit walls as dense (highly to completely 0.45 weathered limestone) Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) 0.60 В 0.70 0.75 Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE End of Borehole at 0.75 m O.bm depth Zinc 28 mg/kg OK Sulphate 783 " Checked by Logged by Remarks Scale No groundwater encountered, pit stable throughout Bulk=0.3m, Bulk=0.6m, S'dist 0,6m Sheet 1 of 1:25 Figure Materials are described in accordance with BS 5930;1999.
Althoughs and reduced levels are in metres. Thicknessess given in brackets in depth column

EBIECHMANN	PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	PIT RE	CORD			Trial Numl				
SITE: Bicester		EQUIPMEN	IT AND ME	THODS:				TP73				
CLIENT: A.D Woo	odly	GROUND L 0.000	EVEL		COORDINA 157400.00		056.00	DATE	07/08/2001			
STRATA DES	CRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPLE Type	ES/TES	TS Test	INSTALLATIONS/ BACKFILL			
TOPSOIL			0.00	* .	0.20							
Red brown very much angular a limestone, asse (highly to comp	r clayey fine to medium SAND with and subangular gravel of light grey essed from pit walls as dense letely weathered limestone)		0.30		0.30 0.40	D B						
	wn very sandy CLAY with much not coarse gravel of limestone		0.90	:	0.80	В						
to strong LIMES	t grey very thinly bedded ighly weathered moderately strong STONE nd of Borehole at 1.00 m			· :		-						
									4.			
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			en en en en en en en en en en en en en e		: 							
Remarks No groundwater encou	untered, trial pil stable throughout					· · · · · · · · · · · · · · · · · · ·		Logged Scale 1:25	Checked by Sheet 1 of 1			
Notes: Materials are described in the photos and reduced to	in accordance with 85 5930:1999, evels are in metres.Thicknessess given in brackets in	depth column.						Figure	1			

PELL FRISCHMANN CONSULTANTS LTD	T		Trial Pit Number					
SITE: Bicester	EQUIPMEN		TP73A					
CLIENT: A.D Woodly	GROUND (EVEL		COORDINA).00	TES N: 0.00	DA	TE 1	7/08/2001
STRATA DESCRIPTION	KEY	DEPTH	LEVEL			ES/TESTS No Test		INSTALLATIONS/
TOPSOIL		(Thick) 0.00	(mAOD) ;	Depth	Туре	No Te	est	BACKFILL
TOPSOIL		0.30						
Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone		0.00						
							-	
							· .	
				1.00	D			
		1.60						
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE End of Borehole at 1.70 m		1.70		i i				
End of Borehole at 1.70 m				1				
1-0m depth Arsenic 15mg/leg OK								
Chromium 40 4 . Of								
Capper 16 4 AA	<u>2</u> .							
Nichel 36 - OR				1 -				
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Sulphore 221 4 OK		: :						
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Remarks	,					L	ogged	by Checked t
						1	cale 25 igure	Sheet 1 o

1 Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number **CONSULTANTS LTD** TP74 EQUIPMENT AND METHODS: SITE Bicester DATE COORDINATES GROUND LEVEL CLIENT: 07/08/2001 E: 457400.00N: 221900.00 0.000 A.D Woodly SAMPLES/TESTS LEVEL INSTALLATIONS/ KEY DEPTH STRATA DESCRIPTION BACKFILL (Thick) (mAOD) Depth 0.00 TOPSOIL 0.20 0.30 В Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) 0.50 Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone В 0.70 0.80 Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE 1.00 End of Borehole at 1.00 m ۵. Checked by Logged by Remarks Scale No groundwater encountered, trial pit stable throughout Sheet 1 of 1 1:25

noties. Malerials are described in accordance with BS 5930:1999. Malerials and reduced levels are in metres. Thicknessess given in brackets in depth column.

Figure

PELL FRISCHMANN CONSULTANTS LTD	T	RIAL F	IT REC	ORD		Trial Pit Number					
CHMANN	EQUIPMEN	T AND ME	THODS:				TI	P75			
Bicester	GROUND L 0.000	EVEL	E: 45	COORDINATES DAT 457400.00N: 221750.00		DATE 07/08/		:001			
A.D Woodly			LEVEL		SAMPLE			INSTALLA	TIONS/		
RATA DESCRIPTION	KEY	DEPTH (Thick)	(mAOD)	Depth	Туре	No	Test	BACKF	ILL		
OPSOIL		0.00									
		0.30		0.30	D		,		•		
orange brown very clayey fine to medium SAND ith much angular and subangular gravel of light rey limestone, assessed from pit walls as dense nighly to completely weathered limestone)		0.40	:								
ellow brown very snady clayey course angular SRAVEL and COBBLES (up to 150mm x 150mm x 0mm) of limestone, assessed from pit walls as ense (highly to completely weathered limestone) End of Borehole at 0.50 m											
O.3m dopth											
CLEA Aisenic 104 mg/kg	>>=				1						
Chronium 39 "	OE.			: ' !							
Copper 14 4	e Maria				1 1 1 1						
Michell 144	OK.			1 " 1							
Zina 64 V	(x) = \$ 0.00 5.00				:						
Sulphate 11da "	(18)y										
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				in the second of			110	ogged by	Checke		
Remarks No groundwater encountered, trial pit stable throughout, unable to progr	ess below 0.5m due t	o cobbles and	boulders of lime	stone in pit ba	se. S'disturt	oed samp	į		Sheet		
No groundwater encountered, that pri store							F	igure			

PELL FRISCHMANN	TRIAL P	T RECOF	RD	Trial Pit Number				
CONSULTANTS LID				TF	76			
HELIMANN	EQUIPMENT AND MET	HODS						
E: Bicester	GROUND LEVEL	C00 E: 0.00	RDINATES N: 0.00	DATE	15/08/2001			
ENT: A.D Woodly	0.000		SAMPLESA	ESTS	INSTALLATIONS	S/		
A CONTRACT OF THE PARTY OF THE	KEY DEPTH (Thick)	LEVEL (mAOD)	Depth Type N	lo Test	BACKFILL	-		
TRATA DESCRIPTION	0.00					1		
ropsoil.	0.20							
MADE GROUND stiff yellow brown clay becoming mottled grey with depth with occasional grey and red brown pockets of sand. Water inflow at 2.5m depth			0.50 D					
						1		
		.0	2.50 B 2.50 W					
	2.5	,	2.50					
End of Borehole at 2.50 m					-			
	water 9.5m	4						
O.Smdeph	9.5m							
Si lea	X							
112101 21 11 OK		and the second s						
7.20 59.11 00.		/ 0						
Chromium 33 mg) (1) (Vel 31 m o) c Zine 59 m o) c Sulphate 498 m o) c	79 in:) X						
	CHONSE DIE	512						
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	*	14. 	· · · · · · · · · · · · · · · · · · ·		Logged by	Che		
38					Scale	She		
Remarks					1:25 Figure			
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PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD Trial Pit Number							
BIRCHMANN	COLUDAT	ENT AND ME	THODS		gan an an and and a		TI	P76A
ITE: Bicester	EGOIPME	EINT WIND INC						. 0/ (
LIENT	GROUND 0.000	LEVEL	E: 0	OORDIN	N: 0.00		DATE	16/08/2001
A.D Woodly	KEY	DEPTH	LEVEL		SAMPLE	S/TES	TS	INSTALLATIONS
STRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
TOPSOIL		0.30						
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		0.40						
End of Borehole at 2.40 m							- 25	
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Remarks							Sc	ale
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PELL FRISCHMANN TRIAL PIT RECORD CONSULTANTS LTD							Trial Pit Number				
Bicester	EQUIPMEN		TP76B								
NT:	GROUND L 0.000	EVEL	E: 0.	COORDINA	TES N: 0.00		DATE 17/08/2				
A.D Woodly		SEDTIL	LEVEL		SAMPLES/T		TS	INSTALLATIONS			
ATA DESCRIPTION	KEY :	DEPTH (Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL			
PSOIL		0.00-	19.44								
		0.30									
DE GROUND firm very sandy grey mottled own clay with pockets of sandy gravel											
own clay with pockets of sandy gravel											
							1	·			
				1							
			*	2.00) W						
		2.10 2.15		2.00	۷۷ (1					
ellow brown sandy clayey coarse angular RAVEL and COBBLES of limestone (highly to ompletely weathered limestone). Water inflow at 1m depth	<u>-</u> ./	1				1					
End of Borehole at 2.40 m											
101 08010	_/										
End of Borehole at 2.40 m	<u>-</u> /										
End of Borehole at 2.40 m Loater 2.0 m depth											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64	2 .										
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64	<u></u>										
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64	2 .										
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64	2.										
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64											
End of Borehole at 2.40 m water 2.0 m depth Sulphale 64	2						Log	gged by Check			
End of Borehole at 2.40 m Loater 2.0 m depth Chioride 20											
End of Borehole at 2.40 m Loater 2.0 m depth Chiodde 20		in lateral exte	int, bounded by h	ighly weather	ed limestone	e at 0.3m	depth to Rec				

PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD							Pit ber
SITE: Bicester								TP77
CLIENT: A.D Woodly	GROUND 0.000	LEVEL	E:	COORDIN 0.00	NATES N: 0.00		DATE	17/08/200
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL			ES/TES		INSTALLATION
TOPSOIL		0.00	(mAOD)	Depth	Туре	No	Test	BACKFILL
Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone		0.20		•				
						V		
					! ! !			
Yellow and light grey very thinly hedded		1.60 1.70					2	
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE	/ 	1.70						
End of Borehole at 2.40 m			:			ı		
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s: Itals are described in accordance with 8S 5930:1999.							igure	Griedt i Or i

PELL FRISCHMANN CONSULTANTS LTD	· · · · · ·	RIAL F	PIT RE(CORD		Νι	al Pit Imber			
еснмайй	EQUIPMEN	IT AND ME	THODS:				TP78			
Bicester IENT:	GROUND L 0.000	EVEL	E: 0	COORDINA	TES N: 0.00	DA	TE 17/0	8/2001		
A.D Woodly		050531	LEVEL		SAMPLES	S/TESTS	INSTA	ALLATIONS/		
FRATA DESCRIPTION	KEY	DEPTH (Thick)	(mAOD)		Туре			CKFILL		
OPSOIL		0.00		0.20	D					
		0.30								
Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone										
angular medium to course give i										
			1 .	i						
		1.45		1						
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE		1.65		1						
to strong LIMESTONE End of Borehole at 2.00 m	••						-			
			•							
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Remarks							Scale 1:25	Sheet 1 c		
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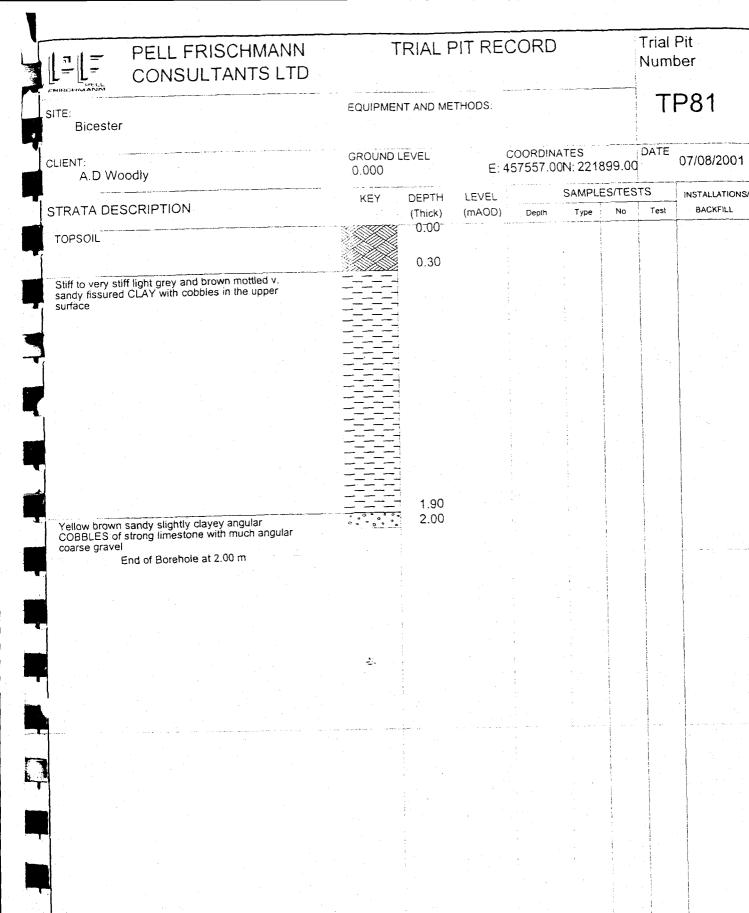
PELL FRISCHMANN CONSULTANTS LTD	Number								
CHMANIN	EQUIPMEN	T AND ME	rhods:	2 / 34			TI	⊃ 79	
Bicester	GROUND L	EVEL	C	OORDINATI 57543.00N	ES . 2222		DATE	07/08/2	001
NT: A.D Woodly	0.000		· · · · · · · · · ·		AMPLES	<u>-</u>	rs	INSTALLA	TIONS
RATA DESCRIPTION	KEY	DEPTH (Thick)	(mAOD)		Type		Test	BACKE	
opsoil and tree roots		0.00	, parameter a film						
		0.25							
range brown very clayey fine to medium SAND th much angular and subangular gravel of light ey limestone, assessed from pit walls as dense ighly to completely weathered limestone)				0.50 0.50	D B				
ey limestone, assessed from pit walls as device ighly to completely weathered limestone)		. 75		0.50					
Source angular		0.75	:	0.90	В				
ellow brown very sandy clayey course angular RAVEL and COBBLES (up to 150mm x 150mm x of limestone, assessed from pit walls as		4 40							
RAVEL and COBBLES (up to 150/11111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/111 X 150/111 X 150/111 X 150/111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/1111 X 150/	00,4000	1.10 1.20							
ow brown sandy slightly clayey angular BBLES of strong limestone with much angular parse gravel									
End of Borehole at 2.00 m									
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0.5- depth				2.00	D				
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Acsenie 19 mg/kg OK								-	
Character 35 a OK		1							
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Sulphare 1017 7 04	<u>.</u>			:			-		
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Remarks	and the second s				عد بالدنابران	d=0.5m	į.	Scale	-
Remarks Very slight water seepage at base of hole, trial pit stable throughout, una	able to progress belo	ow 1.2m due lo	cobbles, Bulk=	0.5m. Bulk≈0.9⊓	1 5 disturbe	U-U, JIII	1	:25	Sheet 1
								Figure	

7 =	PELL FRISCHMANN CONSULTANTS LTD	T I	TRIAL PIT RECORD						Trial Pit Number		
BOHMANN		EQUIPMENT AND METHODS:						TP79A			
Bicester											
ENT: A.D Woodly		GROUND LEVEL 0.000		COORDINATES E: 457529.00N: 222280.0			280.08	O 07/08/2001			
and the second second second second		KEY	DEPTH	LEVEL		SAMPLE		Ţ	INSTALL	1	
RATA DES	CRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACH	TILL -	
OPSOIL			0.20	!							
	ND Brown clayey fine to medium ibangular gravel of limestone coarse gravel or cobbles)		0.60		0.40 0.40	D B					
	own very sandy CLAY with much m to coarse gravel of limestone		0.90 0.95							·	
ight grey ven weathered mo	y thinly bedded moderately to highly derately strong to strong LIMESTONE and of Borehole at 0.95 m		÷.					Name of the latest and the latest an		,	
					:						
	0.4m depth								-		
	Arsenie 15 mg/kg										
	Chambon 10 "	and the second s									
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·	The second secon	e ere i de la la companya de la companya de la companya de la companya de la companya de la companya de la comp						- 1	gged by	Checked	
Remarks	er seepage al base of hole, trial pit unstable at 0.2-0.6n	n, Bulk=0.4m, Bulk=0.8r	n, S'disturbed	=0.4m					cale 25	Sheet 1	
very slight wate	a seepage of the control of the cont							F	igure	4	

Trial Pit

Trial Pit TRIAL PIT RECORD PELL FRISCHMANN Number CONSULTANTS LTD TP79B EQUIPMENT AND METHODS: Bicester DATE COORDINATES GROUND LEVEL 16/08/2001 CLIENT: N: 0.00 E: 0.00 0.000 A.D Woodly SAMPLES/TESTS INSTALLATIONS/ KEY DEPTH LEVEL **BACKFILL** STRATA DESCRIPTION (Thick) (mAOD) Depth 0.00 TOPSOIL 0.20 MADE GROUND Brown clayey fine to medium angular and subangular gravel of limestone (noticeably no coarse gravel or cobbles) some evidence of lime burning activity due to rare white 0.50 0.50 limestone gravel 1,10 1.20 Light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE End of Borehole at 1.30 m O.Sm depth Accord 15 mg/kg - Zinc 19 11 Sulphote 1112 " Checked by Logged by Remarks Scale 1:25 Sheet 1 of 1 Figure oles: aterials are described in accordance with BS 5930:1999. The BB and reduced levels are in metres. Thicknessess given in brackets in depth column

TRIAL PIT RECORD Trial Pit PELL FRISCHMANN Number CONSULTANTS LTD **TP80** EQUIPMENT AND METHODS: Bicester COORDINATES DATE GROUND LEVEL 07/08/2001 CLIENT: E: 457546.00N: 222200.00 0.000 A.D Woodly SAMPLES/TESTS INSTALLATIONS DEPTH LEVEL KEY BACKFILL STRATA DESCRIPTION (Thick) (mAOD) Test Depth 0.00 TOPSOIL 0.30 Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone) 0.70 Stiff yellow brown very sandy CLAY with much angular medium to coarse gravel of limestone 0.85 0.85 Brown fine to medium SAND with rare limestone Yellow brown sandy slightly clayey angular COBBLES of strong limestone with much angular coarse gravel End of Borehole at 1.20 m 0.85 mi dopth Arsenic Dong/kg Chromium 26 " Nichel 34 Z120 50 Suppliate 315 Checked by Logged by Remarks Scale Sheet 1 of 1 1:25 No groundwater encountered, trial pit unstable at 0-1.1m Figure tenals are described in accordance with BS 5930:1999 18 Ohs and reduced levels are in metres.Thicknessess given in brackets in dep



Checked by

Sheet 1 of

No groundwater encountered, that pit stable throughout, feature noted in southern pit wall as a 0.6m deep slot into layer 2 filled with top soil - possible start of a land drain queller.

Figure

Malenals are described in accordance with BS 5930:1999.

PH-18 This and reduced levels are in metres. Thicknessess given in brackets in depth column

Remarks



PELL FRISCHMANN **CONSULTANTS LTD**

TRIAL PIT RECORD

Trial Pit Number

Scale

1,25

Figure

Sheet 1 of 1

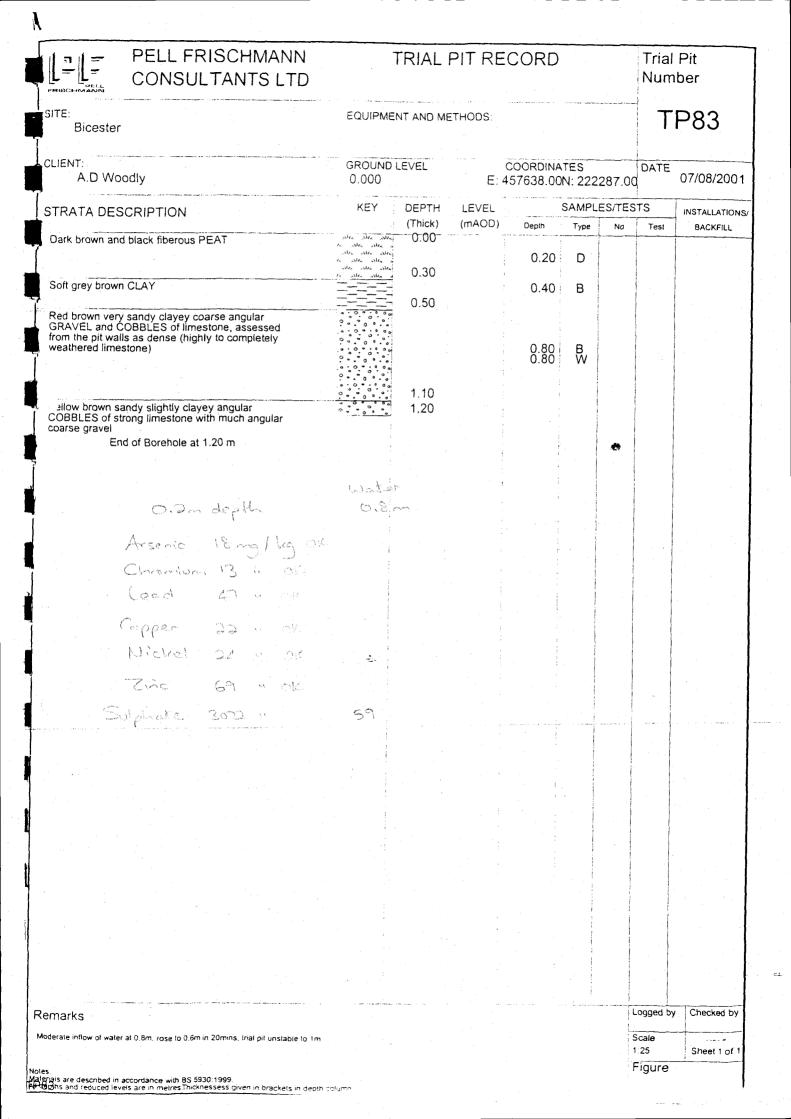
No groundwater encountered, trial pit stable throughout

Notes: Matenals are described in accordance with 8S 5930:1999. APP 02hs and reduced levels are in metres.Thicknessess given in brackets in depth column

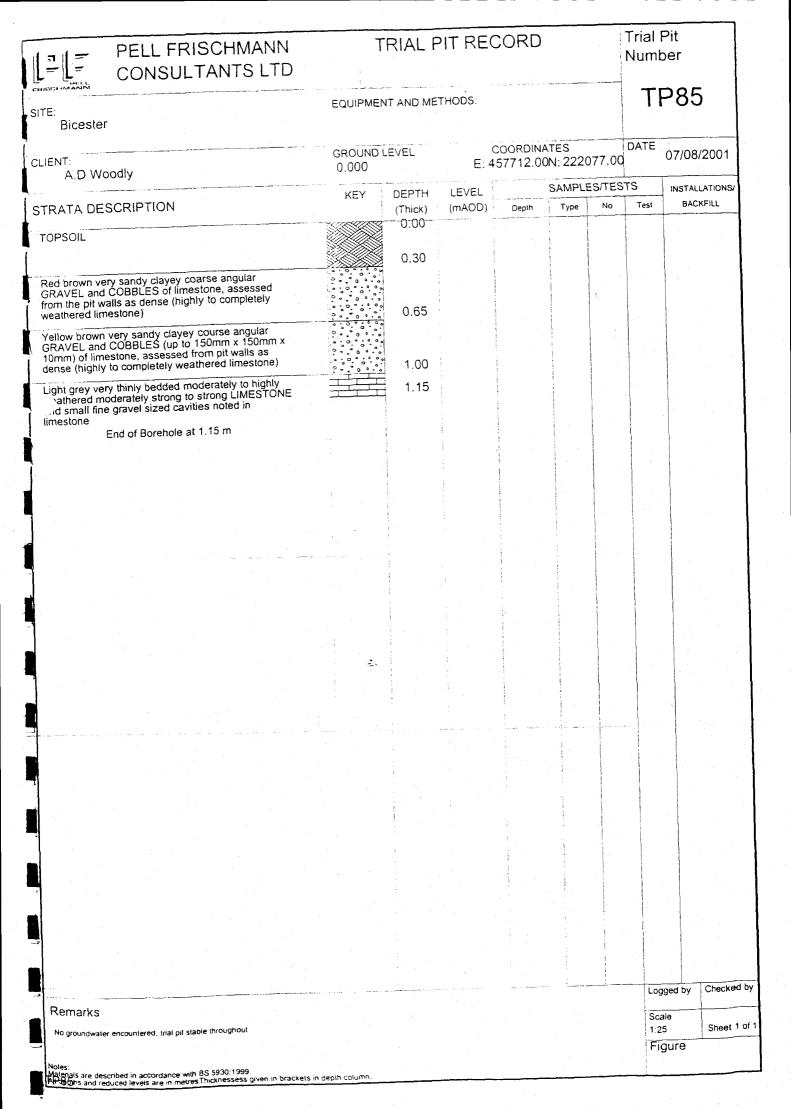
EQUIPMENT AND METHODS:

TP82

Bicester								. 02
CLIENT:	GROUND 0.000	LEVEL		00RDINA 57569.00			DATE	07/08/2001
	KEY	DEPTH	LEVEL		SAMPLE	ES/TES	rs	INSTALLATIONS/
STRATA DESCRIPTION		(Thick)	(mAOD)	Depth	Туре	No	Test	BACKFILL
TOPSOIL		0.00						
		0.30		0.30	В			
Orange brown very clayey fine to medium SAND	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			0.40	D			
Orange brown very clayey fine to medium SAND with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.50		0.60	В			
Yellow brown very sandy clayey course angular	0 0 0 0 0	0.70						
Yellow brown very sandy clayey course angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.80						· ·
Yellow and light grey very thinly bedded	_/							
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong strong LIMESTONE				-		·		
End of Borehole at 0.80 m								
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Remarks								



PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD						Trial Num	
SITE: Bicester	EQUIPME	NT AND M	ETHODS:				T	P84
CLIENT: A.D Woodly	GROUND 0.000	LEVEL		COORDINA 457700.00		200.00	DATE	07/08/2001
STRATA DESCRIPTION	KEY	DEPTH	LEVEL		SAMPL	,		INSTALLATIONS
TOPSOIL		(Thick) 0.00 0.15	(mAOD)	Depth	Туре	No	Test	BACKFILL
MADE GROUND soft to firm yellow brown and grey mottled clay with many carbonised plant sterns throughout		0.15					a mari otani a mari a mari a mari a mari a mari a mari a mari a mari a mari a mari a mari a mari a mari a mari	1
				1.00 1.00	D B			
Yellow brown sandy slightly clayey angular COBBLES of strong limestone with much angular		1.30		1.50	В		•	•
coarse gravel End of Borehole at 1.70 m		1.70					-	
1.0 m depth								The same of the sa
Lom depthi Chromium 25 mg/kg								
Nievel 20 11 10								
Symple 188 1	2.							
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						A. C. and C. C. C. C. C. C. C. C. C. C. C. C. C.		
							10 m	
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	e de la companya del companya de la companya del companya de la co	·				2	Logged b	y Checked by
Remarks Very minor seepage of groundwater at base of pit, that pit stable throughout							Scale	
							1:25 Figure	Sheet 1 of



PELL FRISCHMANN CONSULTANTS LTD		RIAL PI				Num		
CONSULTANTOLI	EQUIPMENT	AND MET	HODS:	a contractor to the second		T	P86	}
Bicester								
	GROUND LE	VEL	F· 4	COORDINAT 57661.00N	ES 1: 221976	DATE	07/08/20	01
NT: A.D Woodly	0.000	DEPTH	LEVEL		SAMPLES		INSTALLATI	
RATA DESCRIPTION	KEY	(Thick)	(mAOD)	1		No Test	BACKFIL	
PSOIL		0.00						
candy CLAY with much angular		0.23	,	0.50	В			
ff grey very sandy CLAY with much angular dium to coarse gravel of limestone				0.50	D			
				i .				1
	三国	1.00		1.00	В			
heavy year thinly hedded moderately to highly		1,00		i,				
t grey very thinly bedded moderately to highly hered moderately strong to strong LIMESTONE and small fine gravel sized cavities noted in		1.30		.				
nestone. End of Borehole at 1.30 m								1
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Remarks						S .	Scale 1:25	Sheet 1
No groundwater encountered, trial pit stable throughout							Figure	

BOHMANN	CONSULTANTS LTD						Numi	
E: Biceste	er	EQUIPMEN	IT AND ME	THODS:			TI	≥87
IENT: A.D W	/oodly	GROUND L	EVEL	E: 4	COORDINAT 157700.00N	ES 1: 221900.00	DATE	07/08/2001
		KEY	DEPTH	LEVEL	(AMPLES/TES	TS	INSTALLATIONS
RATA DE	ESCRIPTION		(Thick) = 0.00	(mAOD)	Depth 0.10	Type No	Test	BACKFILL
OPSOIL			0.00		0.10	U		
tiff grey ver	y sandy CLAY with much angular oarse gravel of limestone		0.40		· · · · · · · · · · · · · · · · · · ·			
led brown v	rery sandy clayey coarse angular d COBBLES of limestone, assessed	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.50 0.55					
rom the pit v	walls as dense (nightly to completely		0.00					
ight grey ve veathered m ind small fir	ery thinly bedded moderately to highly noderately strong to strong LIMESTONE ne gravel sized cavities noted in			1				
nestone	End of Borehole at 0.55 m							
	O. o. depile						-	
	Assent 26 mg/kg 75							
CUA	Arsenic 26 mg/kg /	de la policie de la composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della compositio						
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Omarlia							Logge	ed by Checked
Remarks No groundwate	er encounièred, that pit stable throughout						Scale	Sheet 1
3.34							Figu	

PELL FRISCHMANN CONSULTANTS LTD	PELL FRISCHMANN TRIAL MIT RECORD CONSULTANTS LTD							Trial Pit Number			
SITE: Bicester	EQUIPMEN	NT AND ME	THODS:				T	788			
CLIENT: A.D Woodly	GROUND (0.000	LEVEL		COORDINA 457627.00		764.00	DATE	07/08/2001			
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPL Type	ES/TES	TS Test	INSTALLATIONS/ BACKFILL			
TOPSOIL		0.00									
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.50									
weathered limestone) End of Borehole at 0.50 m								· .			
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	,						Logged	by Checked by			
Remarks							Scale				
No groundwater encountered, no progress below 0.5m due to cobbles and bould	ers of limestone						1.25	Sheet 1 of 1			
Notes: Materials are described in accordance with BS 5930:1999. But Mins and reduced levels are in metres Thicknessess given in brackets in depth							Figure	9			

Trial Pit PELL FRISCHMANN TRIAL PIT RECORD Number CONSULTANTS LTD TP89 EQUIPMENT AND METHODS: Bicester COORDINATES GROUND LEVEL CLIENT: E: 457846.00N; 222154.00 0.000 A.D Woodly SAMPLES/TESTS KEY DEPTH LEVEL STRATA DESCRIPTION (mAOD) (Thick) Depth 0.00 Dark brown and black fiberous peat مالای مالای ما مالای مالای مالای مالای مالای مالای مالای مالای مالای 0.20 D 0.30 Soft grey organic CLAY with rare subangular gravel 0.50 : 0.60 Orange brown very clayey fine to medium SAND with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone) 0.90 В 1.25 End of Borehole at 1.25 m J. Sm dopt Arsenia 20 ing lkg 200 Lead . 34 Zinc. 143 . " ... Sulptrate 3429 "

Remarks

No groundwater encountered, trial pit stable throughout, unable to progress below 1.25m due to limestone cobbies and boulders

Charkarl by Logged by Scale 1:25

07/08/2001

INSTALLATE NE

BACKFILL

Figure

Shoot 1 of 1

Notes. Materials are described in accordance with BS 5930;1999. MPTBBns and reduced levels are in metres.Thicknessess given in brackets in depth column

PELL FRISCHMANN CONSULTANTS LTD		TRIAL PIT RECORD						Trial Pit Number			
TE:	EQUIPMEN	NT AND ME	THODS:		a degree in a since programment date to		TF	289	Α		
Bicester LIENT:	GROUND I	_EVEL		COORDINA 157879.00	TES N: 2222	03.00	DATE	07/08/	2001		
A.D Woodly	0.000				SAMPLE		TS	INSTALL	ATIONIS		
TRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth :	Type	No No	Test	BACK	1		
TOPSOIL		0.00 0.20									
Soft brown slightly sandy CLAY											
		0.05		0.50 0.50	D B						
Orange brown very clayey fine to medium SAND with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.65		0.80 0.90	B W						
Yellow brown sandy slightly clayer alignal COBBLES of strong limestone with much angular		1.13									
oarse gravel End of Borehole at 1.13 m			·								
	•										
	otom.			•							
O.Sm depth		1					-				
Chrombon 51 mg/kg "											
Copper 30 4 W											
Mercal 28 " OR								-			
200 u 86 u oris		1									
Sulphate 2310 0 016	68 ≜.										
					1						
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							Logg	ed by	Checked b		
Remarks Minor water seepage at 0.9m, minor instability at 0.65m-1.13m, unable to s	progress below 1.13	due to limesto	one cobbles and	boulders			Scale 1:25	э	Sheet 1 of		
Minor water seepage at 0.9m, minor instability at 0.00m, 1.7m, bright to	-					•	Fig	1			

PELL FRISCHMANN CONSULTANTS LTD		TRIAL	PIT RE	CORD			Trial Num	
SITE: Bicester	EQUIPME	NT AND ME	ETHODS:				T	P89B
CLIENT: A.D Woodly	GROUND 0.000	LEVEL	 Е: _.	COORDINA 457772.00		257.00	DATE	07/08/2001
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)		SAMPL			INSTALLATIONS
TOPSOIL		0.30	(MAOD)	Depth	Type	No	Test	BACKFILL
Soft brown organic CLAY with much plant rootlets		0.55						
Orange brown very clayey fine to medium SAND with much angular and subangular gravel of light grey limestone, assessed from pit walls as dense (highly to completely weathered limestone)		0.90	·	0.70 0.70 0.90	D B W			
Yellow brown sandy slightly clayey angular OBBLES of strong limestone with much angular parse gravel	٠٠٠, ٠٠٠, ٠٠٠, ٠٠٠, ٠٠٠, ٠٠٠, ٠٠٠, ٠٠٠	1.00						
End of Borehole at 1.00 m		:						
		:						
	4							
				3 3 4 1				
	\$; ; ;				
	1							
Remarks					<u></u>		Logged by	Checked by
Water inflow at 0.9m, rose to 0.45m in 30 mins, trialpit stable throughout, unable to	progress below 1	.um					Scale 1:25 Figure	Sheet 1 of 1

PELL FRISCHMANN CONSULTANTS LTD	Ţ	RIAL F	PIT RE	CORD			Trial Pit Number			
SITE: Bicester	EQUIPMEN	NT AND ME	THODS:			English Control of the Control of th	TF	290		
CLIENT: A.D Woodly	GROUND (LEVEL		COORDINA 157783.00			DATE	07/08/2001		
STRATA DESCRIPTION	KEY	DEPTH (Thick)	LEVEL (mAOD)	40 may 1 min	SAMPLE Type	S/TEST	'S Test	INSTALLATIONS/		
TOPSOIL		0.00								
Red brown very sandy clayey coarse angular GRAVEL and COBBLES of limestone, assessed from the pit walls as dense (highly to completely weathered limestone)		0.25		0.50	D					
Yellow and light grey very thinly bedded moderately to highly weathered moderately strong to strong LIMESTONE End of Borehole at 0.90 m		0.90								
0.5~ dept										
CLEA Arsonic 40 mg/leg > 20 Chromium 34 11 C	o Sk Sk									
							The second secon			
							Adding page of the first of the			
							l oggad	by Checked b		
Remarks No groundwater encountered, trial pit stable throughout, unable to progress to	below 0 9m						Scale 1:25 Figur	Sheet 1 of		

STRATA DESCRIPTION KEY DEPTH LEVEL SAMPLES/TESTS	PELL FRISCHMANN CONSULTANTS LTD		TRIAL I	PIT RI	ECOR)		Trial Num		
A D Woodly STRATA DESCRIPTION KEY DEPTH LEVEL SAMPLESTESTS InsTALLATION (Thick) (mACD) Depth Type No Test SACCHILL MACE GROUND grey brown ash and dinker fill with much glass boilies, some metal and occasional potent fragments. Glass showing signs of mething due to high temperatures in the past of mething due to high temperatures in the past of mething directions. Beautiful directions assessed from the Account of Machine Completely wathered limestone) End of Borehole at 1.70 m ACCOUNT OF THE CONTROL OF THE ACCOUNT OF THE		EQUIPME	NT AND ME	THODS		-		Т	T1	
TOPSOIL with occasional glass fragments (Thick) (mAOD), been Type to Teal Record		GROUND 0.000	LEVEL	E:	COORDIN 0.00		0	DATE	07/08/200	
TOPSOIL with occasional glass fragments MADE GROUND grey brown ash and clinker fill with much glass bottles, some metal and occasional pottery fragments. Glass showing signs of maiting due to high temperatures in the past. Yellow brown very sandy dayey coarse angular GRANKEL and COBBLES (by to 150mm x 150mm x 1,70mm college). The company of the past	STRATA DESCRIPTION	KEY				SAMPI	ES/TES	TS	INSTALLATION	
MADE GROUND grey brown ash and clinker fill with much glass bottles, some metal and of the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of melting due to high temperatures in the past of the	TOPSOIL with occasional glass fragments			(MAOD)	Depth	Туре	No	Test	BACKFILL	
MADE GROUND grey brown ash and clinker fill with much glass bottles, some metal and much glass bottles, some metal and much glass bottles, some metal and much glass bottles, some metal and grey fragments. Glass showing signs of metiling due to high temperatures in the past. Yellow brown very sandy clayey coarse angular GRAVEL and COBRLES (up to 150mm x 150mm x 1.70 10mm) of limestone, assessed from pit walls as everse (night) to combetely weathered limestone) End of Borehole at 1.70 m An angular angular grey grey grey grey grey grey grey gre			:							
Yellow brown very sandy clayey coarse angular GRAVEL and COBBLES (up to 150mm x 150m x 10mm) of limestone, assessed from pit walls as elense (highly to completely weathered limestone) End of Borehole at 1.70 m All D.S. A. A. A. A. A. A. A. A. A. A. A. A. A.	MADE GROUND grey brown ash and clinker fill with much glass bottles, some metal and occasional pottery fragments. Glass showing signs of melting due to high temperatures in the past		0.60		0.50	D				
Yellow brown very sandy clayey coarse angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) End of Borehole at 1.70 m All J.S. Agult.				- :						
The state of the s	Yellow brown very sandy clayey coarse angular GRAVEL and COBBLES (up to 150mm x 150mm x 10mm) of limestone, assessed from pit walls as dense (highly to completely weathered limestone) End of Borehole at 1.70 m		1.70							
narks Logged by Checked by		<u> </u>	is lea	a 35	69 mg	/kg	2000 2000 V9			
Loggica by Checked by		. de€	a niel		788	3140	>50 Ng 2	oK.		
Logged by Checked by										
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Scale		n face. Topsoil unde	rlain by highly	realhored lie			1		Checked by	

ENISCHMANN	PELL FRISCI CONSULTAN			TRIAL	PIT RE	CORD			Trial Pit Number			
SITE: Bicester			EQUIPME	NT AND M	ETHODS:					Γ2		
CLIENT:	odly		GROUND 0.000	LEVEL		COORDINA 0.00	TES N: 0.00)	DATE	07/08/2001		
STRATA DES	SCRIPTION		KEY	DEPTH (Thick)	LEVEL (mAOD)	Depth	SAMPL Type	ES/TES	TS Test	INSTALLATIONS/		
TOPSOIL with	occasional glass fragmer	nts		0.00								
with much alse	ND grey brown ash and cl is bottles, some metal and tery fragments. Glass sho to high temperatures in th	4		0.30		0.50	D					
a vehicle tyre						1.00	D					
Yellow brown v	very sandy clayey coarse	angular		1.65 1.70								
10mm) of limes dense (highly to	reny sandy clayey coarse COBBLES (up to 150mm strone, assessed from pit voor completely weathered lind of Borehole at 1.70 m	x 150mm x valls as mestone)	To	o.5~		To los) (· · ·					
	CLEA CLEA	,	19	2~9/k	9 > 00 1 kg > 450	で と り) 90 > 488					
	: CLEA	Copper Nickel Zinc	1 1	0 . "	100	12 **	>50 >120					
		Sulphore.	(c)			4060						
	And the second s	Chromite		56		58		DK.		**************************************		
			:						. :			
					·							
									Lace	l Ob shad b		
Remarks Pit extended to 8m in	length trending north-south encour	ntered edge of quarry in s	outhern face. To	psoil underlain	by highly weathe	red limestone to	south of t		Logged b Scale 1:25	y Checked by Sheet 1 of 1		
Notes: Materials are described	in accordance with BS 5930:1999 evels are in metres.Thicknessess (niven in brackets in depth	columa						Figure	Sheet 7 OF T		

J

EHISCH MANN	PELL FRISCHMANN CONSULTANTS LTD	TRIAL PIT RECORD						Trial Pit Number			
SITE: Bicester		EQUIPMENT AND METHODS:					1	T3			
CLIENT: A.D Wo	odly	GROUND LEVEL 0.000		E: 0.	COORDINATES 00 N: 0.00		DATE	07/08/200			
STRATA DES	CRIPTION	KEY DEPTH (Thick)		LEVEL (mAOD)	100			INSTALLATIO			
	occasional glass fragments		0.00		Бериг	Type	No Test	BACKFILL			
MADE GROUN	D firm to stiff grey brown sandy clay		0.55								
with much alass	D grey brown ash and clinker fill stotles, some metal and ery fragments. Glass showing signs of high temperatures in the past, they carried printing "NAAFI" and e piece of metal possibly a clutch cle engine				1.00	D					
Soft brown silty (CLAY		2.00								
	of Borehole at 2.40 m		2.40		2.40	D					
		<u>ځ</u> ,	-To. 1	0.0							
			Arsenic	2.8 %	3/19	> 2 >					
<u>-</u>		CLEA C	Importure de la la la la la la la la la la la la la	5 56 1848	5. 16 S.	450					
			-ppm-	327	> 5	o					
			livie. O lydno Yer	16.15		1200					
			colleges.	(10°C							
arke							Longood by	Chacked			
narks							Scale 1:25 Figure	Checked by Sheet 1 of 1			



APPENDIX 2 LABORATORY TESTING RESULTS

				P.F.C. WAKEFIELD
			Comple	Post No. File Ref.
		Depth	Description of Sample	CIRCULATE
rial Pit	Sample Number	m		0004
Number	Milliper	· · · ·	::In: CY AV	01. OCT 2001
1 4	В	1.50	Orangish brown slightly gravelly very sandy very silty CLAY.	101111
1A 3	D	2.40	Brown slightly gravelly sandy silty CLAY.	OFWLOO RATules.
<u>3</u>	В	0.70	Pale brown sandy clayey silty GRAVEL.	marshall
	В	2.00	Brown gravelly slightly sandy silty CLAY.	
14A	D	2.00	Brown gravelly slightly sandy silty CLAY.	
16	В	2.60	Greyish brown sandy silty CLAY.	
17	В	0.50	Brown very sandy clayey very silty GRAVEL.	
21	В	0.25	Pale brown slightly gravelly slightly sandy very silty CLAY.	
22A	D	2.00	Brownish grey slightly gravelly slightly sandy silty CLAY.	
23	D	2.00	Pale brown slightly gravelly sandy silty CLAY.	
23	D	2.50	Brownish grey gravelly sandy silty CLAY.	
24	В	0.70	Brown sandy clayey silty GRAVEL.	
27	В	0.30	Pale brown sandy very silty CLAY.	
28	В	0.33	Brown very sandy slightly clayey silty GRAVEL. Pale brown very sandy slightly clayey silty GRAVEL.	
29	В	1.20	Pale brown very sandy signify CLAY	
30	В	1.80	Pale grey slightly sandy very silty CLAY.	
33	В	1.50	Pale brown gravelly SAND.	
35	В	0.50	Brown sandy clayey very silty GRAVEL. Brown very sandy slightly clayey silty GRAVEL.	
39	В	1.50	Brown very sandy sugarty chayey sary	



Compiled by	Date	Checked by	Date	Approved by	Date
SHORWSHE	28/9/01	K Cu	28/9/01	K Contract N	28/2/01 0 NL211004
		BICESTER.		Contract IV	0 141211004

Trial Pit	Sample Number	Depth	Description of Sample
Number	Number	m	
45	В	0.70	Pale brown very sandy clayey silty GRAVEL.
48 -	В	1.00	Brown slightly sandy clayey very silty GRAVEL.
49	В	0.57	Grey mottled brown slightly sandy very silty CLAY.
52	В	1.40	Pale brown very gravelly very sandy very silty CLAY.
53	D	0.30	Brown slightly gravelly sandy silty CLAY.
54	D	0.80	Brown sandy silty CLAY.
56	В	0.70	Brown sandy clayey silty GRAVEL.
59A	В	1.00	Brown slightly sandy clayey silty GRAVEL with many cobbles.
61	В	0.50	Brown sandy clayey silty GRAVEL.
62	В	0.83	Yeloowish brown mottled grey slightly sandy silty CLAY.
63A	В	0.50	Orangish brown slightly gravelly sandy silty CLAY.
63A	В	1.00	Pale brown slightly gravelly very sandy very silty CLAY.
64	В	0.60	Pale brown very sandy slightly clayey silty GRAVEL.
66	В	0.30	Brown slightly gravelly very sandy very silty CLAY.
66	В	0.80	Pale brown slightly sandy very silty CLAY.
67	В	0.50	Orangish brown slightly gravelly very sandy silty CLAY.
72	В	0.30	Brown sandy slightly clayey very silty GRAVEL.
72	В	0.60	Pale brown very sandy clayey silty GRAVEL.
73	В.	0.40	Brown sandy silty CLAY.

Sheet 2 of 2.



Compiled by	Date	Checked by	Date	Approved by	Date
Stolubet	2819101	Rlin	28/9/01	R Cu	28/9/01

BICESTER.

Contract No NL211004

Figure:

TG/7/1015/97

Aug 97

Issue No.2.0

Trial Pit	Sample	Depth	Description of Sample
Number	Number	m	
73	В	0.80	Pale brown slightly sandy silty CLAY.
74	В	0.30	Orangish brown very sandy clayey silty GRAVEL.
74	В	0.70	Pale brownish grey sandy silty CLAY.
76	В	2.50	Pale brown slightly gravelly very sandy silty CLAY.
79	В	0.50	Brown very sandy clayey silty GRAVEL.
79	В	0.90	Orangish brown sandy silty clayey GRAVEL.
79A	В	0.40	Brown sandy clayey silty GRAVEL.
79B	В	0.50	Pale brown very sandy slightly clayey silty GRAVEL.
82	В	0.30	Brown sandy clayey silty GRAVEL.
82	В	0.60	Brown very sandy slightly clayey silty GRAVEL.
83	В	0.40	Brown slightly sandy silty organic CLAY.
83	В	0.80	Brown sandy clayey silty GRAVEL with some cobbles.
84	В	1.00	Brown slightly gravelly very sandy very silty CLAY.
84	В	1.50	Pale brownish grey slightly sandy silty GRAVEL.
86	В	0.50	Brown slightly sandy silty CLAY.
86	В	1.00	Brown gravelly sandy silty CLAY.
89	В	0.50	Dark brown very peaty CLAY.
89	В	0.90	Brown very gravelly clayey silty SAND.
89A	В	0.50	Dark brown very peaty CLAY.



Compiled by	Date	Checked by	Date	Approved by	y]	Date
Stole Do LA	2819101	1 Cm	28/9/01	RE	2	28/9/01
		BICESTER.			Contract No	NL211004
	۸ .					

Trial Pit Number	Sample Number	Depth m			Description o	f Sample		. :		
89A	<u> </u>	В 0.80	Brown sandy cla							
	<u>B</u>	0.70	Brown slightly sa	andy silty CLAY.	 		:			4
89B					 					
		 			 <u> </u>					
		 			 					
		 								
		 			 					
	 	 							<u></u>	
		 								
	 							<u> </u>		
	 					<u> </u>				
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Sheet 2 of 2.



Compiled by	Date	Checked by	Date	Approved b	у	Date
Compiled by	2819101	RCI	28/9/01	RC	<u></u>	28/9/01
Solupas		BICESTER.			Contract N	o NL211004
					Figure:	

Borehole	Sample	Depth	Description of Sample
Number	Number	m	
1	В	1.00	Dark brown gravelly slightly sandy silty CLAY.
1	D	2.00	Dark brown very gravelly sandy silty CLAY.
1	U	2.00	Stiff pale brown gravelly slightly sandy silty CLAY.
1	D	2.50	Brown slightly sandy silty CLAY.
2	В	1.00	MADE GROUND dark grey very sandy clayey very silty gravel of ash.
2	D	1.00	MADE GROUND dark grey very sandy clayey very silty gravel of ash.
2	D	2.60	Brownish grey slightly sandy silty CLAY.
2	D	2.80	Grey mottled brown slightly gravelly slightly sandy silty CLAY.
2	U	3.00	Pale grey mottled brown gravelly slightly sandy silty CLAY.
2	D	3.50	Grey sandy silty CLAY.
3	D	2.00	Pale brown slightly gravelly sandy silty CLAY.
3	D	2.80	Brown slightly gravelly sandy silty CLAY.
3	U	3.00	Pale brown very gravelly sandy silty CLAY.
3	D	3.50	Pale brown gravelly sandy silty CLAY.
4	D	1.00	Pale brown slightly gravelly sandy silty CLAY.
4	D	2.00	Pale brown sandy silty CLAY.
4	U	3.00	Very stiff grey very silty CLAY.
4	D	4.00	Brown mottled grey sandy silty CLAY.
5	U	1.00	Brown sandy very clayey silty GRAVEL.



Compiled by	Date	Checked by	Date	Approved b	y	Date
Brolwood	28/9/01	Rai	28/9/01	RCu		28/9/01
BIOENCI		BICESTER.			Contract No	NL211004

Borehole Number	Sample Number	Depth m	Description of Sample
5	D	1.50	Pale brown mottled grey very sandy silty CLAY.
5	D	2.00	Very stiff pale brown mottled grey gravelly slightly sandy very silty CLAY.
5	D	2.90	Grey gravelly sandy silty CLAY.
6	D	1.00	Brown gravelly sandy silty CLAY.
6	D	1.70	Pale brown mottled grey gravelly slightly sandy silty CLAY.
6	U	2.00	Grey slightly gravelly slightly sandy silty CLAY.
10	U	1.00	Firm brown mottled grey slightly gravelly silty CLAY.
10	D	1.50	Brownish grey slightly gravelly silty CLAY.
10	D	2.00	Grey mottled brown slightly gravelly slightly sandy silty CLAY.
11	D	1.00	Pale brown very sandy silty CLAY.
		 	
		·	
		<u> </u>	

Sheet 2 of 2.



Compiled by	Date	Checked by	Date	Approved by	Date
Stoler	b/d 2819,	101 R Cin	28/9/01	Ran	28/9/0,

BICESTER.

Contract No NL211004

Figure:

G/7/1015/97 Aug.

Issue No.2.0

(B.S. 1377: PART 2: 1990)

Borehole Number	Sample Number	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Particle Density Mg/m ³ Clause 8.	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.	Plasticity Index % Clause 6.	Passing .425mm	Remarks Intermediate plasticity CI.
1	В	1.00	23				37	19		80	Intermediate plasticity CI.
1	D	2.00	21				42	21	21	100	High plasticity CH.
1	U	2.00	15		+		50	20	30	100	5
1	D	2.50	22								
2	В	1.00	29		1					 	
2	D	1.00	32	 				<u> </u>		00	High plasticity CH.
2	D	2.60	29	<u> </u>	11:		61	22	39	98	Intermediate plasticity CI.
2	D	2.80	30	<u> </u>			42	18	24	68	Intermediate plasticity CI.
2	U	3.00	34	 	_	1	41	17	24	100	Intermediate plasticity
2	D	3.50	. 16								Intermediate plasticity CI.
3	D	2.00	18				48	20	28	99	
3	D	2.80	24			_	30	15	15	87	Low plasticity CL.
3	U	3.00	16			_					
3	D	3.50	11								
4	D	1.00	16								La disitu CI
4	4	2.00	21				46	17	29	100	Intermediate plasticity CI.
4	U	3.00	21								n Laiste CI
4	D	4.00	10			_	36	18	18	48	Intermediate plasticity CI.

SYMBOLS: NP: Non Plastic

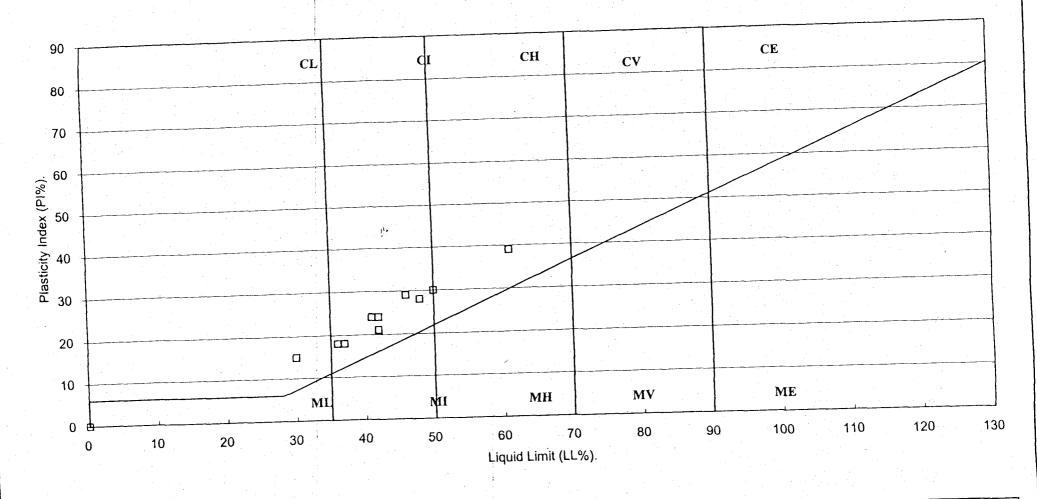
*: Liquid Limit and Plastic Limit Wet Sieved.

TH	YS!	KAL
-		

Compiled by	2619101	Checked by BICESTER.	Date 26/9/01	Approved by	Date 26/4/61 Contract No NL211004
		BICESTEK.			Figure: South Kirkby, Pontefract, WF9 3AP

NL2.XLS Issue No.3 TG/7/1000/97 Aug.97

(B.S.5930: 1999)





G 7.15.	Date	Checked by	Date	Approved l	ру	Date
Compiled by	2619101		26/9/01	RE		26/9/01
Solipas		BICESTER.			Contract No	NL211004
					Figure:	

TG/7/1000/97 Aug.97

NL2.XLS

(B.S. 1377: PART 2: 1990)

Borehole Number	Sample Number	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Particle Density Mg/m ³ Clause 8.	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.	Plasticity Index % Clause 6.	% Passing .425mm	Remarks
5	D	1.50	16				32	16	16	100	Low plasticity CL.
5	D	2.00	21							0=	Y A Birds placeticity CI
5	D	2.90	25			, · i · .	42	17	25	87	Intermediate plasticity CI.
6 .	D	1.00	21								YY: 1 Ladician CYV
6	D	1.70	27			:	52	20	32	89	High plasticity CH.
6	U	2.00	20	:			63	22	41	99	High plasticity CH.
. 10	U	1.00	31				74	22	52	100	Very high plasticity CV.
10	D	1.50	30		ŷ.		74	23	51	99	Very high plasticity CV.
10	D	2.00	36				67	23	44	97	High plasticity CH.
11	D	1.00	20						<u> </u>		
						ļ		<u> </u>	ļ	ļ	
							ļ		 	<u> </u>	
				:							
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SYMBOLS: NP: Non Plastic

*: Liquid Limit and Plastic Limit Wet Sieved.

Sheet 1 of 2.



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Solubor	2619101	R Can	26/9/41	1 Cm	26/9/01
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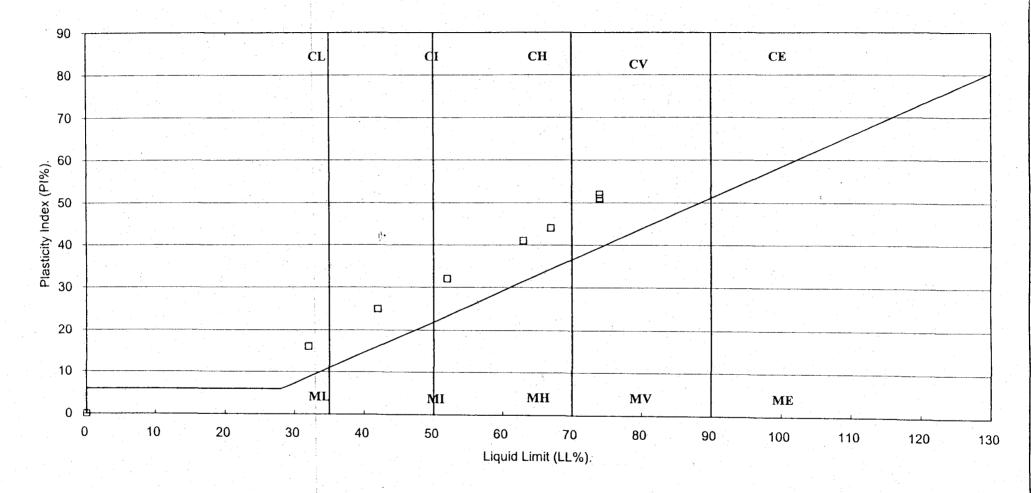
BICESTER.

Contract No NL211004

Figure:

NL2 XLS

(B.S.5930: 1999)





Compiled by	Date	Checked by	Date	Approved b	y	Date
Stoling the	2619101	1 Cm	26/9/0,	Ka		26/9/01
		BICESTER.			Contract No	NL211004
					Figure:	

TG/7/1000/97 Aug.97

NL2,XLS

(B.S. 1377: PART 2: 1990)

3 7 14A 14A 16 17 21 22A 23	D B B	2.40	Clause 3.2 32	Clause 7.2			%	%	%	.425mm	Remarks
7 14A 14A 16 17 21 22A	B B		32		Clause 7.2	Clause 8.	Clause 4.3/4.4	Clause 5.	Clause 6.		
14A 14A 16 17 21 22A	В	0.70					37	18	19	96	Intermediate plasticity CI.
14A 16 17 21 22A			9		<u> </u>						
16 17 21 22A		2.00	22				47	18	29	86	Intermediate plasticity CI.
17 21 22A	D	2.00	18				50	18	32	87	High plasticity CH.
21 22A	В	2.60	18				50	19	31	100	High plasticity CH.
22A	В	0.50	13								
	В	0.25	. 30								
23	D.	2.00	28	Ĺ.	j\ .		63	23	40	99	High plasticity CH.
	D	2.00	26				54	21	33		High plasticity CH.
23	D	2.50	24				43	21	22		Intermediate plasticity CI.
27	В	0.30	27				54	21	33		High plasticity CH.
29	В	1.20	- 8	:			43	21	22		Intermediate plasticity CI.
30	В	1.80	41								Intermediate prasticity CI.
39	В	1.50	8								
45	В	0.70	12								
48	В	1.00	22	r .							
49	В	0.57	34				65	23	42	100	
52	В	1.40	17					<u> </u>	- 44	100	High plasticity CH.
53	D	0.30	22		· - ·		47	20			

SYMBOLS: NP: Non Plastic

Sheet 1 of 2.



Compiled by	Date	Checked by	Date	Approved b	y	Date
 Mode 20th	259101	Ra	28/9/01	RE	1	28/2/4
		BICESTER.			Contract No	NL211004

Figure:

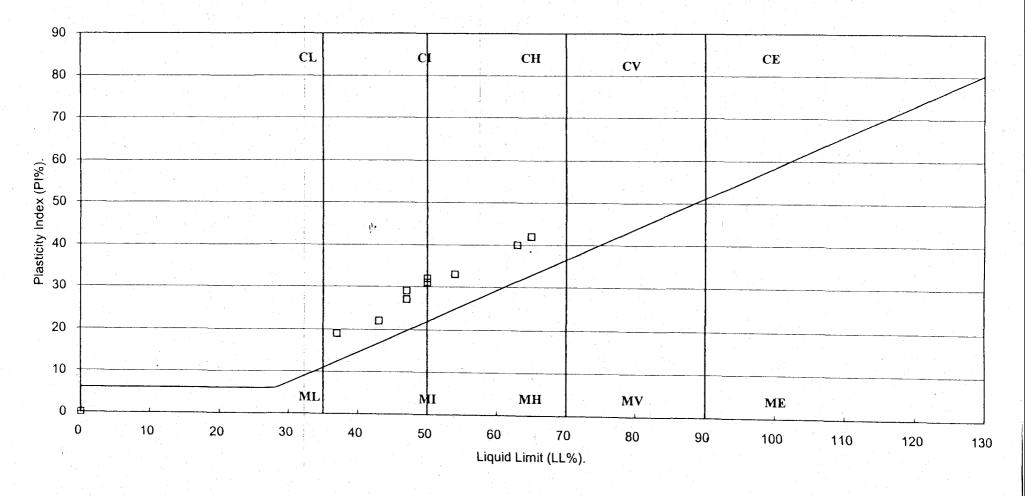
TG/7/1000/97

Issue No.3

NL2.XLS

^{*:} Liquid Limit and Plastic Limit Wet Sieved.

(B.S.5930: 1999)





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Solvort	28/9/01	Ren	28/9/01	Rei		28/9/01
	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co	BICESTER.			_	
					Figure:	

TG/7/1000/97 Aug.97

NL2.XLS

(B.S. 1377: PART 2: 1990)

Trial Pit Number	Sample Number	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³	Particle Density Mg/m³ Clause 8.	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.	Plasticity Index % Clause 6.	% Passing .425mm	Remarks Intermediate plasticity CI.
54	D	0.80	23								L'ata-plantinity CI
59A	В	1.00	15			-	35	16	19	26	Intermediate plasticity CI.
61	В	0.50	10			 	55	26	29	100	High plasticity CH.
62	В	0.83	32			1	 			ļ	
63A	В	1.00	11	-							
64	В	0.60	9		 		1				
66	В	0.30	16	ļ	+-+	+	61	20	41	100	High plasticity CH.
66	В	0.80	26	<u> </u>	 						
72	В	0.30	8	-	 		58	21	37	100	High plasticity CH.
73	В	0.80	19				78	22	56	100	Very high plasticity CV.
74	В	0.70	24		-		29	12	17	92	Low plasticity CL.
76	В	2.50	15		 		 				
79A	В	0.40	10								
79B	В	0.50	10								
82	В	0.60	7				89	33	56	100	Very high plasticity CV.
83	В	0.40	56					+			
83	В	0.80	17				49	17	32	80	Intermediate plasticity CI.
84	В	1.00	29				70	23	47	100	Very high plasticity CV.
86	В	0.50	24			l					Sheet 1 of 2

SYMBOLS: NP: Non Plastic

*: Liquid Limit and Plastic Limit Wet Sieved.

Sheet 1 of 2.



Issue No.3

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I	0 2 1 1 1 1 1 1 1	Date	Checked by	Date	Approved by	Date	
	Compiled by		10.	28/9/41	1 pl	28/9/01	
	Solubo	2819101	1/200	1	Contract No	o NL211004	

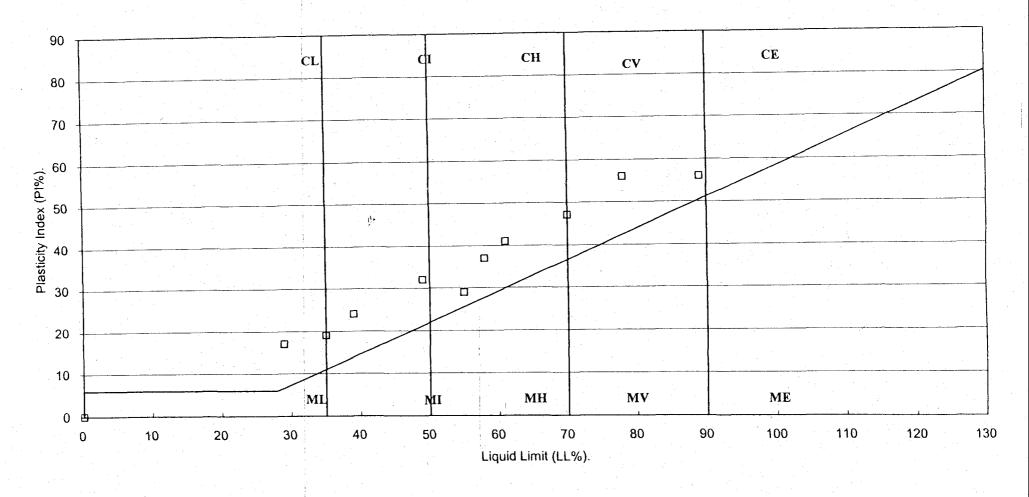
BICESTER.

NL2.XLS

Contract No NL211004

Figure:

(B.S.5930: 1999)





Compiled by	Date	Checked by	Date	Approved b	У	Date
Stowart	28/9/01	1 lan	28/9/01	R		28/9/01
		BICESTER.			Contract No	NL211004
	-				Figure:	

TG/7/1000/97 Aug.97

NL2.XLS

(B.S. 1377: PART 2: 1990)

Trial Pit Number	Sample Number	Depth m	Moisture Content %	Bulk Density Mg/m³	Dry Density Mg/m³	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit	Plasticity Index %	% Passing .425mm	Remarks
06		1.00	Clause 3.2	Clause 7.2	Clause 7.2	Clause 8.	Clause 4.3/4.4	Clause 5.	Clause 6.	60	High placticity CH
86	В	1.00	37 77				108	38	70	95	High plasticity CH. Extremely high plasticity CE.
89 89A	B	0.50 0.50	106				156	54	102	99	Extremely high plasticity CE.
89B	В	0.70	36				56	19	37	100	High plasticity CH.
89A	В	0.80	9								
89B	В	0.70	36				56	19	37	100	High plasticity CH.
					j);		<u> </u>				
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						4.				1	

SYMBOLS: NP: Non Plastic

*: Liquid Limit and Plastic Limit Wet Sieved.

Sheet 1 of 2.



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BICESTER.

Contract No NL211004

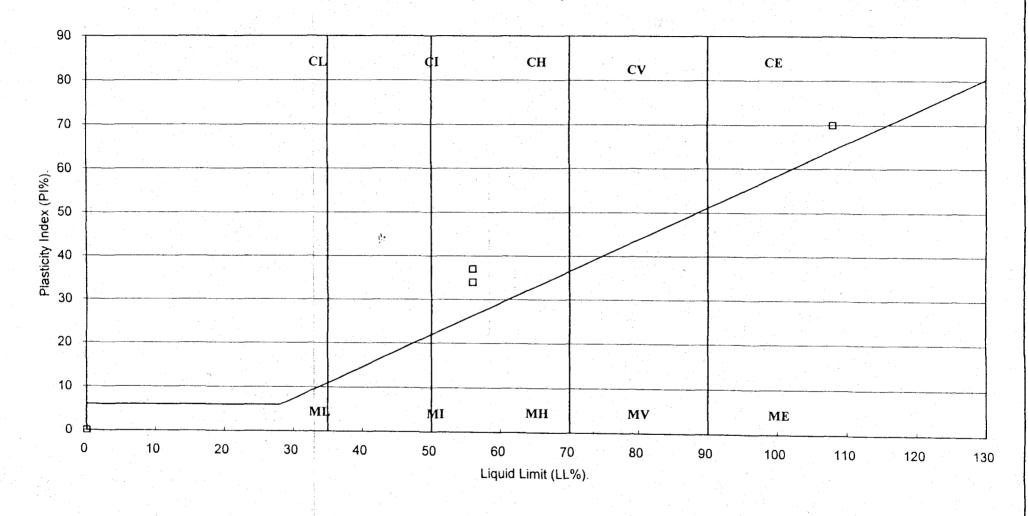
Figure:

TG/7/1000/97 Aug.97

Issue No.3

NL2.XLS

(B.S.5930: 1999)





Compiled by	Date	Checked by	Date	Approved b	у	Date
840 Caroot	2819101	R Can	28/9/01	R	Cin	28/9/01
		RICESTER			C-4-1N	NIX 241004

BICESTER.

Contract No NL211004

Figure:

TG/7/1000/97 Aug.97

NL2 XLS

PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990.

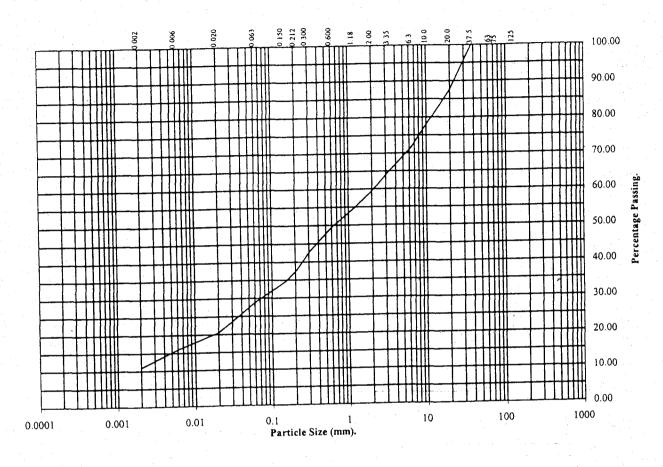
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Borehole/Sample Number:

2

Depth (m):

1.00



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	88
10	78
6.3	72
3.35	65
2	59
1.18	55
0.6	49
0.3	43
0.212	38
0.15	35
0.063	29

Particle	Percentage
Diameter	Passing
0.02	21
0.006	16
0.002	11

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 41 30 18 11

Remarks:
See summary of soil descriptions.

Checked B	y Date	Approved By	Date
1 lu	25/9/0	11 Rlen	25/9/0,



BICESTER

Contract No.: NL211004

PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990.

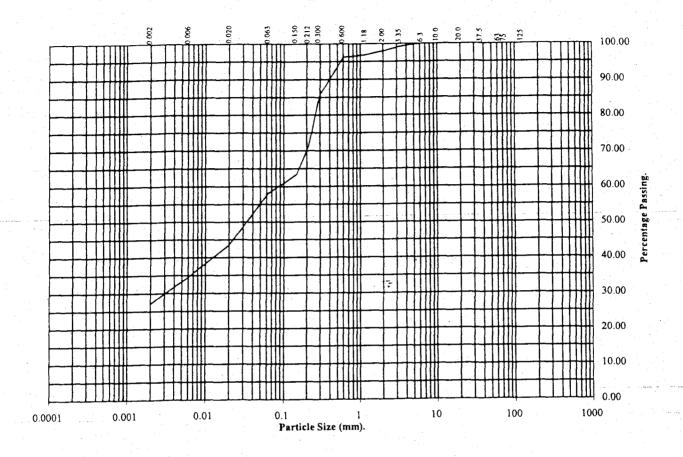
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

1A

Depth (m):

0.50



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	99
2	98
1.18	97
0.6	96
0.3	86
0.212	71
0.15	63
0.063	58

·	
Particle	Percentage
Diameter	Passing
0.02	43
0.006	35
0.002	27

	Soil	Total
	Fraction	Percentage
Ī		
۱	Cobbles	0
١	Gravel	2
l	Sand	40
	Silt	31
	Clay	27

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rlin	24/9/01	Rlu	24/9/01



BICESTER

Contract No.: NL211004

PARTICLE SIZE DISTRIBUTION TEST

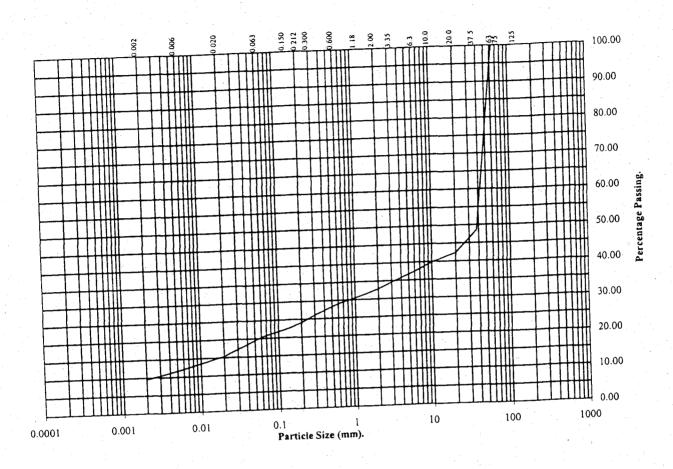
BS1377:Part 2:1990.

Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

Depth (m):

0.70



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	49
20	42
10	40
6.3	38
3.35	35
2	33
1.18	31
0.6	29
0.3	26
0.212	24
0.15	23
0.063	20

ſ	Particle	Percentage
	Diameter	Passing
	0.02	15
	0.006	12
	0.002	10

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 67 13 10	

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Klim	24/9/01	Rlen	24/9/01



BICESTER

Contract No.: NL211004

BS1377:Part 2:1990.

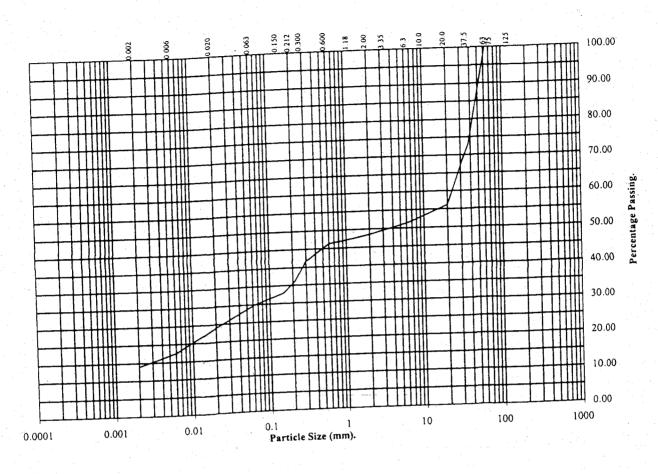
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

17

Depth (m):

0.50



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	73	
20	56	
10	53	
6.3	52	
3.35	50	
2	49	
1.18	47	
0.6	46	
0.3	42	
0.212	36	
0.15	33	
0.063	30	
1		

Particle Diameter	Percentage Passing
0.02	24
0.006	18
0.002	14

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 51 19 16 14	

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
1 Com	24/9/01	K Cin	24/9/01



BICESTER

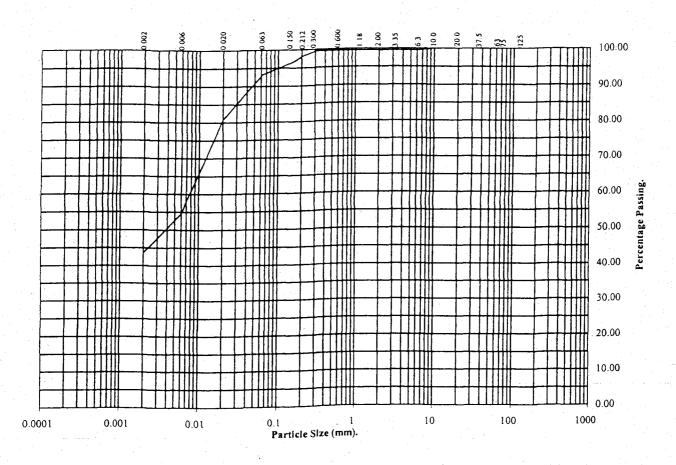
BS1377:Part 2:1990.

Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

Depth (m):

0.25



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	99
2	99
1.18	99
0.6	99
0.3	99
0.212	98
0.15	96
0.063	93

Particle	Percentage
Diameter	Passing
0.02	81
0.006	55
0.002	44

Fraction	Percentage
Flaction	
Cobbles Gravel Sand Silt Clay	0 1 6 49 44

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
R Com	24/9/01	Klu	24/9/01



BICESTER

BS1377:Part 2:1990.

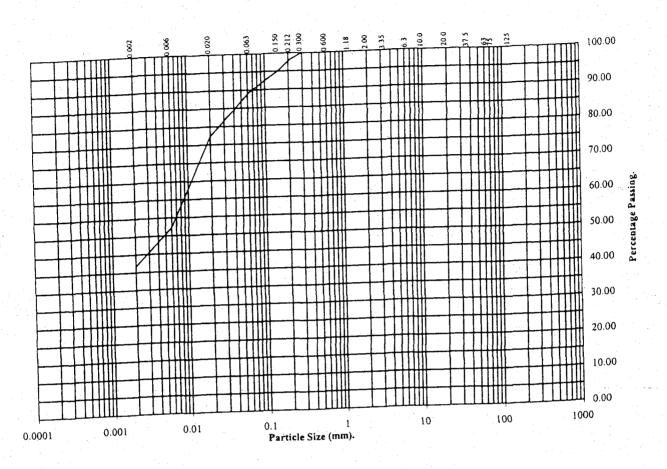
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

27

Depth (m):

0.30



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	100	
20	100	
10	100	
6.3	100	
3.35	100	
2	100	
1.18	100	
0.6	100	
0.3	100	
0.212	98	
0.15	95	
0.063	89	

Particle Diameter	Percentage Passing
0.02	77
0.006	52
0.002	42

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 0 11 47 42	

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
R.Cin	24/9/01	Rlin	449/01



BICESTER

BS1377:Part 2:1990.

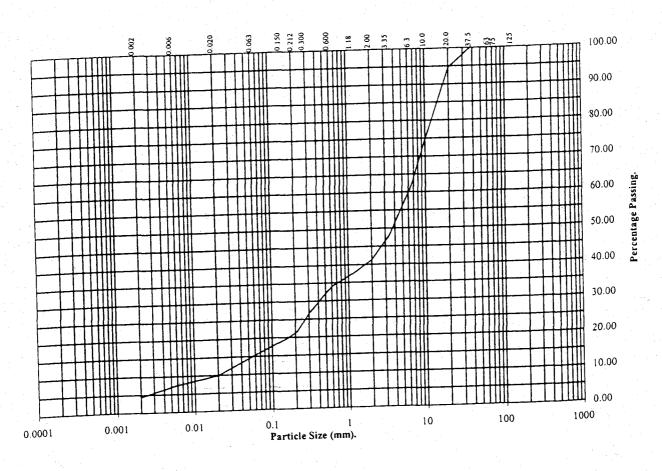
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

28

Depth (m):

0.33



BS Test	Percentage
Sieve	Passing
125	100
75	
63	100
37.5	100
20	95
10	75
6.3	61
3.35	48
2	41
1.18	38
0.6	34
0.3	27
0.212	22
0.15	19
0.063	16

Particle Diameter	Percentage Passing
0.02	10
0.006	8
0.002	4

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 59 25 12 4

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rlin	24/9/01	Ren	24/9/01



BICESTER

BS1377:Part 2:1990.

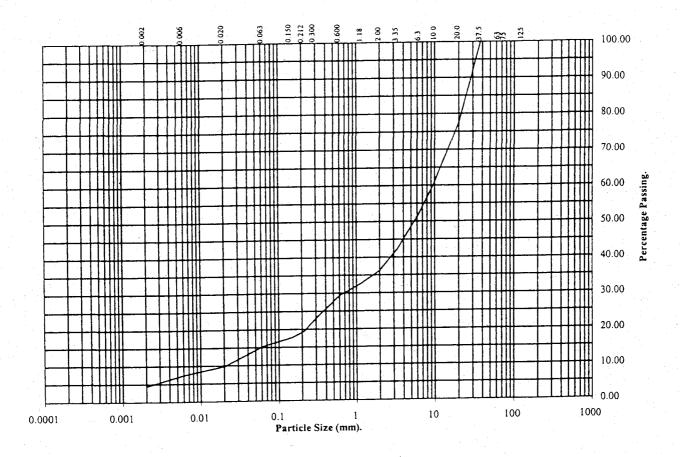
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

29

Depth (m):

1.20



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	78
10	61
6.3	52
3.35	42
2	36
1.18	33
0.6	29
0.3	23
0.212	19
0.15	18
0.063	15
•	

Particle	Percentage	
Diameter	Passing	
0.02	10	
0.006	7	
0.002	4	

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 64 21 11 4	

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Ren	24/9/01	R Cin	24/9/01



BICESTER

BS1377:Part 2:1990.

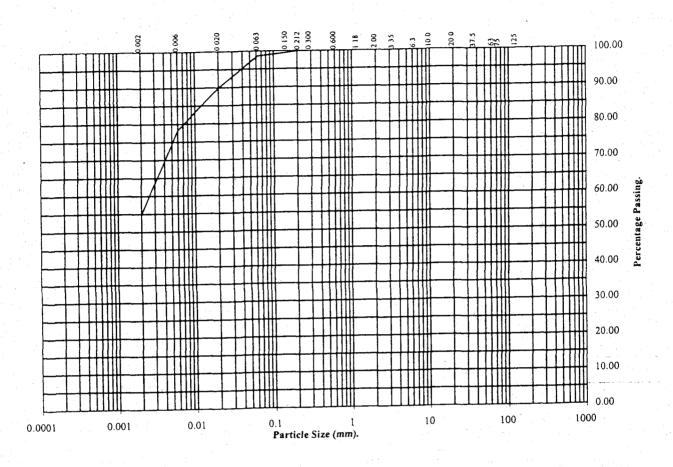
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

30

Depth (m):

1.80



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	100
0.3	100
0.212	100
0.15	99
0.063	99

Particle	Percentage
Diameter	Passing
 0.02	90
0.006	78
0.002	55

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 0 1 44 55	

R	ema	ark.	S

See summary of soil descriptions.

Checked By	Date	Approved By	Date
1 lin	24/9/01	Rlin	24/9/01



BICESTER

BS1377:Part 2:1990.

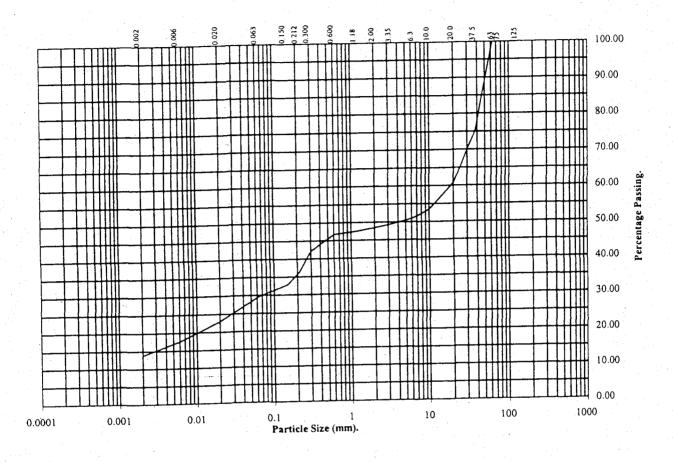
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

35

Depth (m):

0.50



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	75
20	61
10	53
6.3	51
3.35	49
2	48
1.18	48
0.6	47
0.3	42
0.212	36
0.15	33
0.063	30

Particle	Percentage
Diameter	Passing
 0.02	23
0.006	18
0.002	14

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 52 18 16

Rer	nar	·ks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
R Cu	24/9/01	Ren	24/9/01



BICESTER

BS1377:Part 2:1990.

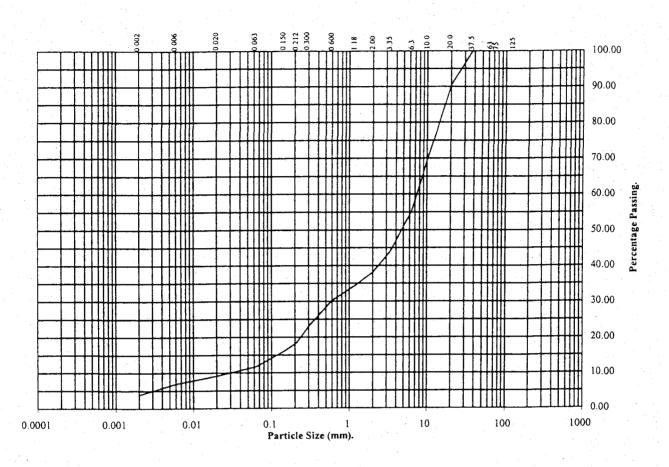
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

39

Depth (m):

1.50



BS Test	Percentage
Sieve	Passing
125	100
7.5	100
63	100
37.5	100
20	90
10	69
6.3	55
3.35	44
2	38
1.18	34
0.6	30
0.3	23
0.212	18
0.15	16
0.063	12
:	

Particle	Percentage
Diameter	Passing
0.02	9
0.006	7
0.002	4

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 62 26 8 4

Remarks:		
See summary of soil desc	riptio	ns.

Checked By	Date	Approved By	Date
Rlin	24/9/01	Ren	24/9/01



BICESTER

BS1377:Part 2:1990.

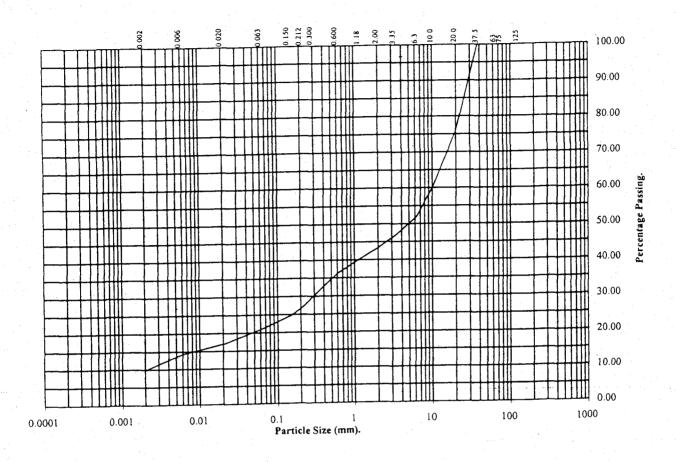
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

45

Depth (m):

0.70



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	76
10	60
6.3	52
3.35	47
2	43
1.18	40
0.6	36
0.3	30
0.212	2,7
0.15	25
0.063	21

Parficle	Percentage
Diameter	Passing
0.02	17
0.006	14
0.002	10

Soil	Total		
Fraction	Percentage		
Cobbles Gravel Sand Silt Clay	0 57 22 11 10		

	K	31	n	<u>a</u>	r	K	
Į	\overline{a}	_			_	_	

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rem	25/9/01	Rlin	25/9/41



BICESTER

BS1377:Part 2:1990.

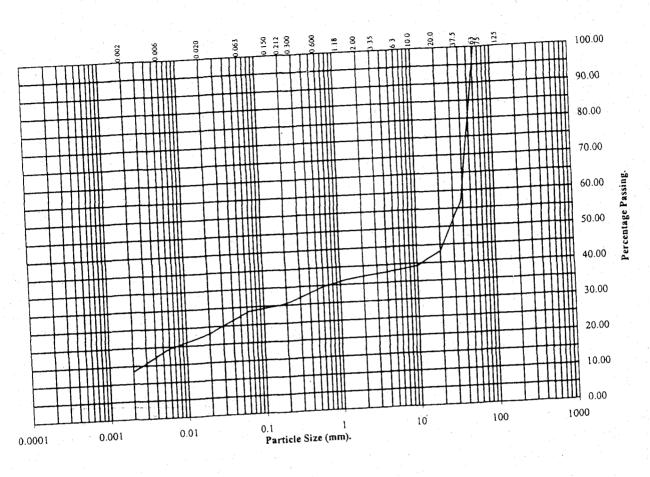
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit/Sample Number:

48

Depth (m):

1.00



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	57	
20	43	1
10	39	
6.3	39	
3.35	38	1
2	37	1
1.18	36	1
0.6	35	1
0.0	32	1
0.3	31	
	30	
0.15	29	
0.063		

Particle	Percentage
Diameter	Passing
0.02	23
0.006	19
0.002	13

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 63 8 16 13

Remarks:

See summary of soil descriptions.

			1
Checked By	Date	Approved By	Date
Zan	25/9/01	Klin	2579101



BICESTER

BS1377:Part 2:1990.

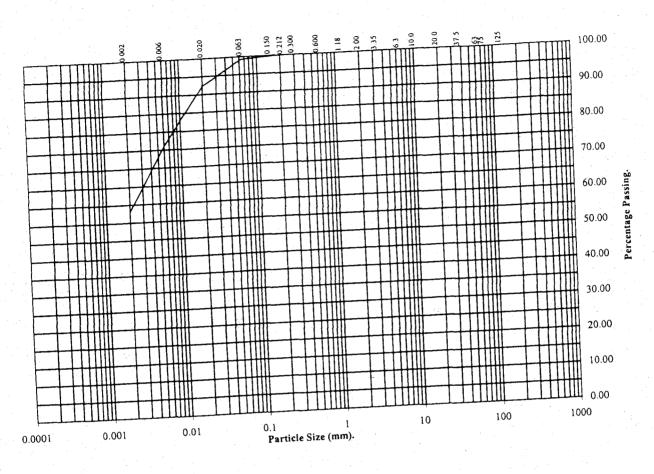
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

49

Depth (m):

0.57



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	100
0.3	100
0.212	100
0.15	100
0.063	99
L	

Particle	Percentage
Diameter	Passing
0.02	92
0.006	76
0.002	58

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 0 1 41 58

Remarks:

See summary of soil descriptions.

	1	Approved By	Date
Checked By	1224	Approved 25	1 dala
11/2	25/9/01	1 Rau	2317101



BICESTER

BS1377:Part 2:1990.

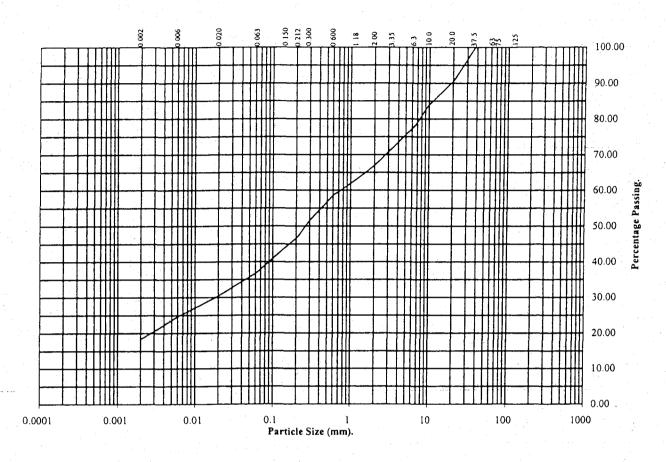
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

52

Depth (m):

1.40



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	100	
20	90	
10	84	
6.3	78	
3.35	72	
2	67	
1.18	63	
0.6	59	
0.3	52	
0.212	47	
0.15	44	
0.063	37	

Particle	Percentage
Diameter	Passing
0.02	30
0.006	25
0.002	18

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 33 30 19 18

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rlim	25/9/01	Ra	25/9/01



BICESTER

BS1377:Part 2:1990.

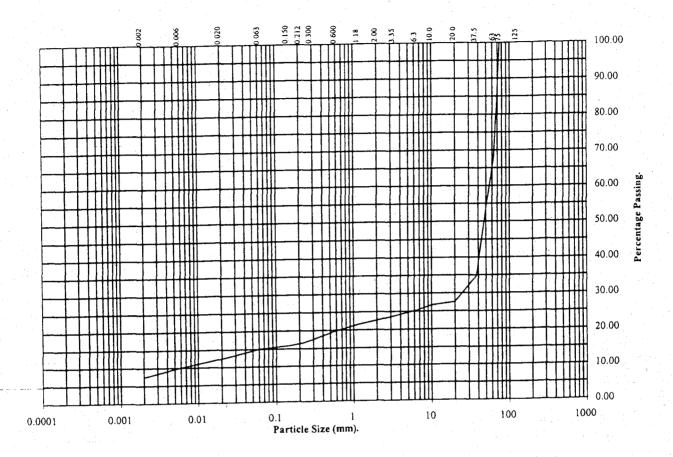
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit/Sample Number:

59A

Depth (m):

1.00



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	68	
37.5	35	
20	28	
10	27	
6.3	25	
3.35	24	
2	23	
1.18	22	
0.6	20	
0.3	18	
0.212	17	
0.15	16	
0.063	15	

Particle Diameter	Percentage Passing
0.02	12
0.006	10
0.002	7

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	32 45 8 8 7

Remarks:			
Remarks: See summary	of soil	descri	ptions.

Checked By	Date	Approved By	Date
R.Com	25/9/01	1/0-	25/9/01



BICESTER

BS1377:Part 2:1990.

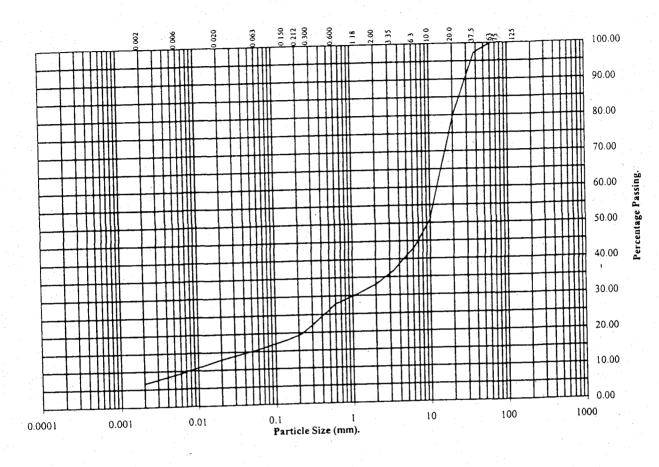
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

61

Depth (m):

0.50



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	97	
20	80	
10	51	
6.3	43	
3.35	37	
2	33	
1.18	31	
0.6	28	
0.3	22	
0.212	20	
0.15	18	
0.063	16	

	Particle	Percentage
Diameter		Passing
	0.02	13
	0.006	9
	0.002	7

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 67 17 9 7

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
12 Cm	25/9/01	Ra	25/9/01



BICESTER

BS1377:Part 2:1990.

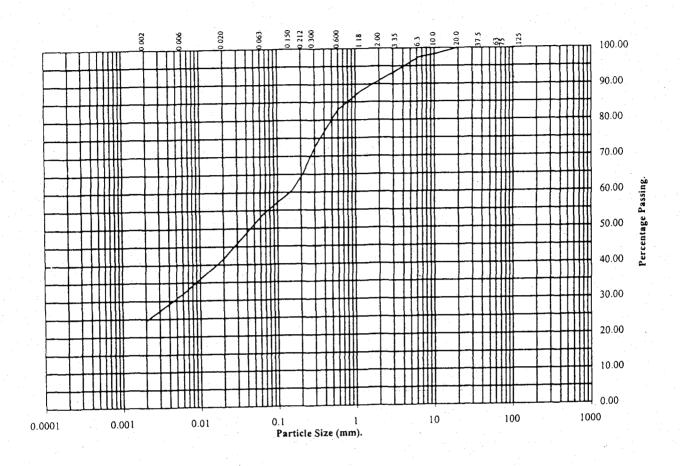
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

63A

Depth (m):

1.00



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	97
3.35	94
2	91
1.18	88
0.6	83
0.3	72
0.212	65
0.15	60
0.063	54

Particle	Percentage
Diameter	Passing
0.02	42
0.006	32
0.002	25

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 9 37 29 25

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
R.C.	25/9/01	RC	25/9/01



BICESTER

BS1377:Part 2:1990.

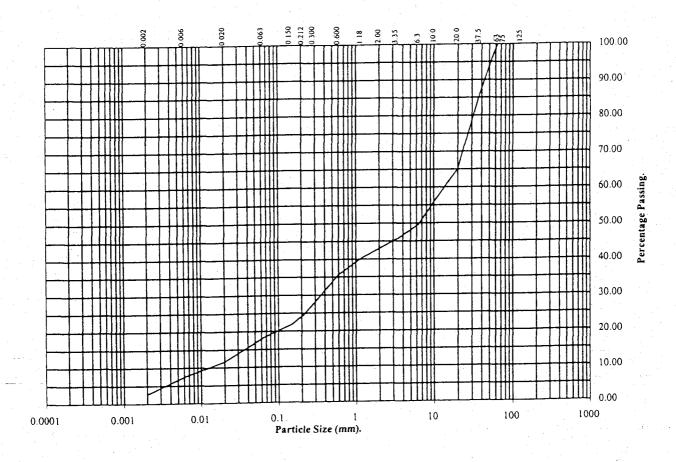
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

64

Depth (m):

0.60



Sieve Passing 125 100 75 100 63 100 37.5 86 20 65 10 56 6.3 50 225 46	BS Test	Percentage
75 100 63 100 37.5 86 20 65 10 56 6.3 50	Sieve	Passing
63 100 37.5 86 20 65 10 56 6.3 50	125	100
37.5 86 20 65 10 56 6.3 50	75	100
20 65 10 56 6.3 50	63	100
10 56 6.3 50	37.5	86
6.3 50	20	65
	10	56
225 1 46	6.3	50
3.33 40	3.35	46
2 43	2	43
1.18 40	1.18	40
0.6 36	0.6	36
0.3 28	0.3	28
0.212 24	0.212	24
0.15 22	0.15	22
0.063	0.063	18

Particle	Percentage
Diameter	Passing
0.02	12
0.006	7
0.002	3

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 57 25 15 3

Remarks:	
See summary of so	il descriptions.

			
Checked By	Date	Approved By	Date
100-	25/9/01	R Con	25/9/0,



BICESTER

BS1377:Part 2:1990.

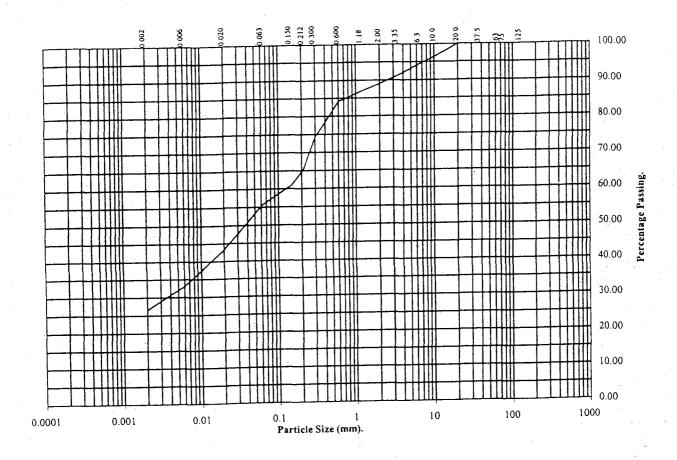
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

66

Depth (m):

0.30



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	96
6.3	94
3.35	91
2	89
1.18	87
0.6	84
0.3	74 .
0.212	65
0.15	61
0.063	56

	Particle	Percentage
. !	Diameter	Passing
	0.02	43
	0.006	33
	0.002	27

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 11 33 29 27

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
RCu	25/9/01	Ren	25/9/01



BICESTER

BS1377:Part 2:1990.

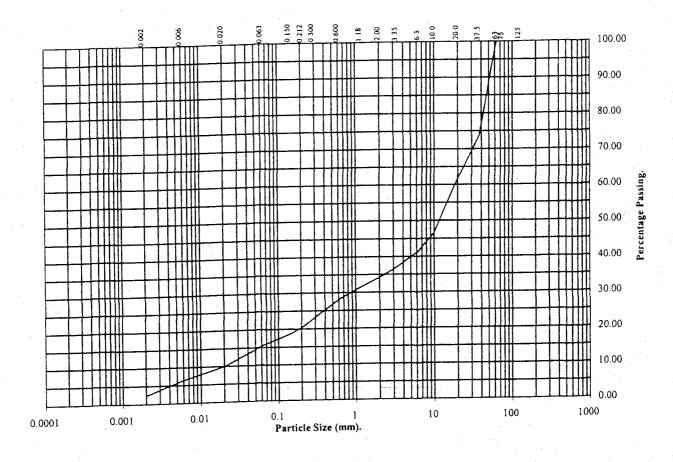
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

72

Depth (m):

0.30



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	74	
20	62	
10	47	
6.3	41	
3.35	37	
2	34	
1.18	32	
0.6	28	
0.3	23	
0.212	21	
0.15	19	
0.063	16	

Particle	Percentage
Diameter	Passing
0.02	10
0.006	
0.006	6
0.002	2

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 66 18 14 2

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
1 Cm	1stala,	Rle	25/9/01



BICESTER

BS1377:Part 2:1990.

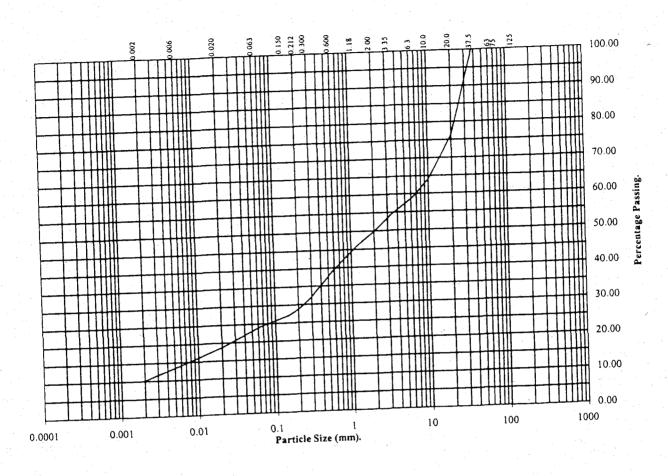
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

72

Depth (m):

0.60



Percentage	
Passing	
100	
100	
100	
100	
76	
64	
59	
54	
50	
46	
40	
32	
29	
27	
24	

	•	
	Particle	Percentage
Ì	Diameter	Passing
	0.02	19
	0.006	14
	0.002	10

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	50 26 14 10

See summary of soil descriptions.

Checked By	Date	Approved By	Date
	25/9/01	Klin	25/9/01



BICESTER

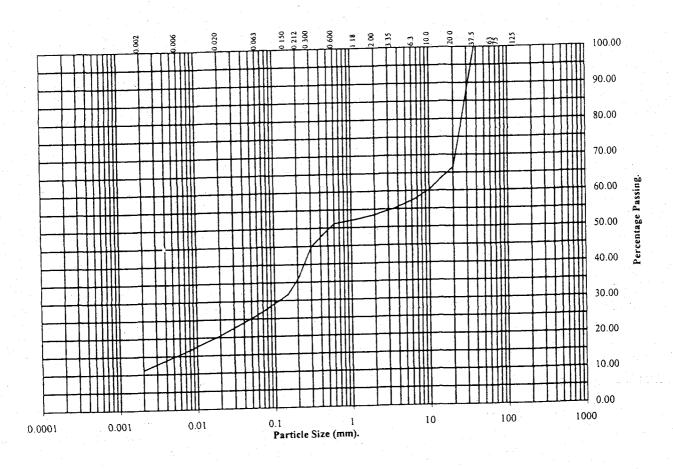
BS1377:Part 2:1990. Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

79

Depth (m):

0.50



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	66
10	60
6.3	58
3.35	55
2	53
1.18	52
0.6	51
0.3	45
0.212	37
0.15	32
0.063	26

Particle	Percentage
Diameter	Passing
0.02	20
0.006	15
0.002	11

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 47 27 15 11

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rlu	25/9/01	Ren	25/9/01



BICESTER

BS1377:Part 2:1990.

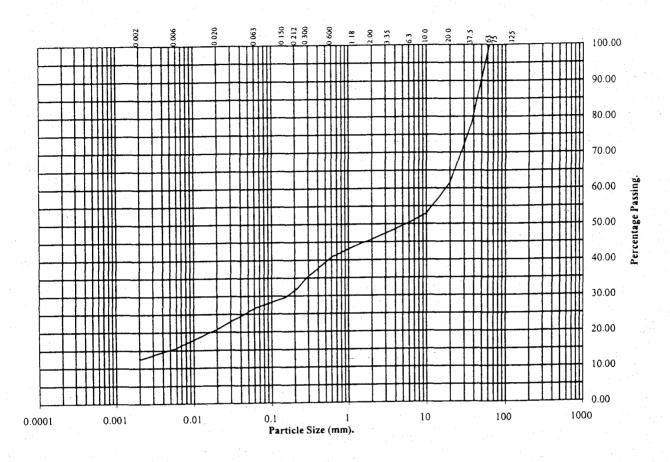
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

79

Depth (m):

0.90



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	78
20	62
10	53
6.3	51
3.35	48
2	46
1.18	44
0.6	41
0.3	36
0.212	32
0.15	30
0.063	27

	Particle `	Percentage
Ì	Diameter	Passing
	0.02	21
	0.006	16
	0.002	13

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 54 19 14 13

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Rlin	25/9/01	Rlin	25/9/01



BICESTER

BS1377:Part 2:1990.

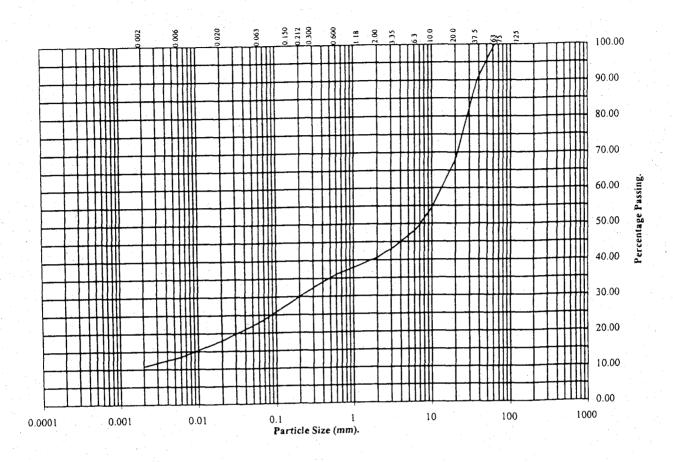
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

79A

Depth (m):

0.40



BS Test	Percentage
Sieve	Passing
125	100
75	
63	100
37.5	90
20	68
10	55
6.3	48
3.35	44
2	41
1.18	39
0.6	36
0.3	33
0.212	30
0.15	28
0.063	23

	Particle	Percentage
	Diameter	Passing
	0.02	18
٠.	0.006	14
	0.002	11

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 59 18 12 11

Rem	<u>arks:</u>	
Caa	cumma	

See summary of soil descriptions.

Checked By	Date	Approved By	Date
Ren	25/9/01	1100	25/01/01



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BS1377:Part 2:1990.

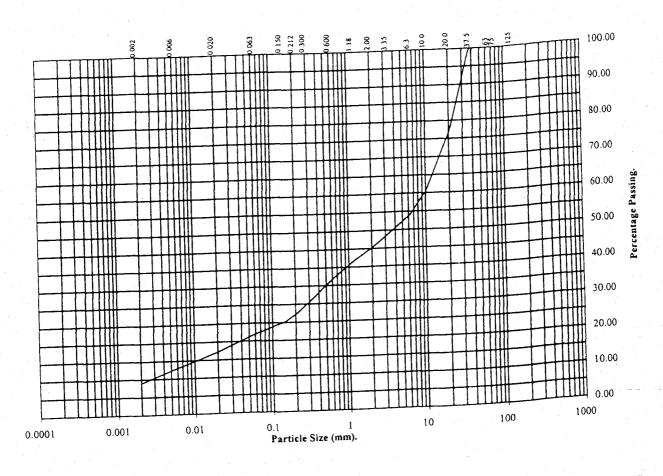
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

79B

Depth (m):

0.50



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	100	
37.5	100	
20	77	
10	60	
6.3	54	
3.35	49	
2	45	
1.18	42	
0.6	37	
0.3	31	
0.212	28	
0.15	25	
0.063	22	
	<u> </u>	

Particle	Percentage	
Diameter	Passing	
0.02	17	
0.006	13	
0.002	9	

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 55 23 13 9	

Remarks:

See summary of soil descriptions.

			Date
Checked By	Date	Approved By	10.70
19 19	25/9/01	Rlin	25/9/01
1/C/1-	23//101		



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BS1377:Part 2:1990.

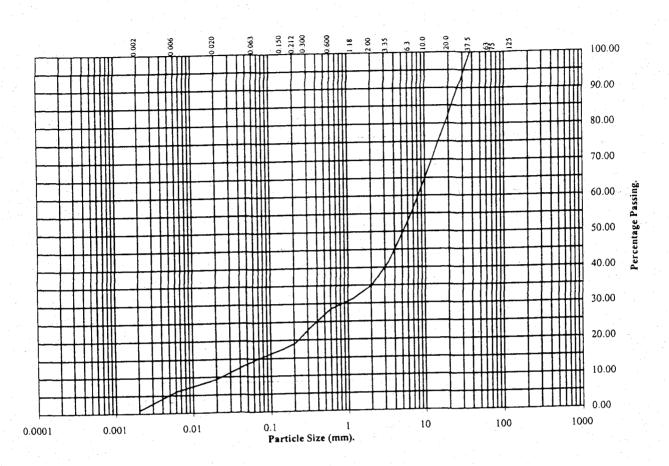
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

82

Depth (m):

0.60



BS Test	Percentage		
Sieve	Passing		
125	100		
75	100		
63	100		
37.5	100		
20	82		
10	65		
6.3	54		
3.35	42		
2	35		
1.18	31		
0.6	28		
0.3	23		
0.212	19		
0.15	18		
0.063	15		

- શ્રે	
Particle	Percentage
Diameter	Passing
0.02	9
0.006	6
0.002	11

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	0 65 20 14	

Remarks:		
See summary	of soil	descriptions.

Checked By	Date	Approved By	Date
Ran	25/0/01	Ren	25/9/01



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BS1377:Part 2:1990.

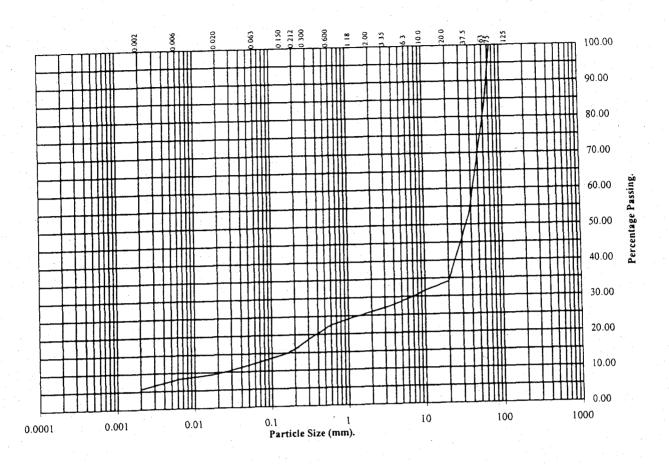
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

83

Depth (m):

0.80



BS Test	Percentage	
Sieve	Passing	
125	100	
75	100	
63	83	
37.5	53	
20	34	
10	32	
6.3	30	
3.35	27	
2	26	
1.18	25	
0.6	23	
0.3	19	
0.212	16	
0.15	15	
0.063	12	
		

Particle	Percentage
Diameter	Passing
0.02	10
0.006	8
0.002	6

Soil	Total	
Fraction	Percentage	
Cobbles Gravel Sand Silt Clay	17 57 14 6 6	

See summary of soil descriptions.

Checked By	Date	Approved By	Date
R Cm	25/9/01	Ra	25/9/01



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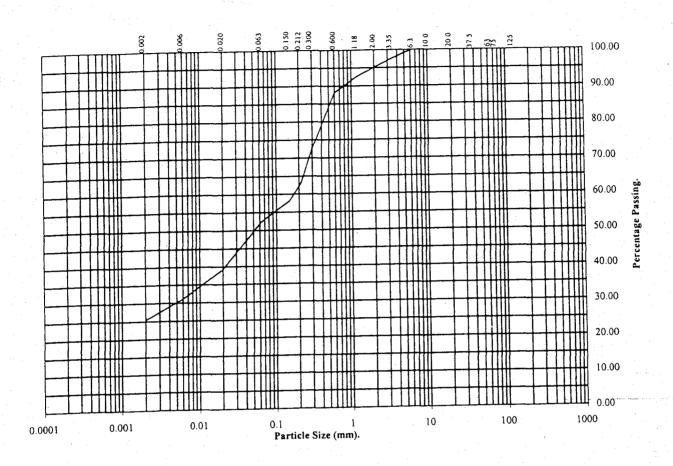
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

84

Depth (m):

1.00



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	97
2	95
1.18	93
0.6	88
0.3	73
0.212	63
0.15	58
0.063	52

	γ
Particle.	Percentage
Diameter	Passing
0.02	39
0.006	31
0.002	25

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 5 43 27 25

Rer	n	a	r	K	<u>s</u>	:
~		_		_		_

See summary of soil descriptions.

Checked By	Date	Approved By	Date
RCin	25/9/01	Klin	25/4/01



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BS1377:Part 2:1990.

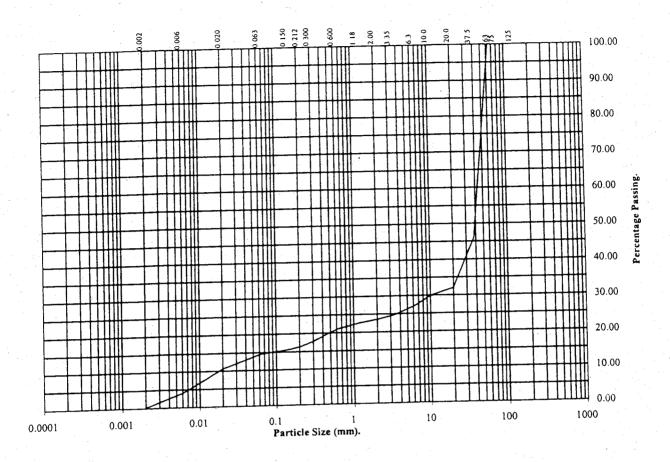
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

84

Depth (m):

1.50



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	46
20	32
10	30
6.3	27
3.35	25
2	24
1.18	23
0.6	21
0.3	18
0.212	16
0.15	16
0.063	15
L	

Particle Diameter	Percentage Passing
0.02	11
0.006	4
0.002	0

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	0 76 9 15 0

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
K Com	25/9 ki	Ren	25/9/01



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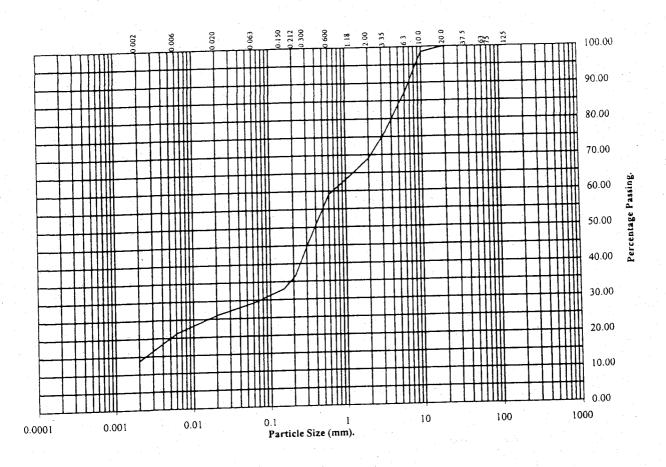
BS1377:Part 2:1990.

Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number: 89

Depth (m):

0.90



BS Test	Percentage
Sieve	Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	88
3.35	76
2	69
1.18	65
0.6	59
0.3	45
0.212	37
0.15	.33
0.063	29

	Particle	Percentage	
	Diameter	Passing	
	0.02	26	
-	0.006	21	
	0.002	14	

Soil	Total
Fraction	Percentage
 Cobbles Gravel Sand Silt Clay	0 31 40 15

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
1 Cm	25/9/61	RCu	25/9/01



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BS1377:Part 2:1990.

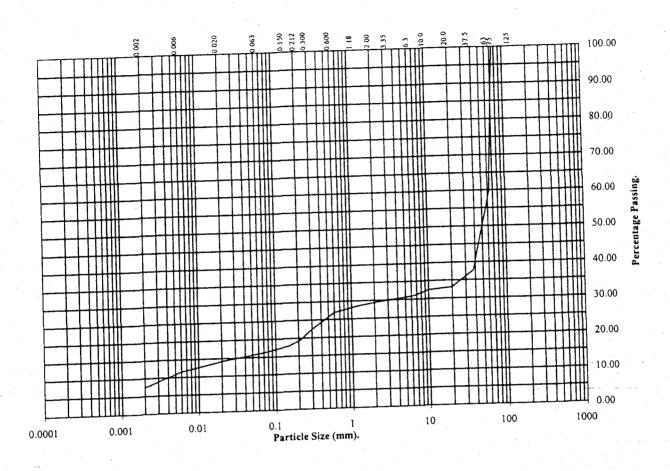
Wet sieve and Pipette Analysis: Clause 9.2 9.4

Trial Pit /Sample Number:

89A

Depth (m):

0.80



73
Passing
100
100
60
38
33
32
31
30
29
29
27
22
19
18
16

Particle	Percentage				
Diameter	Passing				
0.02	14				
0.006	12				
0.002	7				

Soil	Total
Fraction	Percentage
Cobbles Gravel Sand Silt Clay	40 31 13 9 7

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
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1 K Km	29/9/01	1/200	1221 1421



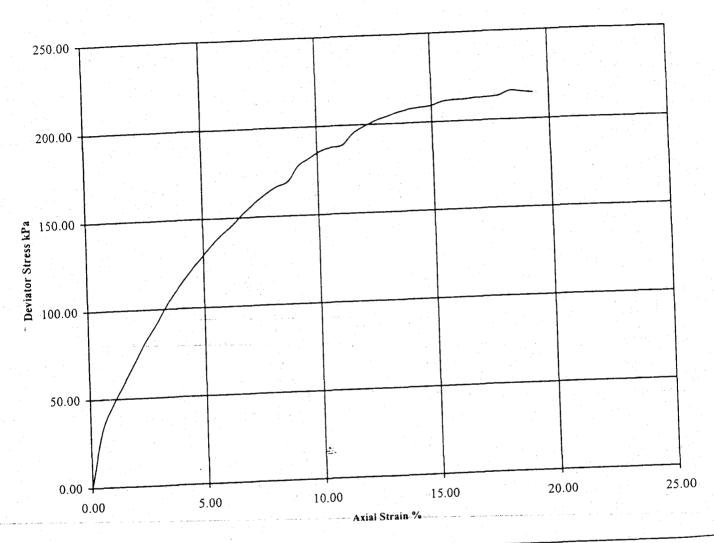
BICESTER

without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Borehole / Sample Number: 1

Depth (m):

2.00



							100	nm Multist	1398
		102	Height	(mm):	207	Test:	100n		Remarks
Diamete	r (mm):			Cell	Deviator	Cohesion	Failure	Mode	
-	Moisture	Bulk	Dry	Cen			Strain	of	See summary of soil descriptions.
Specimen	Content	Density	Density	Pressure	Stress			Failure	
Specimen		(Mg/m3)	(Mg/m3)	(kPa)	(kPa)	(kPa)	(%)		
	(%)			25	169	85	8.7	Plastic	
A	15	. 2.29	1.99			94	11.1		
				50	189			 	1
		 		100	216	108	18.4		

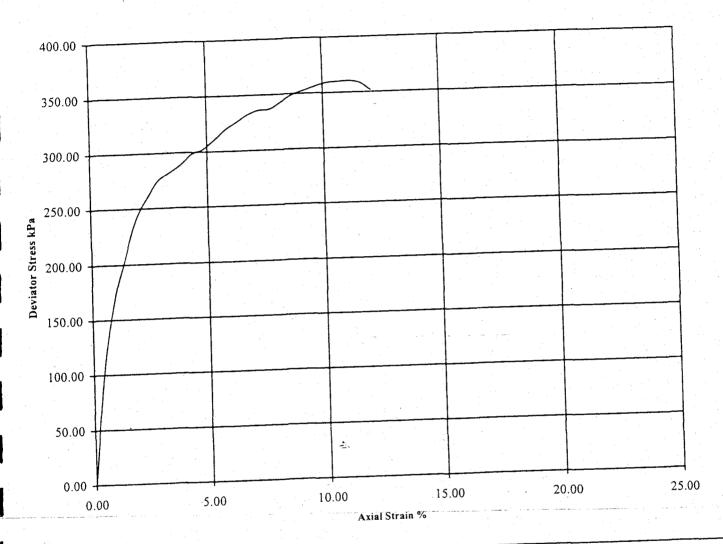
<u> </u>			Checked Date Approved Date Kl. 16/9/01 Kl. 26/9/41	
	THYSSEN GEOTECHNICAL	BICESTER.	Contract No: NL211004	

without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Borehole / Sample Number: 4

Depth (m):

3.00



Diameter (mm): 102 Height (mm):						Test:	100mm Multistage			
Diamete	r (mm):	102	Height		207	Cohesion	Failure	Mode	Remarks	
	Moisture	Bulk	Dry	Cell Pressure	Deviator Stress	Conesion	Strain		See summary of soil descriptions.	
Specimen	Content (%)	Density (Mg/m3)	Density (Mg/m3)	(kPa)	(kPa)	(kPa)	(%)	Failure		
	21	2.07	1.71	25	302	151	4.8	Brittle		
A	21	2.07		50	337	168	7.7			
				100	360	180	11.1			

4 1	THYSSEN
	GEOTECHNICAL

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26/9/01 RCm 26/9/01 Contract No: NL211004

Approved

Date

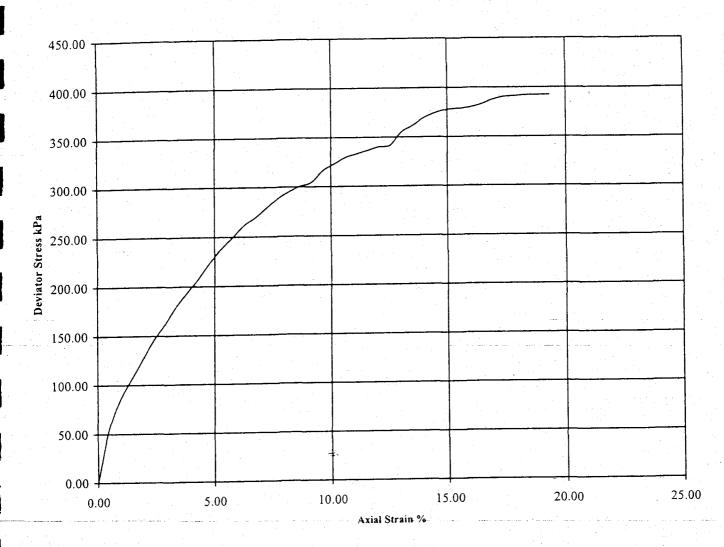
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without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Borehole / Sample Number: 6

Depth (m):

2.00



Diameter (mm):		102	Height	(mm):	207	Test:	100n	ım Multis	tage
	Moisture	Bulk	Dry	Cell	Deviator	Cohesion	Failure	Mode	Remarks
Specimen	Content	Density	Density	Pressure	Stress		Strain	of	See summary of soil descriptions.
		Mg/m3) $(Mg/m3)$ (kPa)		(kPa)	(kPa)	(%)	Failure		
A	19	2.10	1.77	25	305	152	9.2	Plastic	
				50	342	171	12.6		
				100	392	196	19.3		

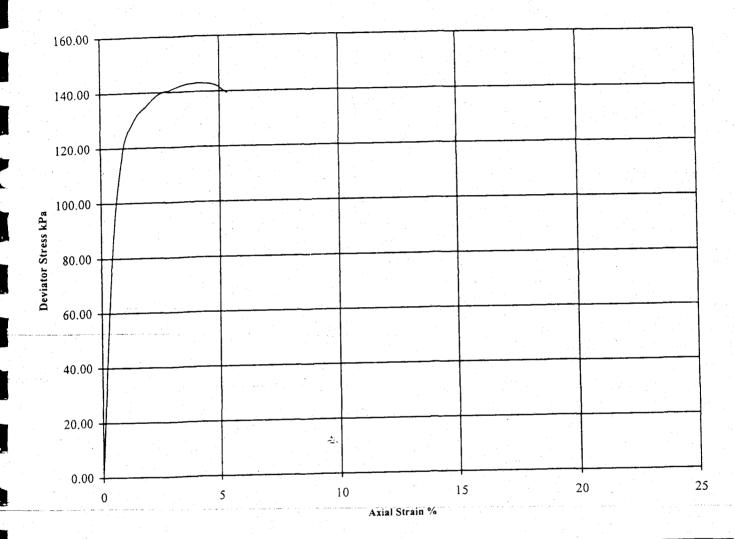
		Checked	Date 26/9/01	Approved	Date 16/9/01
GEOTECHNICAL	BICESTER.			ract No: 211004	

without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Borehole / Sample Number: 10

Depth (m):

1.00



					202	T	100	- Single S	tage
Diamete	er (mm):	102	Height	(mm):	207	Test:	100 mm Single St		
	Moisture	Bulk	Dry	Cell	Deviator	Cohesion	Failure	Mode	Remarks
Specimen	Content	Density	Density	Pressure	Stress		Strain	of	See summary of soil descriptions.
	(%)	(Mg/m3)	(Mg/m3)	(kPa)	(kPa)	(kPa)	(%)	Failure	
A	31.2	1.92	1.46	25	143	71	4.3	Brittle	
В							<u> </u>		
- C				·				<u></u>	



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Contract No: NL211004

Date

26/9/01

Approved

Date

26/7/01

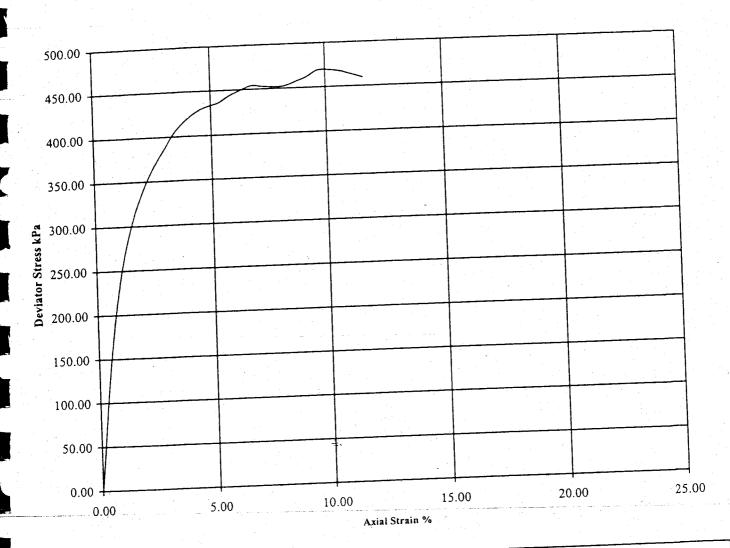
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without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Trial Pit / Sample Number: 74

Depth (m):

0.70



<u> </u>					207	Test:	100mm Multistage		
Diamete	r (mm):	102	Height				Failure	Mode -	Remarks
	Moisture	Bulk	Dry	Cell Pressure	Deviator Stress	Cohesion	Strain		Recompacted 2.5kg rammer.
Specimen	Content	Density (Mg/m3)	Density (Mg/m3)	(kPa)	(kPa)	(kPa)	(%)	Failure	
	(%)	1.90	1.53	50	436	218	5.3	Brittle	
A	24	1.90	1.33	100	454	227	6.8		
	<u> </u>			200	469	235	10.1		



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Checked Date Approved Date

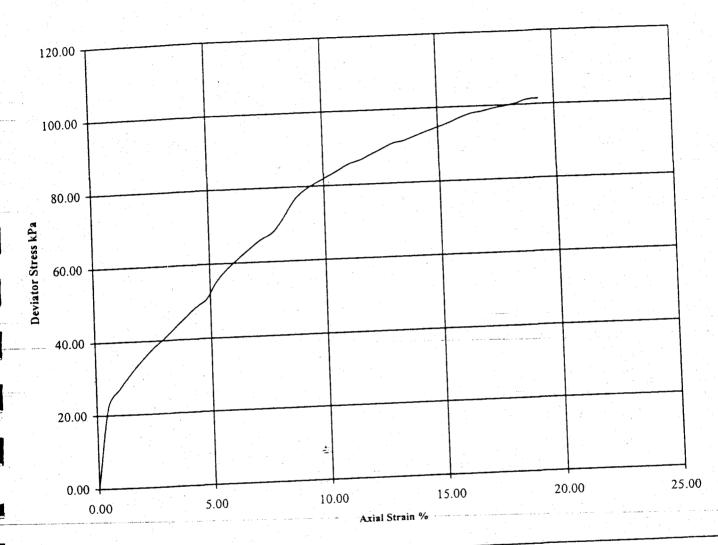
**Contract No: NL211004

without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Trial Pit / Sample Number: 76

Depth (m):

2.50



					207	Test:	100n	ım Multisi	age
Diamete	r (mm):	102	Height			Cohesion	Failure	Mode	Remarks
	Moisture	Bulk	Dry	Cell	Deviator	Concaton	Strain	of	Recompacted 2.5kg rammer.
Specimen	Content	Density	Density	Pressure	Stress	(17.)	(%)	Failure	
	(%)	(Mg/m3)	(Mg/m3)	(kPa)	(kPa)	(kPa)		Plastic.	
\	15	2.22	1.92	50	51	25	4.8	riastic.	
A	1-13			100	68	34	7.7	ļ	
<u> </u>				200	102	51	19.3	1	
L		L							Chacked Date Approved Date



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Checked Date Approved Date

10 26/9/61 10 26/9/61

Contract No:

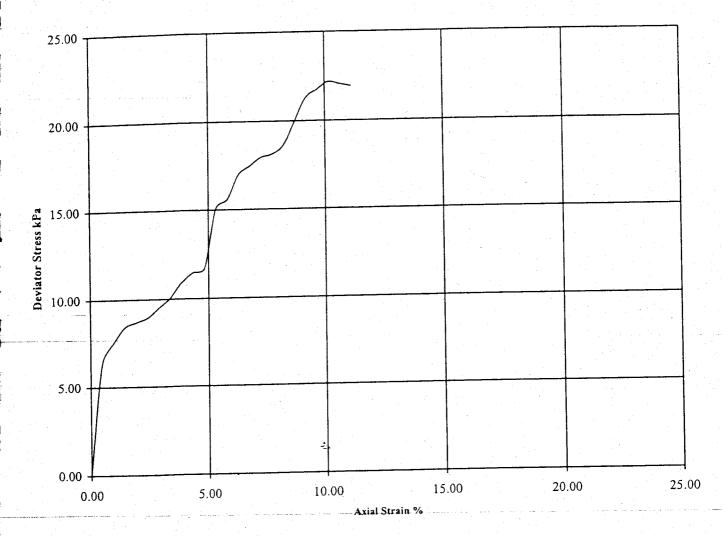
NL211004

without measurement of Pore Pressure B.S. 1377: Part7: Clause 8: 1991

Trial Pit / Sample Number: 89A

Depth (m):

0.50



Diameter (mm):		102	Height (mm):		207	Test:	100mm Multistage		
Diamete			Dry	Cell	Deviator	Cohesion	Failure	Mode	Remarks
Specimen	Moisture Content	Bulk Density	Density	Pressure	Stress		Strain	of	Recompacted 2.5kg rammer.
opeoie	(%)	(Mg/m3)	(Mg/m3)	(kPa)	(kPa)	(kPa)	(%)	Failure	
Α	106	1.32	0.64	50	1.2	6	4.8	Plastic.	
				100	18	9	7.7		
				200	22	11	10.1		

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Contract No: NL211004

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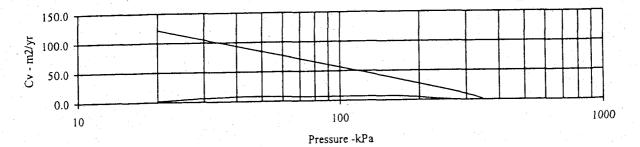
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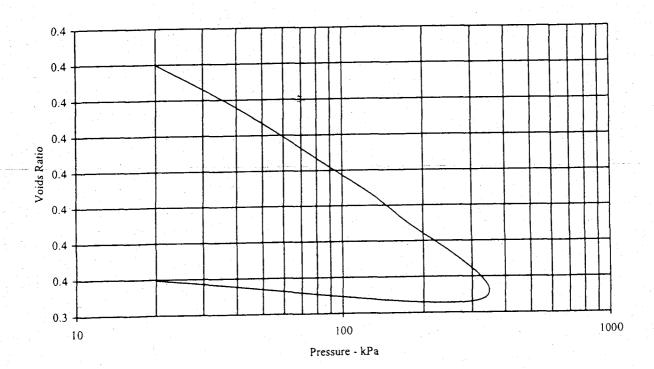
Date

BS 1377: Part 5: 1990

Borehole \ Sample No. 1 Depth (m): 2.00

Initial Conditions		Pres	sure Ra	nge	Mv	Cv	Final Conditions	
Moisture Content (%):	18		kPa		m2/MN	m2/yr	Moisture Content (%):	15
Bulk Density (Mg/m3):	2.19	0	-	20	0.649	2.042	Bulk Density (Mg/m3):	2.26
Dry Density (Mg/m3):	1.86	20	_	40	0.431	8.161	Dry Density (Mg/m3)	1.96
	0.428	40	_	80	0.257	6.877	Voids Ratio:	0.35
Voids Ratio: Degree of saturation:	110.9	80	. ·	160	0.143	7.039	Degree of Saturation: :	116.2
	19.25	160	_	320	0.110	6.094	Height (mm):	18.19
Height (mm):	75	320	_	20	0.015	121.886	Remarks:	
Diameter (mm) Particle Density (Mg/m3):		1 320					See summary of soil descriptions.	
Assumed	2.03		1.					





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26/9/01



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Contract No. NL211004 of .1

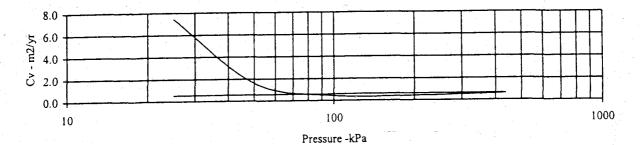
Page 1

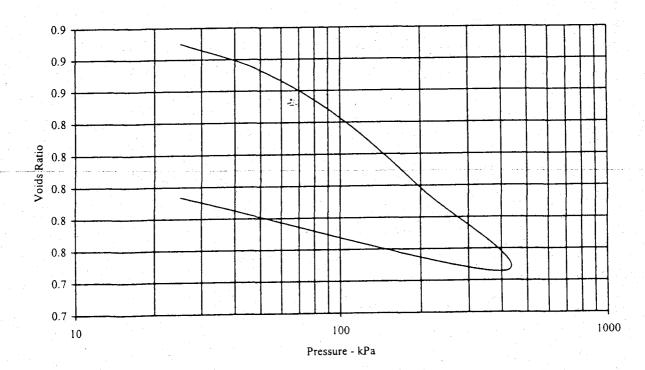
BS 1377: Part 5: 1990

Borehole \ Sample No. 2

Depth (m): 3.00

Initial Conditions		Pres	ssure Ra	nge	Mv	Cv	Final Conditions	
Moisture Content (%):	40	kPa		m2/MN	m2/yr	Moisture Content (%):	36	
Bulk Density (Mg/m3):	1.94	0 :	_	25	0.563	7.427	Bulk Density (Mg/m3):	2.02
Dry Density (Mg/m3):	1.38	25		50	0.360	1.602	Dry Density (Mg/m3)	1.48
Voids Ratio:	0.917	50		100	0.323	0.424	Voids Ratio:	0.794
Degree of saturation:	116.8	100	. ~	200	0.241	0.419	Degree of Saturation: :	121.5
Height (mm):	19.62	200		400	0.147	0.643	Height (mm):	18.35
Diameter (mm)	75	400		25	0.073	0.524	Remarks:	. *
Particle Density (Mg/m3):	2.65						See summary of soil descriptions.	
Assumed								





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Contract No. NL211004

Page 1

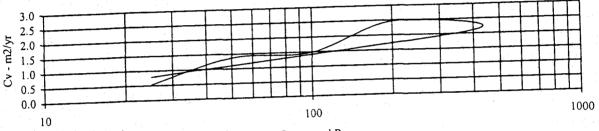
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BS 1377: Part 5: 1990

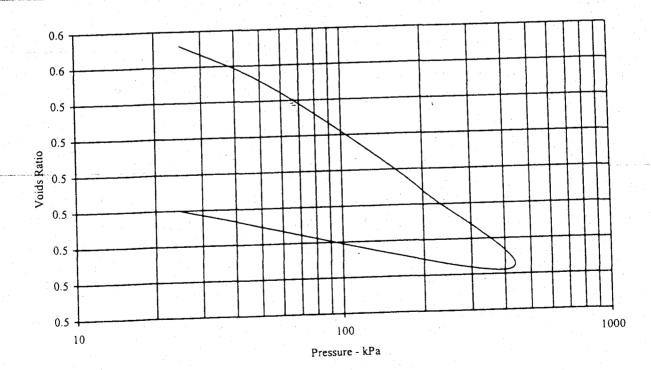
Borehole \ Sample No. 3

Depth (m): 3.00

		Drac	sure Rai	nge	Mv	Cv	Final Conditions	
Initial Conditions		Pies		ugo	m2/MN	m2/yr	Moisture Content (%):	- 24
Moisture Content (%):	27		kPa		0.527	0.537	Bulk Density (Mg/m3):	2.18
Bulk Density (Mg/m3):	2.13	0	- '	25	· ·		Dry Density (Mg/m3)	1.76
Dry Density (Mg/m3):	1.68	25	-	. 50	0.263	1.367	Voids Ratio:	0.51
Voids Ratio:	0.577	50	-	100	0.191	1.487	Degree of Saturation: :	125.8
Degree of saturation:	122.6	100	-	200	0.112	2.460		19.19
Height (mm):	20.04	200	-	400	0.075	2.106	Height (mm):	19.19
Diameter (mm)	75	400	- '	25	0.033	0.791	Remarks: See summary of soil descriptions.	
Particle Density (Mg/m3):	2.65						See summary of soil descri	прионз
Assumed					<u> </u>	<u> </u>	<u> </u>	



Pressure -kPa



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Contract No. NL211004

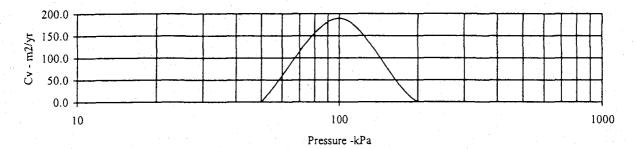
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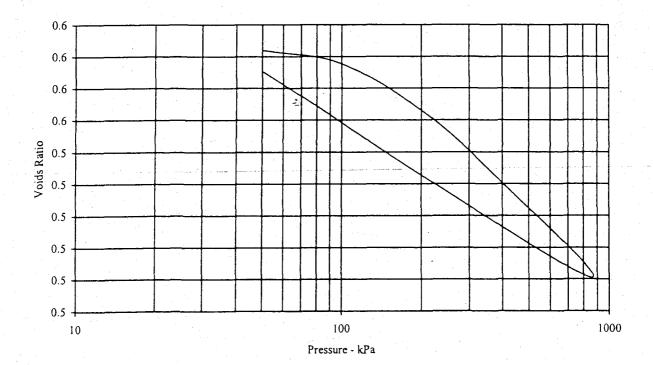
BS 1377: Part 5: 1990

Borehole \ Sample No.

Depth (m): 3.00

Initial Conditions		Pressure Range		nge	Mv	Cv	Final Conditions	
Moisture Content (%):	26	kPa		m2/MN	т2/ут	Moisture Content (%):	26	
Bulk Density (Mg/m3):	2.13	0	-	50	Swelling	Swelling	Bulk Density (Mg/m3):	2.14
Dry Density (Mg/m3):	1.69	50	· -	100	0.054	189.565	Dry Density (Mg/m3)	1.69
Voids Ratio:	0.569	100	-	200	0.094	0.377	Voids Ratio:	0.565
Degree of saturation:	121.9	200	<u>.</u> .	400	0.073	0.196	Degree of Saturation: :	122.4
Height (mm):	19.81	400	-	800	0.047	0.267	Height (mm):	19.76
Diameter (mm)	75	800	•,	50	0.057	0.061	Remarks:	
Particle Density (Mg/m3):	2.65						See summary of soil descriptions.	
Assumed					·			





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Contract No. NL211004

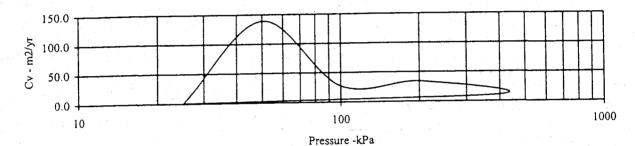
of 1 Page 1

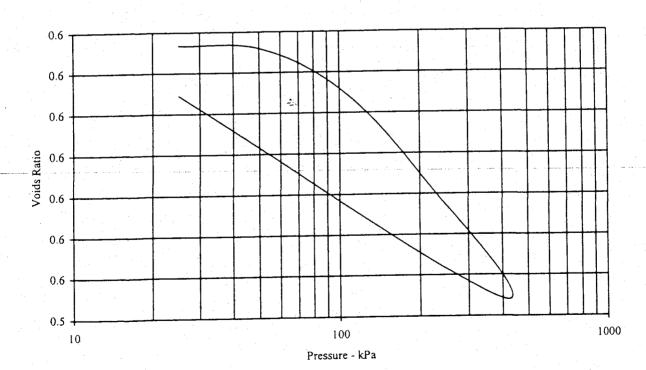
BS 1377: Part 5: 1990

Borehole \ Sample No.

Depth (m): 2.00

Initial Conditions		Pressure Range		Mv	Cv	Final Conditions		
Moisture Content (%):	22		kPa	_	m2/MN	m2/yr	Moisture Content (%):	22
Bulk Density (Mg/m3):	2.01	0		25	Swelling	Swelling	Bulk Density (Mg/m3):	2.02
Dry Density (Mg/m3):	1.65	25	~	50	0.021	139.067	Dry Density (Mg/m3)	1.66
Voids Ratio:	0.606	50		100	0.124	27.264	Voids Ratio: 0.5	
Degree of saturation:	95.4	100	_	200	0.132	33.869	Degree of Saturation: :	97.2
Height (mm):	19.38	200	_	400	0.097	10.687	Height (mm):	19.24
Diameter (mm)	75	400		25	0.087	0.835	Remarks:	
Particle Density (Mg/m3):							See summary of soil descriptions.	
Assumed								·





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Contract No. NL211004

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BS 1377 : Part 4 : 1990

Depth (m): Borehole /Sample Number : 1.00 1.75 -1.73 1.71 1.69 Dry Density (Mg/m3) 1.65 Sample 0 % Air voids 5 % Air voids -10 % Air voids 1.61 1.59 1.57 1.55

Initial Moisture Content:	22	Method of Co	mpaction	4.5 Kg Rammer	/ 4 4	Separate	Sample
Particle Density (Mg/m3):	2.5	Actual	Material	Retained on 37.5 m	m Test Sieve	(%):	1
Maximum Dry Density (mg/m3):		1.75	Material	Retained on 20.0 m	m Test Sieve	(%):	3
		15					·
Optimum Moisture Content (%):	Sae si	ımmary of soil (lescriptions		**		
Remarks	300 30	Alluman y ox oon t					
} '							

16 🚉

Moisture Content (%)

14

22

20

24

	Checked By Date A	Approved By Date Recognition 26/9/01
THYSSEN GEOTECHNICAL	BICESTER.	Contract No. NL211004
GEOTECHNICAL.		

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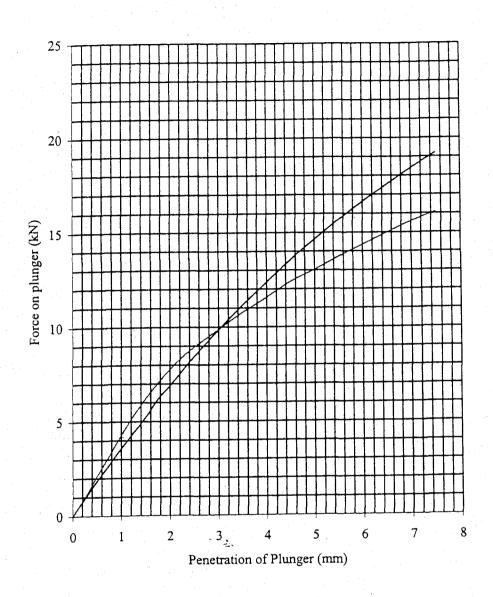
BS 1377: Part 4: 1990

Borehole Number

.1

Depth (m):

1.00



Initial Sample Condition	ons	Test Conditions	Method of compaction		4.5 Kg Rammer		
Moisture Content:	9.8	Surcharge Kg:	ircharge Kg: 4.000 Final		ntent %	C.B.R. Value %	
Bulk Density Mg/m3:	1.81	Soaking Time hrs	0	Sample Top	10.1	Sample Top	73.1
Dry Density Mg/m3:	1.65	Swelling mm:	.0	Sample Bottom	10.3	Sample Bottom	67.7
Percentage retained on	20mm	Remarks:	See Su	mmary of Soil De	escription.		
BS test sieve:	4				· · · · · · · · · · · · · · · · · · ·		

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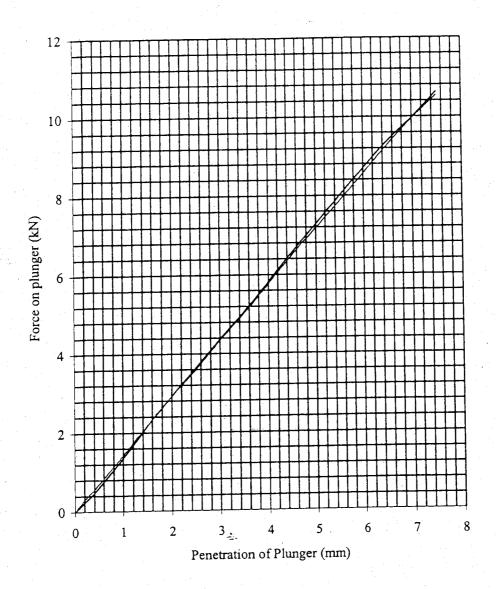
BS 1377: Part 4: 1990

Borehole Number

1

Depth (m):

1.00



Initial Sample Conditions		Test Conditions		Method of compact	Method of compaction		
Moisture Content:	12.9	Surcharge Kg:	4.000	Final Moisture Con	itent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	13.3	Sample Top	36.4
Dry Density Mg/m3:	1.73	Swelling mm:	0	Sample Bottom	12.8	Sample Bottom	35.9
Percentage retained on	20mm	Remarks:	See Si	ımmary of Soil De	scription.		
BS test sieve:	4	1			· · · · · · · · · · · · · · · · · · ·		

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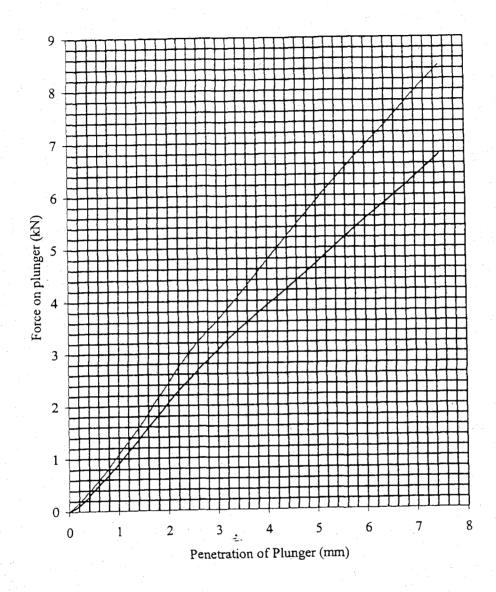


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Borehole Number

Depth (m):

1.00



Initial Sample Condition	mple Conditions Test Conditions		Method of compaction		4.5 Kg Rammer		
Moisture Content:	16.0	Surcharge Kg:	4.000	Final Moisture Con	itent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	16.3	Sample Top	23.5
Dry Density Mg/m3:	1.74	Swelling mm:		Sample Bottom	16.0	Sample Bottom	29.5
Percentage retained on			See Su	mmary of Soil De	scription.		
BS test sieve:	4	l]					

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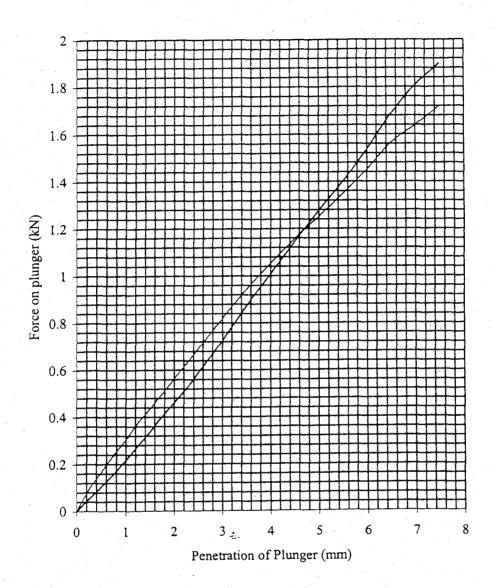
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Borehole Number

1

Depth (m):

1.00



Initial Sample Condition	l Sample Conditions Test Conditions Meth		Method of compact	Method of compaction			
Moisture Content:	18.9	Surcharge Kg:	4.000	Final Moisture Con	tent %	C.B.R. Value %	
Bulk Density Mg/m3:	1.97	Soaking Time hrs	0	Sample Top	19.3	Sample Top	6.4
Dry Density Mg/m3:	1.66	Swelling mm:	0	Sample Bottom	18.9	Sample Bottom	6.3
Percentage retained on	20mm	Remarks:	See Su	mmary of Soil De	scription.		
BS test sieve:	4						

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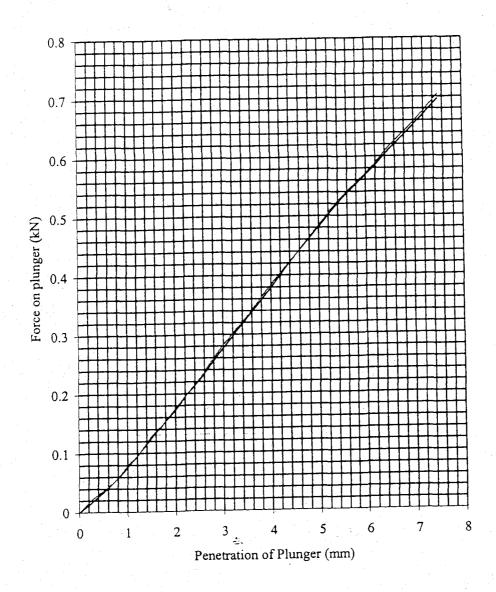


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Borehole Number

Depth (m):

1.00



nitial Sample Conditions Test Conditions			Method of compaction		4.5 Kg Rammer		
Moisture Content:	22.2	Surcharge Kg:	4.000	Final Moisture Con	itent %	C.B.R. Value %	
		Soaking Time hrs	0	Sample Top	21.8	Sample Top	2.4
Bulk Density Mg/m3: Dry Density Mg/m3:	1.58	Swelling mm:	0	Sample Bottom	22.5	Sample Bottom	2.4
Percentage retained on			See Su	immary of Soil De	scription.		
BS test sieve:		1		er en en en en en en en en en en en en en			

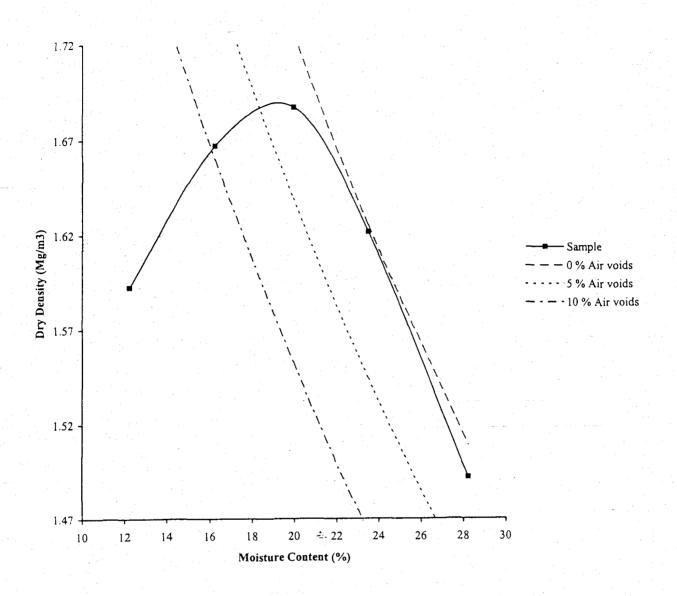
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BS 1377: Part 4: 1990

Trial Pit /Sample Number: 1A Depth (m): 0.50



Initial Moisture Content:	20	Method of C	ompaction	2.5 Kg Rammer	/ Separate	Sample
Particle Density (Mg/m3):	2.63	Actual	Material	Retained on 37.5 m	m Test Sieve (%):	0
Maximum Dry Density (mg/m3):	ry Density (mg/m3): 1.69 Material Retained o			Retained on 20.0 m	m Test Sieve (%):	- 0
Optimum Moisture Content (%):		19			· · · · · · · · · · · · · · · · · · ·	
Remarks	See	summary of soil	descriptions	•		

		Checked By	Date	Approved By	Date
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GEOTECHNICAL	BICESTER	•		Contra NL21	

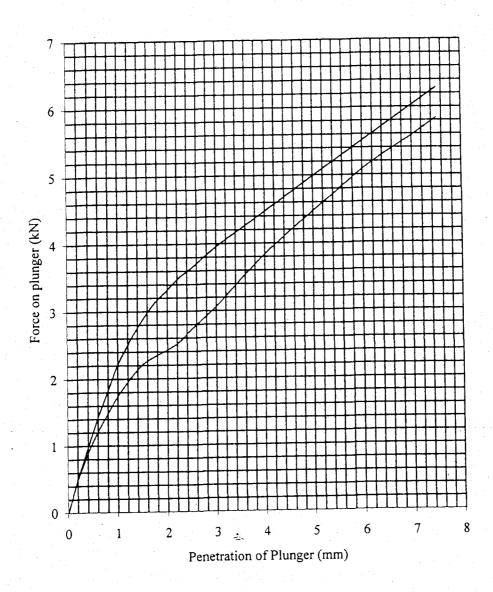
BS 1377 : Part 4 : 1990

Trial Pit Number

1A

Depth (m):

0.50



Initial Sample Conditi	ons	Test Conditions		Method of compac	tion	2.5 Kg Rammer	
Moisture Content:	12.2	Surcharge Kg:	4.000	Final Moisture Con	ntent %	C.B.R. Value %	
Bulk Density Mg/m3		Soaking Time hrs	0	Sample Top	12.2	Sample Top	27.6
Dry Density Mg/m3:		Swelling mm:		Sample Bottom	12.2	Sample Bottom	22.3
Percentage retained or		Remarks:	See Su	ımmary of Soil De	escription.		
BS test sieve:	. (

Checked by	Date	Approved By	Date
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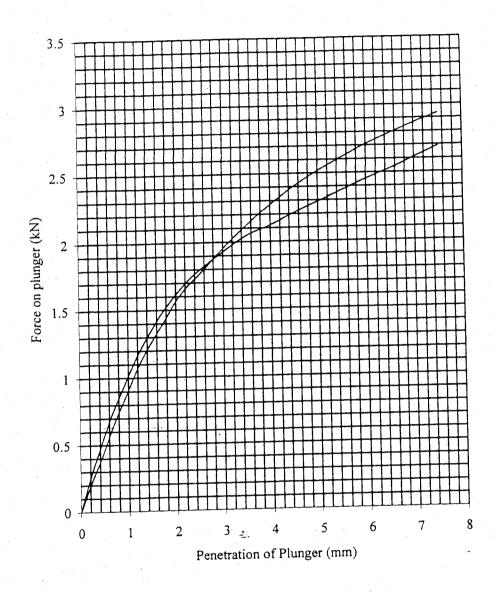
BS 1377 : Part 4 : 1990

Trial Pit Number

1A

Depth (m):

0.50



I Will Comple Conditi	ial Sample Conditions Test Conditions		Method of compaction		2.5 Kg Rammer		
		Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	
Moisture Content:		Soaking Time hrs		Sample Top	16.2	Sample Top	13.6
Bulk Density Mg/m3		Swelling mm:		Sample Bottom	16.2	Sample Bottom	13.4
Dry Density Mg/m3: Percentage retained or				ımmary of Soil D	escription.		
BS test sieve:	C				· · · · · · · · · · · · · · · · · · ·		

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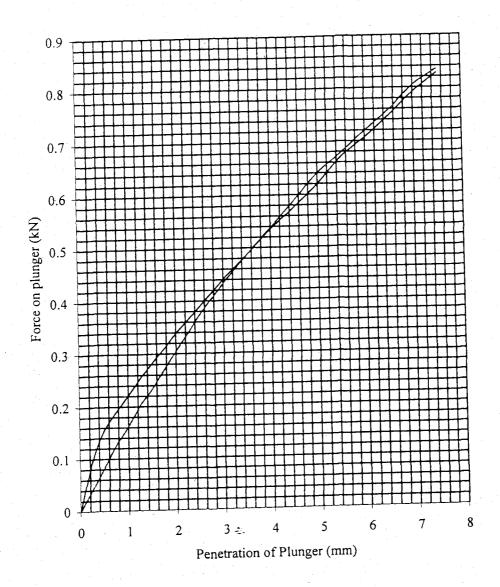
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Trial Pit Number

1A

Depth (m):

0.50



	ditions Test Conditions			Method of compac	ction	2.5 Kg Rammer	
Initial Sample Condition		Surcharge Kg:		Final Moisture Co		C.B.R. Value %	
Moisture Content:	19.9			Sample Top	20.0	Sample Top	3.1
Bulk Density Mg/m3		Soaking Time hrs		Sample Bottom	19.8	Sample Bottom	3.2
Dry Density Mg/m3:		Swelling mm:		mmary of Soil D			
Percentage retained or	20mm	Remarks:	366 36	miniary or oon 2			·
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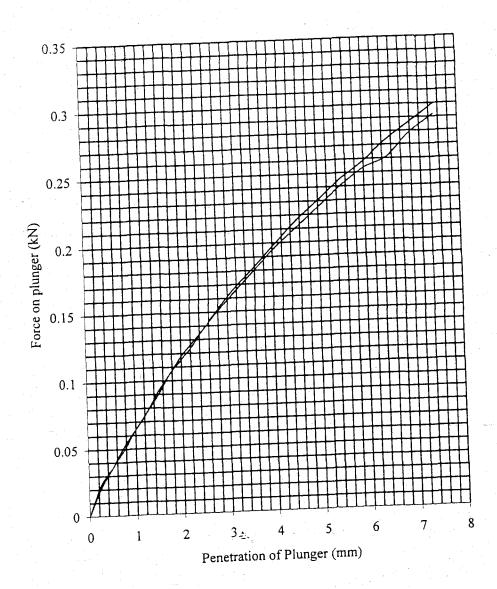
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Trial Pit Number

1A

Depth (m):

0.50



		To i C distance		Method of compact	ion	2.5 Kg Rammer	
nitial Sample Conditi	ons	Test Conditions		Final Moisture Con	_	C.B.R. Value %	
Moisture Content:		Surcharge Kg:			24.2	Sample Top	1.2
Bulk Density Mg/m3:	2.03	Soaking Time hrs		Sample Top	24.2	Sample Bottom	1.1
Ory Density Mg/m3:		Swelling mm:		Sample Bottom Immary of Soil De		TO-FF	
Percentage retained or	n 20mm	Remarks:	See St	imiliary of 3011 Do	50	en an indicate a series of the series of the series of the series of the series of the series of the series of	
BS test sieve:		0					

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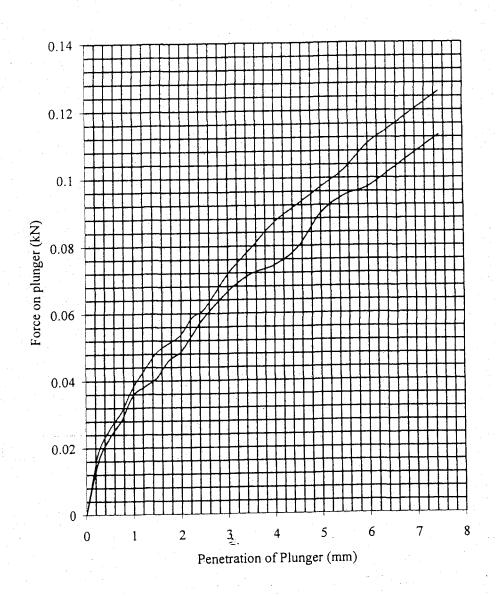
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Trial Pit Number

1A

Depth (m):

0.50



Initial Sample Condition	al Sample Conditions Test Conditions			Method of compaction		2.5 Kg Rammer	
Moisture Content:	28.2	Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	<u> </u>
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	28.2	Sample Top	0.4
Dry Density Mg/m3:	1.49	Swelling mm:	0	Sample Bottom	28.2	Sample Bottom	0.5
Percentage retained on			See Su	ımmary of Soil D	escription.		
BS test sieve:	C						

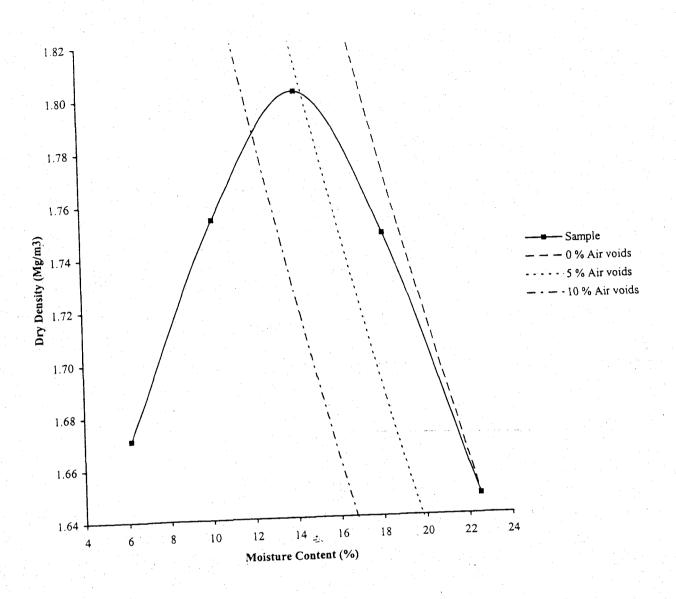
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BS 1377: Part 4: 1990

2.00 Depth (m): Trial Pit /Sample Number: 14A



Content	23	Method of Co	mpaction	4.5 Kg Rammer		Separate	Sampi
nitial Moisture Content:	2.62	Actual	Material	Retained on 37.5 m	m Test Sieve	(%):	- 0
Particle Density (Mg/m3):		1.80	Material	Retained on 20.0 m	m Test Sieve	(%):	2
Maximum Dry Density (mg/m3): Optimum Moisture Content (%):		14					
Remarks	See	summary of soil o	lescriptions	5.			

	C	Checked By Date 164/c	Approved By Date 16/4/01	
GEOTECHNICAL	BICESTER.		Contract No. NL211004	N1

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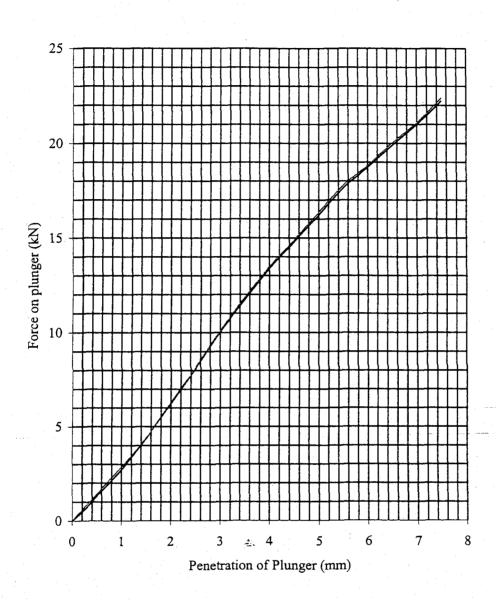
BS 1377: Part 4: 1990

Trial Pit Number

14A

Depth (m):

2.00



Initial Sample Conditi	ons	Test Conditions		Method of compa	ction	4.5 Kg Rammer	
Moisture Content:	6.2	Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:	1.77	Soaking Time hrs	0	Sample Top	6.1	Sample Top	81.0
Dry Density Mg/m3:	1.67	Swelling mm:	0	Sample Bottom	6.2	Sample Bottom	81.7
Percentage retained on	20mm	Remarks:	See Su	ımmary of Soil D	escription.		
BS test sieve:	2						

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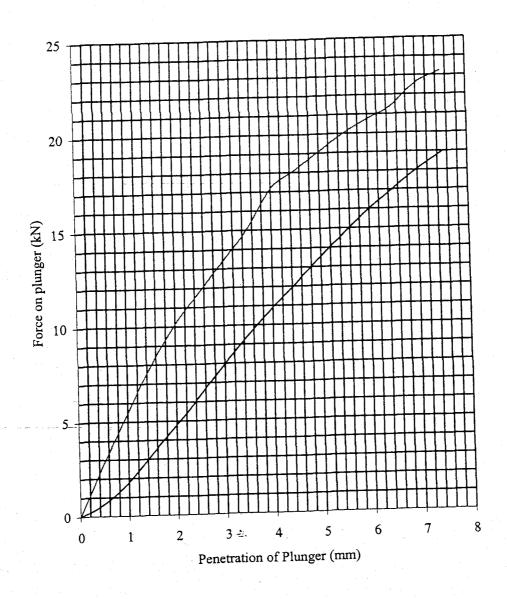
BS 1377: Part 4: 1990

Trial Pit Number

14A

Depth (m):

2.00



Initial Sample Conditions Test Conditions			Method of compac	tion	4.5 Kg Rammer		
Initial Sample Condition		T		Final Moisture Co		C.B.R. Value %	
Moisture Content:		Surcharge Kg:		Sample Top	10.2	Sample Top	67.7
Bulk Density Mg/m3:	1.93	Soaking Time hrs			10.2	Sample Bottom	95.3
Dry Density Mg/m3:	1.75	Swelling mm:		Sample Bottom		Duripio 2	
Percentage retained or	20mm	Remarks:	See Su	ımmary of Soil D	escription.		
BS test sieve:	2						

Checked by	Date	Approved By	Date
RC	26/ak	Rlu	26/4/4



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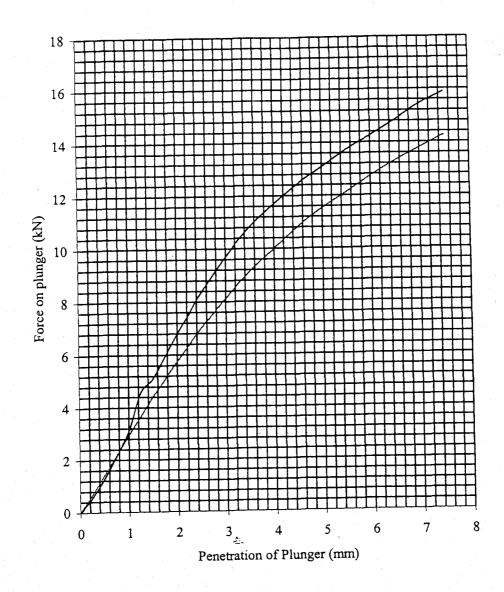
BS 1377 : Part 4 : 1990

Trial Pit Number

14A

Depth (m):

2.00



Initial Sample Condition	ons	Test Conditions N		Method of compact	Method of compaction		
Moisture Content:	14.2	Surcharge Kg:	4.000	Final Moisture Con	tent %	C.B.R. Value %	
		Soaking Time hrs		Sample Top	14.2	Sample Top	65.4
Bulk Density Mg/m3:		Swelling mm:		Sample Bottom	14.2	Sample Bottom	57.6
Dry Density Mg/m3: Percentage retained or				ımmary of Soil De	scription.		
BS test sieve:	1	2					

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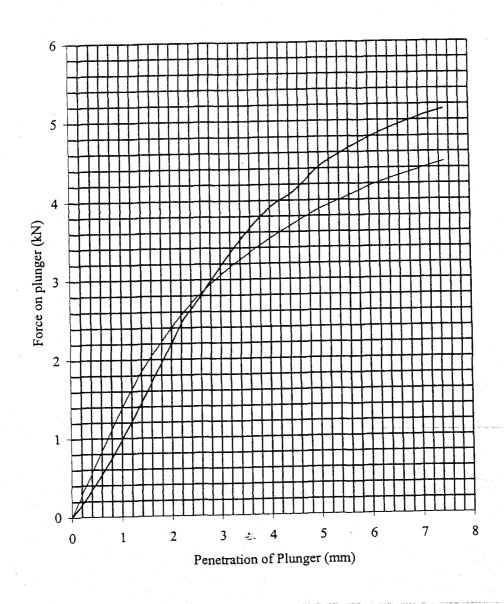
BS 1377: Part 4: 1990

Trial Pit Number

14A

Depth (m):

2.00



Initial Sample Conditions		Test Conditions		Method of compaction		4.5 Kg Rammer	
Moisture Content:	18.2	Surcharge Kg:	4.000	Final Moisture Cor	ntent %	C.B.R. Value %	
		Soaking Time hrs	0	Sample Top	18.2	Sample Top	22.1
Bulk Density Mg/m3:		Swelling mm:	0	Sample Bottom	18.2	Sample Bottom	21.0
Dry Density Mg/m3: Percentage retained or			See Su	ımmary of Soil De	scription.		
BS test sieve:	. 2						

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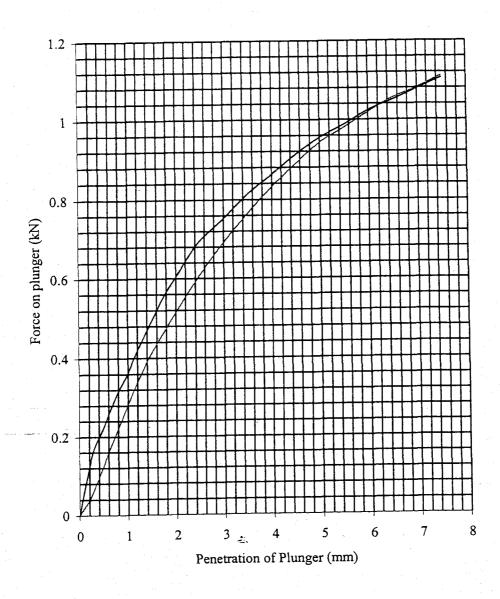
BS 1377 : Part 4 : 1990

Trial Pit Number

14A

Depth (m):

2.00



Initial Sample Conditions		Test Conditions		Method of compaction		4.5 Kg Rammer	
Moisture Content:	22.5	Surcharge Kg:	4.000	Final Moisture Con	itent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	23.7	Sample Top	5.3
Dry Density Mg/m3:	1.65	Swelling mm:		Sample Bottom	23.1	Sample Bottom	4.7
Percentage retained on			See Su	mmary of Soil De	escription.		
BS test sieve:	2	2					

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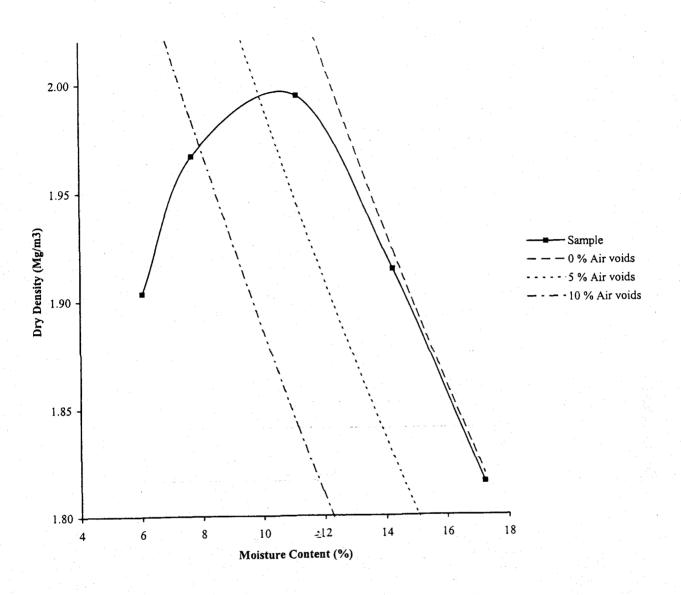


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BS 1377: Part 4: 1990

0.50

Trial Pit /Sample Number: 72 Depth (m):



Actual	Material	Retained on 37.5 mm	Test Sieve	(%):	0
2.00	Material	Retained on 20.0 mm	Test Sieve	(%):	24
. 11					
nmary of soil	descriptions	•			
	2.00	2.00 Material	20.0	2.00 Material Retained on 20.0 mm Test Sieve	2.00 Material Retained on 20.0 mm Test Sieve (%):

		Checked By	Date 26/9/01	Approved By	Date 16/9/or
GEOTECHNICAL	BICESTER			Contra NL21	

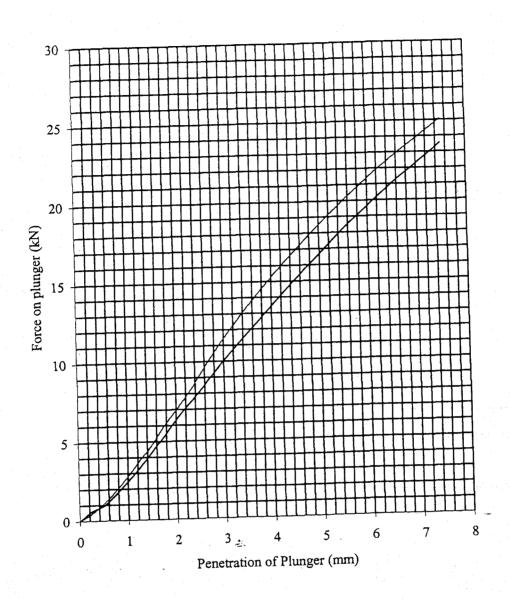
BS 1377: Part 4: 1990

Trial Pit Number

72

Depth (m):

0.60



		Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Initial Sample Condition				Final Moisture Con		C.B.R. Value %	·
Moisture Content:		Surcharge Kg:			6.2	Sample Top	83.5
Bulk Density Mg/m3:	2.02	Soaking Time hrs		Sample Top		Sample Bottom	92.4
Dry Density Mg/m3:	1.90	Swelling mm:		Sample Bottom	6.2	Sample Bottom	
Percentage retained or	20mm	Remarks:	See Su	ımmary of Soil De	escription.		
BS test sieve:	. 24	H					

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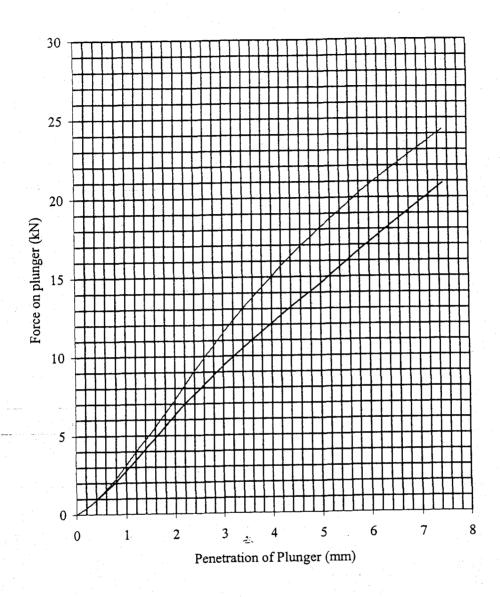
BS 1377 : Part 4 : 1990

Trial Pit Number

72

Depth (m):

0.60



Initial Sample Condition	ons	Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Moisture Content:	7.6	Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	. 0	Sample Top	7.5	Sample Top	72.9
Dry Density Mg/m3:	1.97	Swelling mm:		Sample Bottom	7.7	Sample Bottom	90.6
Percentage retained on			See Su	ımmary of Soil D	escription.		
BS test sieve:	24						<u> </u>

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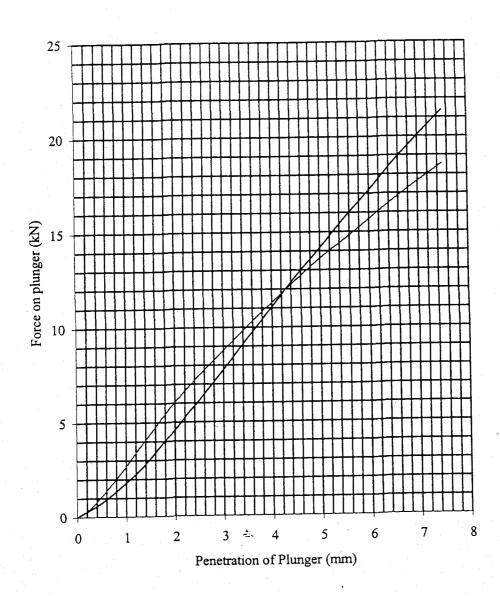
BS 1377: Part 4: 1990

Trial Pit Number

72

Depth (m):

0.60



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Initial Sample Condition	ons	Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Moisture Content:	11.1	Surcharge Kg:	4.000	Final Moisture Cor	ntent %	C.B.R. Value %	<u> </u>
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	11.1	Sample Top	70.8
	1.99	Swelling mm:		Sample Bottom	11.1	Sample Bottom	68.1
Dry Density Mg/m3: Percentage retained on		J		immary of Soil De	scription.		
BS test sieve:	24						

Checked by	Date	Approved By	Date
1 Cm	26/161	Ren	16/9/01



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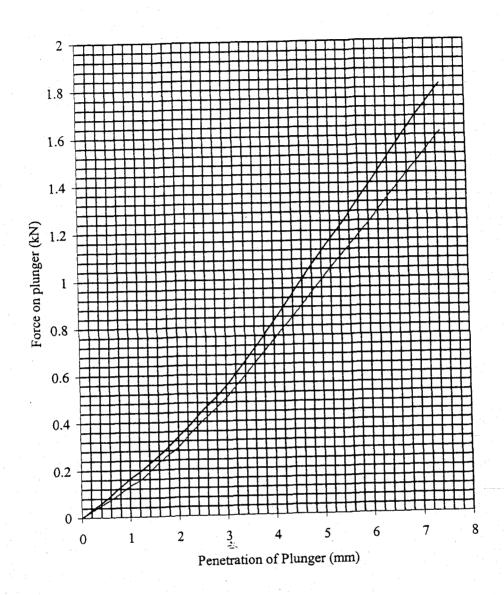
Contract No. NL211004

Trial Pit Number

72

Depth (m):

0.60



Test Conditions		Test Conditions	Method of compaction		tion	4.5 Kg Rammer	
Initial Sample Condition		Surcharge Kg:		Final Moisture Cor		C.B.R. Value %	
Moisture Content:				Sample Top	14.3	Sample Top	5.6
Bulk Density Mg/m3:		Soaking Time hrs		Sample Bottom	14.3	Sample Bottom	5.0
Dry Density Mg/m3: Percentage retained or	1.91 20mm	Swelling mm: Remarks:		immary of Soil De			
BS test sieve:	24						

Checked by	Date	Approved By	Date
1 Cm	26/9/01	Rle	26/9/01



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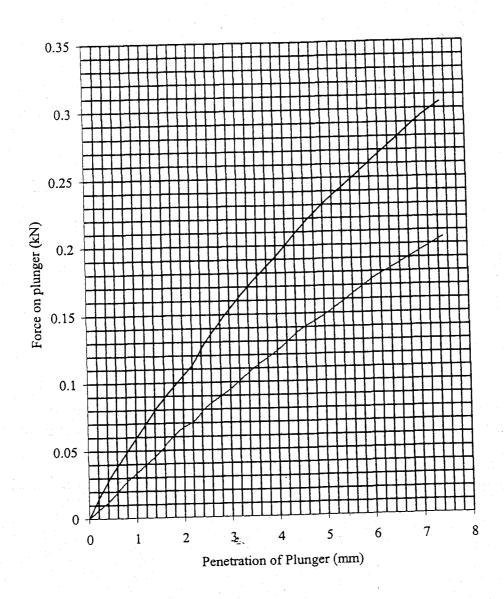
BS 1377: Part 4: 1990

Trial Pit Number

72

Depth (m):

0.60



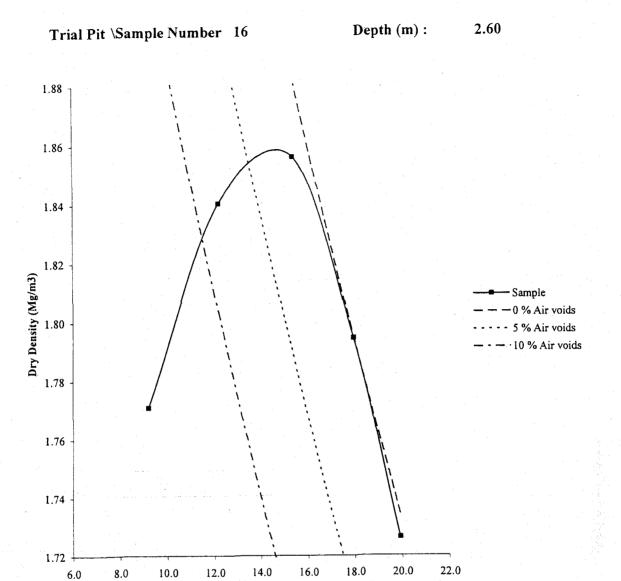
Initial Sample Conditions Test Conditions		 Method of compaction		4.5 Kg Rammer		
Initial Sample Condition		Surcharge Kg:	 Final Moisture Co		C.B.R. Value %	
Moisture Content:		Soaking Time hrs	 Sample Top	17.2	Sample Top	1.2
Bulk Density Mg/m3:		Swelling mm:	 Sample Bottom	17.2	Sample Bottom	0.7
Dry Density Mg/m3: Percentage retained on			 immary of Soil D	escription.		
BS test sieve:	24					

Checked by	Date	Approved By	Date
	26/9/9		26/9/4



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BS 1377 : Part 4 : 1990



Intial Moisture Content:		Method of Co	ompaction 4.5 Kg Rammer /	Separate	Sample	
Particle Density (Mg/m3):	2.65	Actuai	ual Material Retained on 37.5 mm Test Sieive (%):			
Maximum Dry Density (mg/m3):		1.86	Material Retained on 20.0 mm Test S	0		
Optimum Moisture Content (%):		15	Sample Preparation Clause :	3.2.6.	.1	
Remarks	See S	ummary of Soil	Description.			

Moisture Content (%)

		Checked By	Date 24/4/a	Approved By	Date 26/9 los
GEOTECHNICAL	BICES	TER.		1	act No. 11004

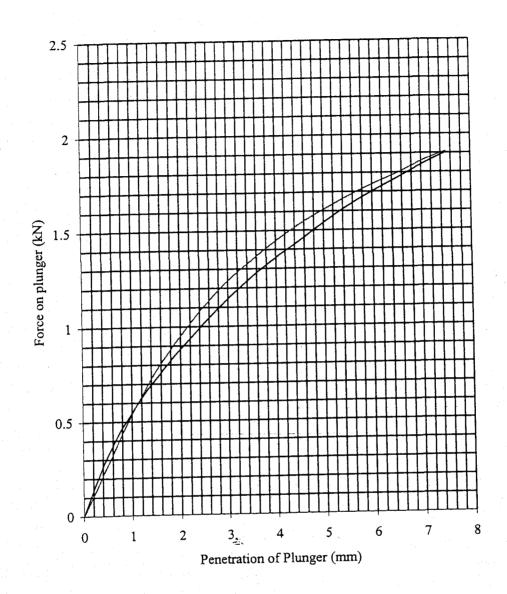
BS 1377 : Part 4 : 1990

Trial Pit Number

16

Depth (m):

2.60



Initial Sample Conditions Test Cond		Test Conditions	Conditions Method of compaction		4.5 Kg Rammer		
	18.0	Surcharge Kg:	4.000	Final Moisture Con	itent %	C.B.R. Value %	
Moisture Content:		Soaking Time hrs		Sample Top	17.4	Sample Top	7.7
Bulk Density Mg/m3:	1.79	Swelling mm:		Sample Bottom	19.0	Sample Bottom	8.4
Dry Density Mg/m3: Percentage retained on			See Su	ımmary of Soil De	scription.		
BS test sieve:	()			· .		

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BS 1377 : Part 4 : 1990

Depth (m):

16.0

14.0

12.0

10.0

Moisture Content (%)

8.0

4.0

2.0

18.0

0.70

Trial Pit \Sample Number 24 2.02 2.00 1.98 1.96 Dry Density (Mg/m3) 1.92 Sample 0 % Air voids 5 % Air voids - · 10 % Air voids 1.88 1.86

Intial Moisture Content:	13	Method of Co	ompaction 4.5 Kg Rammer /	Separate	Sample	
Particle Density (Mg/m3): 2.65 Maximum Dry Density (mg/m3): Optimum Moisture Content (%):		Measured	Material Retained on 37.5 mm Test Sieive (%): Material Retained on 20.0 mm Test Sieive (%):		32	
		2.01				
		10	Sample Preparation Clause :	Non-Star	ndard	
Remarks		Summary of Soil	Description.			

		Checked L Cu	By Date - 26/4/01	Approved By	Date 26/4/01
AA THYS	SEN	BICESTER.			ract No. 11004
CEOTECH	NRAL				

1.84

1.82

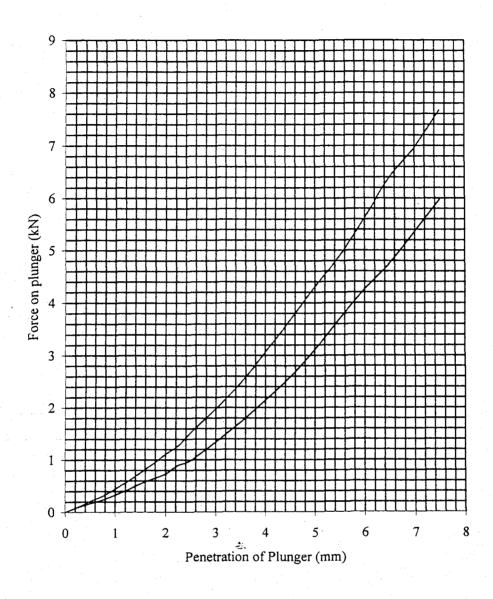
0.0

Trial Pit Number

24

Depth (m):

0.70



Initial Sample Condition	ons	Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Moisture Content:	12.9	Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:	2.21	Soaking Time hrs	0	Sample Top	12.5	Sample Top	15.5
Dry Density Mg/m3:	1.96	Swelling mm:	. 0	Sample Bottom	13.3	Sample Bottom	21.5
Percentage retained on	20mm	Remarks:	See Su	mmary of Soil De	escription.		
BS test sieve:	49						

Checked by	Date	Approved By	Date
R.C.	26/9/0	Ran	relator



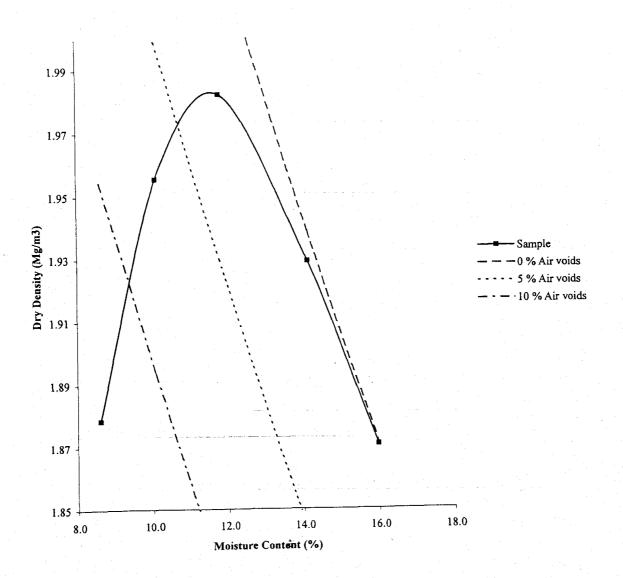
BICESTER.

Non - Compliance BS 1377: Part 4: 1990

Trial Pit \Sample Number 56

Depth (m):

0.70



Intial Moisture Content:	11	Method of C	ompaction 4.5 Kg Rammer /	Single	Sample
Particle Density (Mg/m3):	2.67	Actual	Material Retained on 37.5 mm Tes	t Sieive (%):	20
Maximum Dry Density (mg/m3):		1.98	Material Retained on 20.0 mm Test Sieive (%):		31
Optimum Moisture Content (%):		12	Sample Preparation Clause :	Non-Sta	andard
Remarks		Summary of Soi	Description.	1	

	 Checked By	1249/01	Reproved by Date 16/4/01
THYSSEN GEOTECHNICAL	BICESTER.		Contract No. NL211004

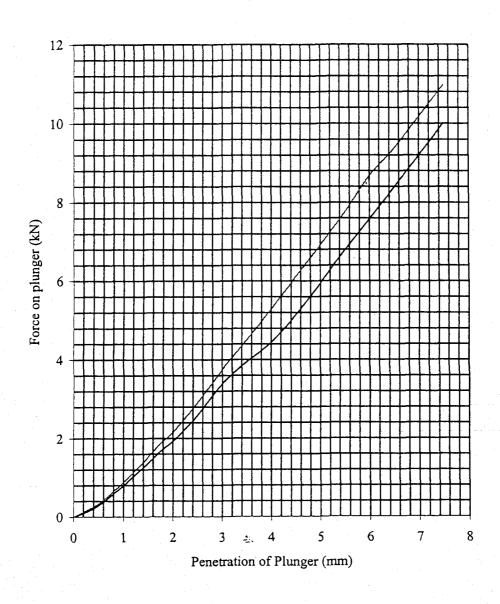
Non Compliance BS 1377: Part 4: 1990

Trial Pit Number

56

Depth (m):

0.70



Initial Sample Conditi	ons	Test Conditions		Method of compac	tion	4.5 Kg Rammer	· .
Moisture Content:	11.8	Surcharge Kg:	4.000	Final Moisture Co	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:	2.22	Soaking Time hrs	0	Sample Top	10.9	Sample Top	29.7
Dry Density Mg/m3:	1.98	Swelling mm:	0	Sample Bottom	12.1	Sample Bottom	34.6
Percentage retained on 20mm Remarks:			See Su	mmary of Soil De	escription.		
BS test sieve:	5 1						

Checked by	Date	Approved By	Date
1 Cm	26/4/61	Ren	26/9/01



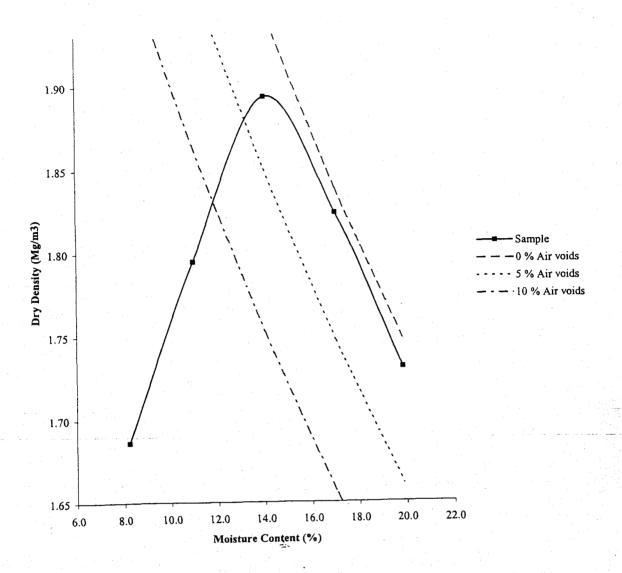
BICESTER.

BS 1377 : Part 4 : 1990

Trial Pit \Sample Number 74

Depth (m):

0.30



Intial Moisture Content:		Method of Co	ompaction 2.5 Kg Rammer /	Separate	Sample
Particle Density (Mg/m3):	2.68	Actual	Material Retained on 37.5 mm Test S	sieive (%):	0
Maximum Dry Density (mg/m3):		1.90	Material Retained on 20.0 mm Test S	Sieive (%):	0
Optimum Moisture Content (%):		14	Sample Preparation Clause :	3.2.6	.1
Remarks	See Su	mmary of Soil	Description.		

	Checked By Date	Approved By Date Rea 26/a/a;
THYSSEN GEOTECHNIKAL	BICESTER.	Contract No. NL211004

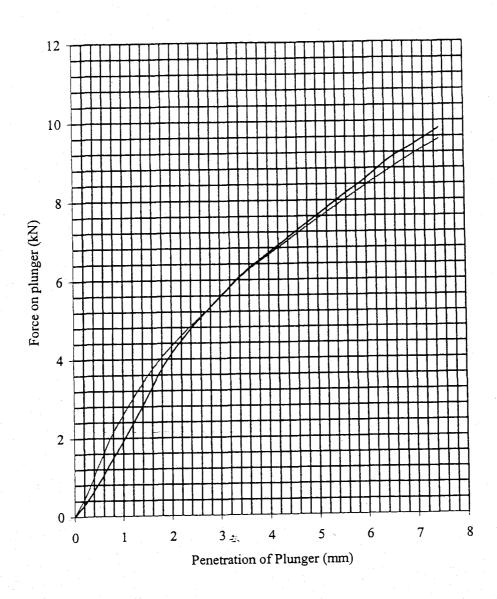
BS 1377: Part 4: 1990

Trial Pit Number

74

Depth (m):

0.30



Initial Sample Conditions		Test Conditions		Method of compaction		2.5 Kg Rammer	
Moisture Content:	10.9	Surcharge Kg:	4.000	Final Moisture Cor	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	0	Sample Top	10.9	Sample Top	38.1
Dry Density Mg/m3:		Swelling mm:		Sample Bottom	11.7	Sample Bottom	37.6
Percentage retained on		Remarks:	See Su	mmary of Soil De	escription.		
BS test sieve:	0						

Checked by	Date	Approved By	Date
R.C.	26/9/0	Ren	26/a ko



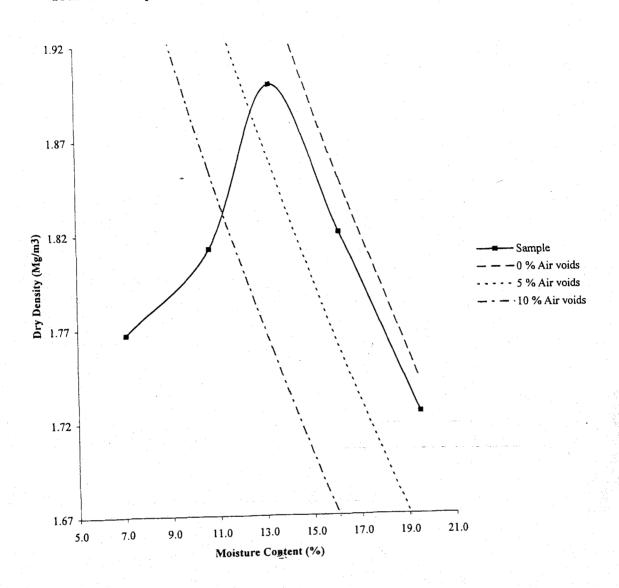
BICESTER.

Non - Compliance BS 1377 : Part 4 : 1990

Trial Pit \Sample Number 84

Depth (m):

1.50



Contont:	15	Method of Co	ompaction 2.5 Kg Rammer /	Single _	Sample
ntial Moisture Content:	2.64	Actual	Material Retained on 37.5 mm Test	Sieive (%):	54
Particle Density (Mg/m3):		1.90	Material Retained on 20.0 mm Test		14
Maximum Dry Density (mg/m3): Optimum Moisture Content (%):		13	Sample Preparation Clause:	Non-Standard	
Remarks	See S	ummary of Soil	Description.		

	Checked By Date Real 24961	Approved By Date ROw 26/9/01
GEOTECHNICAL	BICESTER.	Contract No. NL211004

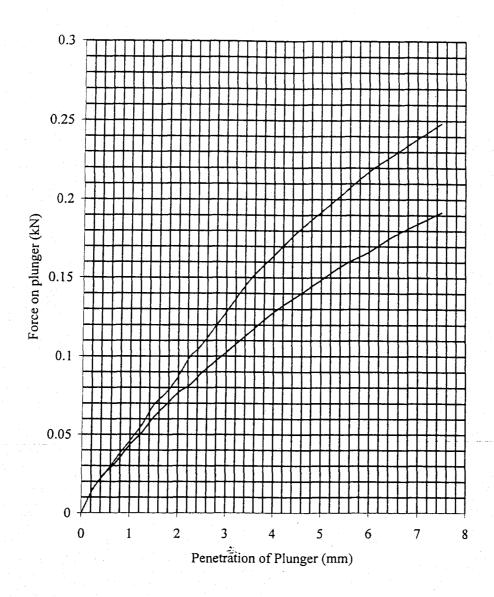
California Bearing Ratio Test. BS 1377: Part 4: 1990

Trial Pit Number

84

Depth (m):

1.50



Initial Sample Conditions Test Conditions		Method of compaction		2.5 Kg Rammer			
Moisture Content:	15.5	Surcharge Kg:	4.000	.000 Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3	2.15	Soaking Time hrs	0	Sample Top	19.9	Sample Top	0.7
Dry Density Mg/m3:	1.86	Swelling mm:	0	Sample Bottom	15.2	Sample Bottom	1.0
Percentage retained on BS test sieve:	20mm 14	Remarks:	See Su	mmary of Soil De	scription.		

Checked by	Date	Approved By	Date
Rlin	26/9/01	Rlin	26/9/01



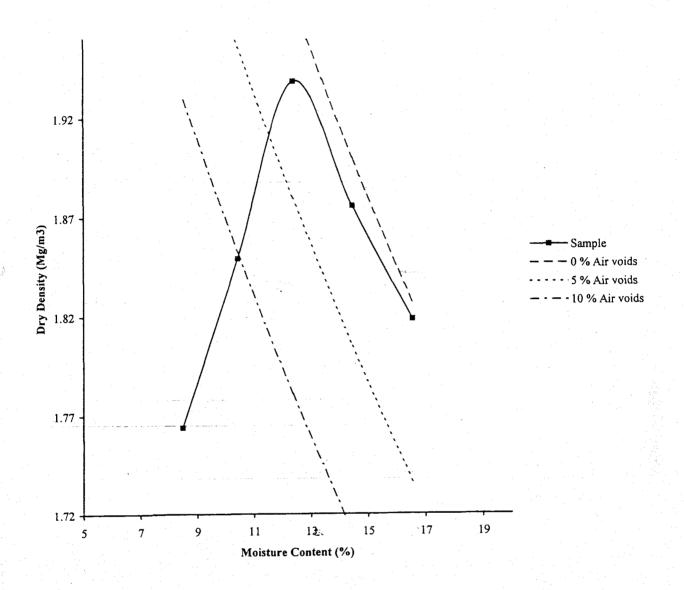
BICESTER.

BS 1377: Part 4: 1990

Trial Pit /Sample Number: 89

Depth (m):

0.90



37.5 mm Test Sieve (%):	Λ
20.0 mm Test Sieve (%):	0
20.0 11111	1050 510 10 (70).

	Checked By	Date	Approved By	Date
	Rlu	16/9/01	1 Cm	26/9/01
BICESTER. BICESTER.			Contra NL2	act No. 11004

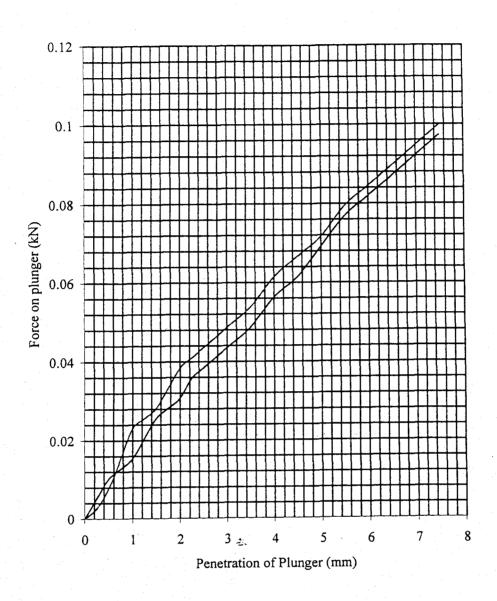
BS 1377 : Part 4 : 1990

Trial Pit Number

89

Depth (m):

0.90



Initial Sample Conditions		Test Conditions		Method of compaction		2.5 Kg Rammer	
Moisture Content:	18.4	Surcharge Kg:	4.000	Final Moisture Con	ntent %	C.B.R. Value %	<u> </u>
Bulk Density Mg/m3	2.06	Soaking Time hrs	0	Sample Top	18.4	Sample Top	0.3
Dry Density Mg/m3:	1.74	Swelling mm:	0	Sample Bottom	18.4	Sample Bottom	0.4
Percentage retained on	20mm	Remarks:	See Su	ımmary of Soil De	escription.	The state of the s	
BS test sieve:	(

Checked by	Date	Approved By	Date
Ran	26/9/01	Rlu	26/9/01



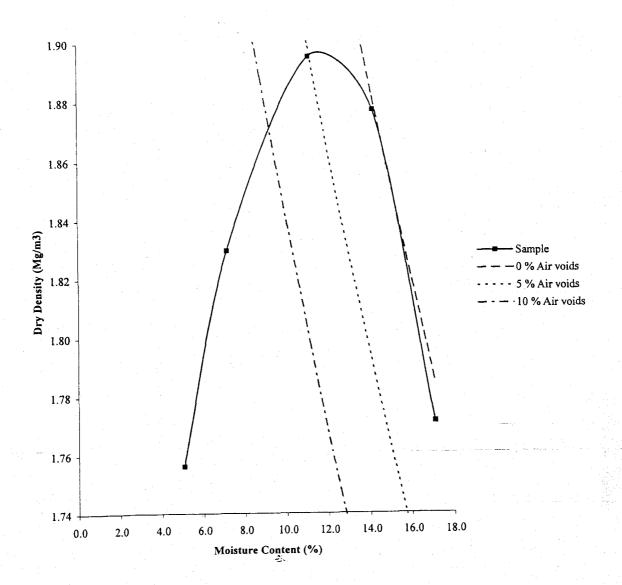
BICESTER.

Non - Compliance BS 1377: Part 4: 1990

Trial Pit \Sample Number 35

Depth (m):

0.50

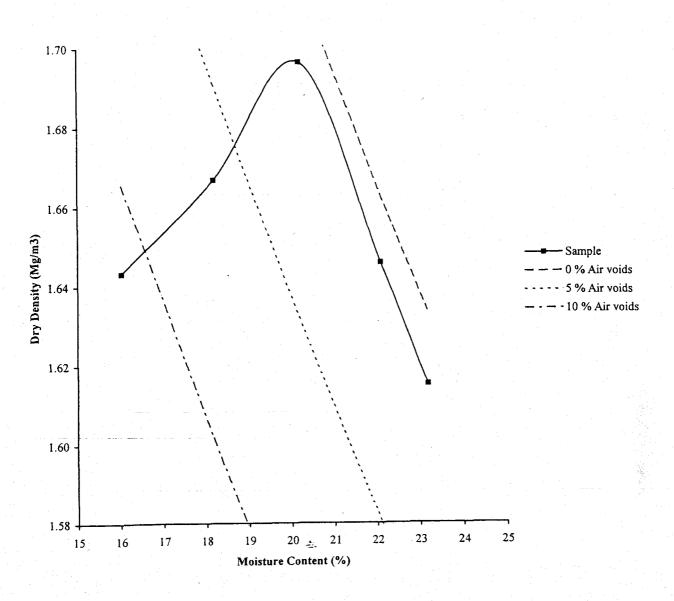


Intial Moisture Content:	11	Method of C	ompaction 4.5 Kg Rammer /	Single	Sample
Particle Density (Mg/m3):	2.57	Actual	Material Retained on 37.5 mm Test	Sieive (%):	25
Maximum Dry Density (mg/m3)		1.90	Material Retained on 20.0 mm Test	14	
Optimum Moisture Content (%):			Sample Preparation Clause :	Non-Sta	andard
Remarks		ummary of Soi	Description.		

	Checked L Cu	By Date	Approved By	Date 16/9/01
THYSSEN GEOTECHNICAL	BICESTER.		1	ract No. 11004

BS 1377: Part 4: 1990

Trial Pit /Sample Number: 73 Depth (m): 0.40

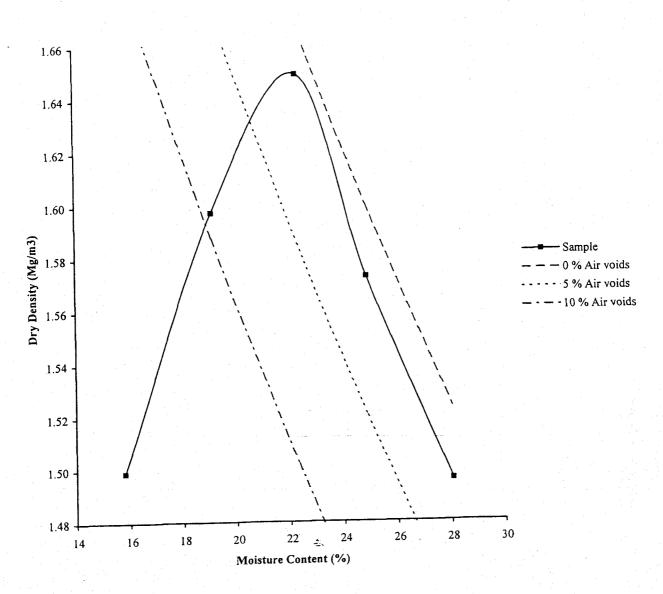


Initial Moisture Content:	18	Method of C	ompaction	2.5 Kg Rammer	/ Separate	Sample
Particle Density (Mg/m3):	Actual	Material Retained on 37.5 mm Test Sieve (%):				
Maximum Dry Density (mg/m.	3):	1.70	Material	Retained on 20.0 m	m Test Sieve (%):	1
Optimum Moisture Content (%		20			<u> </u>	
Remarks	See s	summary of soil	descriptions			

		Checked By	Date	Approved By	Date 26/9/01
AA THYSSEN	BICESTER			Contra	
GEOTECHNICAL				NL21	1004

BS 1377: Part 4: 1990

Trial Pit /Sample Number: 73 Depth (m): 0.80



Initial Moisture Content:	19	Method of C	ompaction	2.5 Kg Rammer	1	Separate	Sample	
	2.66	Measured	Material	Retained on 37.5 m	m Test Siev	e (%):	0	
Particle Density (Mg/m3): Maximum Dry Density (mg/m3):	2.00	1.65	Material	Retained on 20.0 mm Test Sieve (%):		e (%):	0	
Optimum Moisture Content (%):		22						
Remarks	See	summary of soil	descriptions					

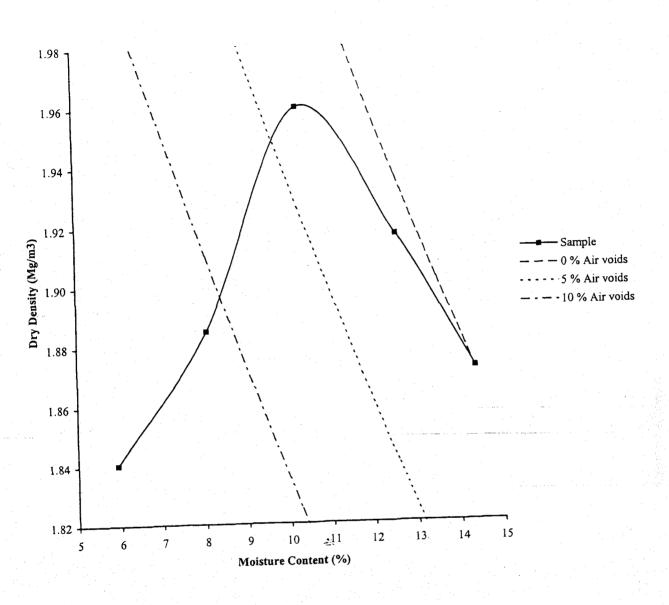
		Checked By	Date 24/9/6	Approved By	Date 26/4/01
TYSSEN	BICESTER			Contra NL21	

Non Compliance BS 1377: Part 4: 1990

Trial Pit /Sample Number: 79

Depth (m):

0.50

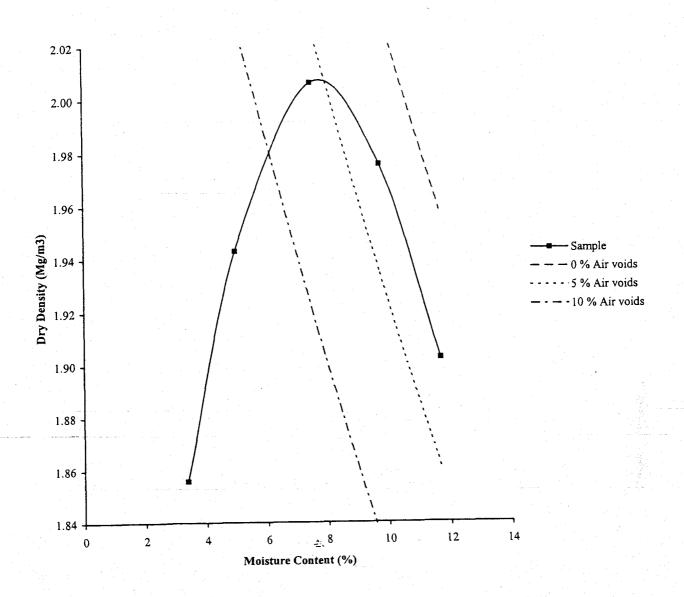


	13	Method of Co	mpaction	4.5 Kg Rammer /	Separate	Sample
nitial Moisture Content:	1.5		Material	Retained on 37.5 mm Test Siev	/e (%):	0
Particle Density (Mg/m3):	2.56	Measured		Retained on 20.0 mm Test Sie		- 34
Maximum Dry Density (mg/m3):		1.96	Material	Retained on 20.0 han 1000 010		<u></u>
Optimum Moisture Content (%):	****	10	<u></u>			
Remarks	See s	ummary of soil d	lescriptions			

	Checked By	Date 26/4/01	Approved By	Date 16/9/01
GEOTECHNICAL BIC	CESTER.		Contra NL21	

Non Compliance BS 1377 : Part 4: 1990

Trial Pit /Sample Number: 79 Depth (m): 0.90



Optimum Moisture Content (%): Remarks		See summary of soil descriptions.					
Maximum Dry Density (mg/m3):	2.01	Material Retained on 20.0 mm Test Sieve (%):				10	
Particle Density (Mg/m3):	2.54						22
Initial Moisture Content:	10	Method of C		4.5 Kg Rammer	/	Separate	

				Checked By	Date 26/9/01	Approved By	Date 26/9/01
THYSSE GEOTECHNIC	N		BICESTER	•		Contra NL21	1 1

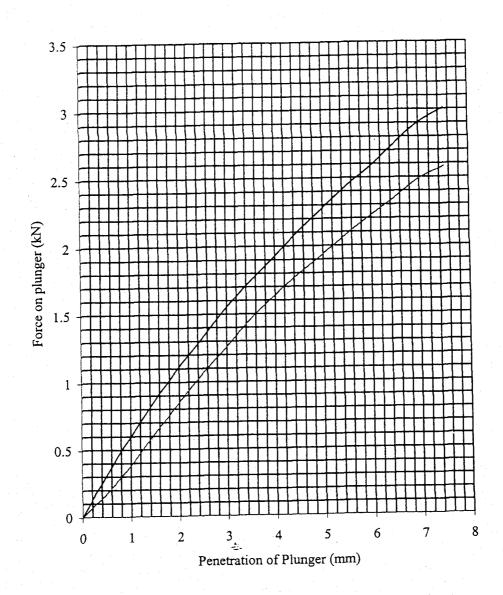
BS 1377: Part 4: 1990

Trial Pit Number

63A

Depth (m):

0.50



Initial Sample Condition	ons	Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Moisture Content:		Surcharge Kg:	4.000	Final Moisture Con	ntent %	C.B.R. Value %	
Bulk Density Mg/m3:		Soaking Time hrs	. 0	Sample Top	18.7	Sample Top	11.4
Dry Density Mg/m3:	1.73	Swelling mm:	0	Sample Bottom	19.4	Sample Bottom	9.7
Percentage retained on			See St	ımmary of Soil De	escription.		
BS test sieve:		7	٠.				

1	Checked by	Date	Approved By	Date
	R Cm	26 kg/kg	R Com	26/9/01



BICESTER.

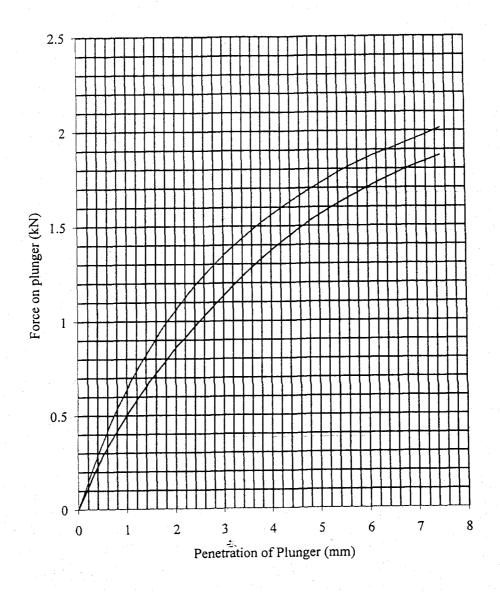
BS 1377 : Part 4 : 1990

Trial Pit Number

67

Depth (m):

0.50



Initial Sample Conditions		Test Conditions		Method of compaction		2.5 Kg Rammer	
Moisture Content:	18.7	Surcharge Kg:	4.000	Final Moisture Con	tent %	C.B.R. Value %	
Bulk Density Mg/m3:	2.03	Soaking Time hrs	0	Sample Top	19.5	Sample Top	7.8
Dry Density Mg/m3:	1.71	Swelling mm:	0	Sample Bottom	19.8	Sample Bottom	9.2
Percentage retained or	20mm	Remarks:	See Su	ımmary of Soil De	scription.		
BS test sieve:	C						

Checked by	Date	Approved By	Date
R. Cu	26/9/01	Klin	26/96.



BICESTER.

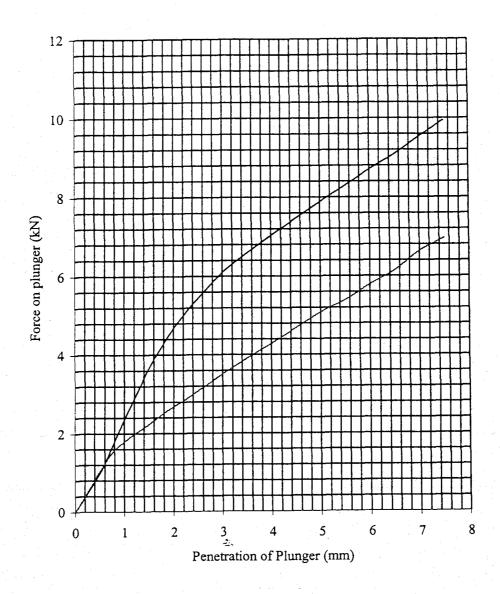
BS 1377: Part 4: 1990

Trial Pit Number

82

Depth (m):

0.30



nitial Sample Conditions		Test Conditions		Method of compac	tion	4.5 Kg Rammer			
Moisture Content:		Surcharge Kg: 4.000 Final Moisture Content %				C.B.R. Value %			
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Top	7.6	Sample Top	41.2		
Dry Density Mg/m3:	1.92	Swelling mm:	0	Sample Bottom	9.8	Sample Bottom	25.4		
Bry Bensity ing ing		Remarks:	See Su	ımmary of Soil De	escription.				
BS test sieve:	21								

Checked by	Date	Approved By	Date
R Cu	24/9/01	Rlu	26/9/01



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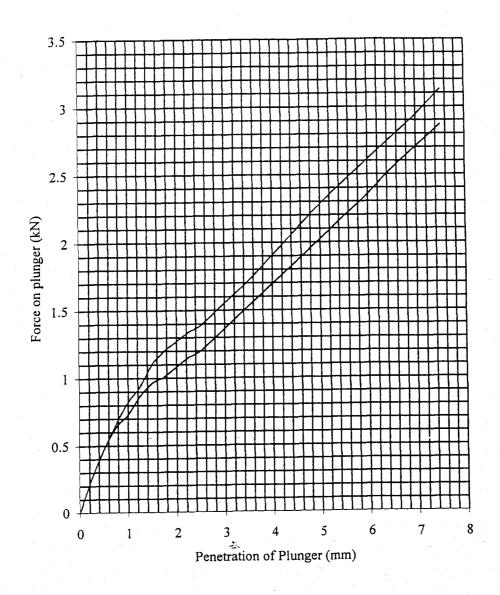
BS 1377 : Part 4 : 1990

Trial Pit Number

86

Depth (m):

0.50



Initial Sample Conditions		Test Conditions		Method of compac	tion	4.5 Kg Rammer	
Moisture Content:		Surcharge Kg:	4.000 Final Moisture Content %		C.B.R. Value %		
Bulk Density Mg/m3		Soaking Time hrs	0	Sample Top	26.3	Sample Top	10.1
Dry Density Mg/m3:	1.58	Swelling mm:		Sample Bottom	25.3	Sample Bottom	11.4
Percentage retained on	20mm	Remarks:	See Su	mmary of Soil De	escription.		
BS test sieve:							

Checked by	Date	Approved By	Date
RCu	25 kilo	Ren	26/4/01



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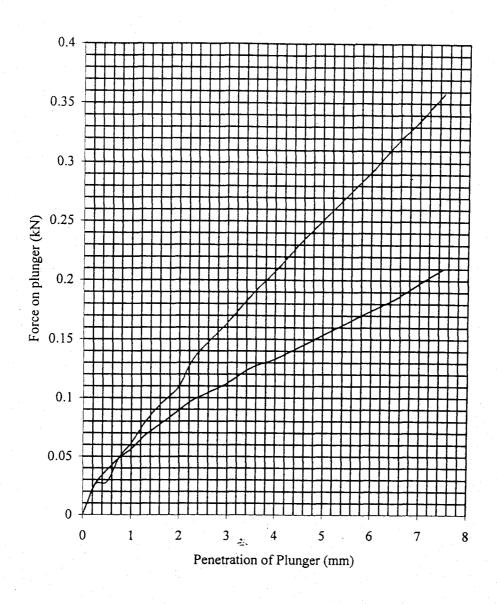
BS 1377: Part 4: 1990

Trial Pit Number

89B

Depth (m):

0.70



Initial Sample Conditions		Test Conditions	<u> </u>	Method of compa	ection	4.5 Kg Rammer			
Moisture Content:	30.3	Surcharge Kg:	4.000	Final Moisture C	ontent %	C.B.R. Value %			
Bulk Density Mg/m3	1.86	Soaking Time hrs	0	Sample Top	33.4	Sample Top	0.8		
Dry Density Mg/m3:	1.43	Swelling mm:	. 0	Sample Bottom	31.6	Sample Bottom	1.3		
Percentage retained on BS test sieve:	20mm 4	Remarks:	See Su	mmary of Soil D	escription.				

Checked by	Date	Approved By	Date
1 Cm	26/9/0	R Con	26/4/61



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BICESTER

Summary of Chemical Analyses BS 1377: Part 3: 1990

					1								
Borehole	Depth	Sample	Sample	Laboratory	Test 3	Test 4		Test 5.5		Test 6.3	Test	7.2/7.3	Test 9
or	(m)	Number	Type	Reference	Organic	Loss on	Sulphate Content	Sulphate Content	Sulphate Content	Carbonate	Chloride Co	ontent (as CI)	рН
Trial Pit				Number	Content	Ignition	Soil	2:1 Water:Soil extract	Groundwater	Content (as CO ₂)	Soil	Groundwater	Value
							SO ₃ (SO ₄)	SO ₃ (SO ₄)	SO ₃ (SO ₄)	*			
					% Dry mass	% Dry mass	% Dry mass	g/i	g/l	% Dry mass	% Dry mass	g/i	
					4 5 5 4								
BH 1	2.00		D D	03085/1	3.0			0.43 (0.52)				i	7.9
BH 2	1.00		D	03085/2	5.2			0.64 (0.77)					7.2
BH 1	1.00		В	03085/3				0.15 (0.18)					8.0
BH 2	1.00		В .	03085/4		4.		0.23 (0.28)	**************************************				7.8
TH 3	2.40		D	03085/5		j +		0.07 (0.08)					8.2
TP 1A	0.50		В	03085/6				0.06 (0.07)					8.1
TP 21	0.25		В	03085/7				0.03 (0.04)					8.2
TP 27	0.30		В	03085/8				0.12 (0.14)					8.2
TP 79A	0.40		В	03085/9				0.02 (0.02)					8.5
TP 79B	0.50		В	03085/10				0.05 (0.06)					8.5
TP 83	0.40		В	03085/11	5.2			0.16 (0.19)					8.4
TP 84	1.00		В	03085/12	1,5			0.05 (0.06)					8.4
TP 89A	0.50		В	03085/13				0.12 (0.14)					8.3
TP 89A	0.70		В	03085/14				0.13 (0.16)					8.2
11 001	00		_										

Approved By: RC.
Date: 18/7/01

Client Reference: NL211004 Laboratory Reference: 03085



What's so special about a UKAS report or certificate?

Accreditation of testing is granted by the United Kingdom Accreditation Service (UKAS).

It's your assurance that the work has been carried out to the highest standards.

The laboratory issuing the test report has been stringently assessed by independent experts.

You are assured that the agreed or specified methods and procedures have been followed.

Measurements are traceable to national and international standards.

Comments:

Tests marked † in this report are not included in the UKAS Accreditation Schedule for the testing laboratory. However, with the continuing development of our QC protocols, these tests will be included in the near

Any opinions and interpretations expressed herein are outside the scope of the testing laboratory's UKAS Accreditation.

The Coefficient of Variation CV_T (where CV_T = standard deviation/mean*100)

is better than 15%

All analysis carried out using ECoS standard methods unless otherwise agreed The test results in this report refer only to the actual samples on which testing has been performed.

This test report shall not be reproduced, except in full, without written

approval of ECoS Environmental.

Date submitted for analysis : 06/09/01

Your Job/Order Number: 410511/32561

Analyst(s) : NB NSP SD JS SJF DF MRH ELD DS SPA

Approved signatories: J R Brown, E Dewell

Signature

Report date: 20 September 2001

QA APPRO Signed....

SOIL

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
Arsenic	ICP-OES ICP-OES	1.0 mg/kg 0.2 mg/kg
Cadmium	ICP-OES	0.2 mg/kg
Chromium (total)	ICP-OES	0.5 mg/kg
Lead	ICP-OES	1.0 mg/kg
Mercury	ICP-OES	1.0 mg/kg
Selenium Boron (water soluble)	Colorimetry	0.5 mg/kg
Copper	ICP-OES	0.2 mg/kg
Nickel	ICP-OES	0.2 mg/kg
Zinc	ICP-OES	0.2 mg/kg 10 mg/kg
PAH (total)	HPLC-UV	1.0 mg/kg
Phenols	Colorimetry	2.0 mg/kg
Cyanide (total)	HPLC-PED Colorimetry	10 mg/kg
Thiocyanate	ICP-OES	30 mg/kg
Sulphate (total)	HPLC-PED	2.0 mg/kg
Sulphide	ICP-OES	10 mg/kg
Sulphur (total)	Aqualyser	N/A
pH Arsenic (leachable)	AAS-HYDRIDE	1.0 ug/l
Cadmium (leachable)	GF-AAS	0.1 ug/l
Chromium (leachable)	ICP-OES	0.01 mg/l 0.03 mg/l
Lead (leachable)	ICP-OES	0.03 mg/1 0.1 ug/1
Mercury (leachable)	AAS-HYDRIDE	1.0 ug/l
Selenium (leachable)	AAS-HYDRIDE ICP-OES	0.01 mg/l
Boron (leachable)	ICP-OES	0.01 mg/l
Coppet (reachanie)	ICP-OES	0.01 mg/l
Nickel (leachable)	ICP-0ES	0.01 mg/l
Zinc (leachable) PAH (total) (leachable)	GC-FID	0.01 mg/l
Dhanale (leachable)	Colorimetry	0.01 mg/l
Cvanide (total) (leachable)	Colorimetry	0.01 mg/l 1.0 mg/l
Thiocyanate (leachable)	COTOTTIMEST	1.0 mg/l
Sulphate (leachable)	HPLC-IC HPLC-UV	10 mg/1
Sulphur (leachable)	Colorimetry	0.1 mg/l
Sulphide (leachable)	Aqualyser	N/A
pH (leachable)	GC-FID	0.1 mg/kg
DRO a-HCH	GC-MS	0.1 mg/kg
b-HCH	GC-MS	0.1 mg/kg 0.1 mg/kg
g-HCH (lindane)	GC-MS	0.1 mg/kg 0.1 mg/kg
d-HCH	GC-MS	0.1 mg/kg
a-Chlordane	GC-MS GC-MS	0.1 mg/kg
g-Chlordane	GC-MS	0.1 mg/kg
4,4'-DDD	GC-MS	0.1 mg/kg
4,4'-DDE 4,4'-DDT	GC-MS	0.1 mg/kg
Aldrin	GC-MS	0.1 mg/kg
Dieldrin	GC-MS	0.1 mg/kg 0.1 mg/kg
Endosulfan I	GC-MS	0.1 mg/kg
Endosulfan II	GC-MS	0.1 mg/kg
Endosulfan Sulfate	GC-MS GC-MS	0.1 mg/kg
Endrin	GC-MS	0.1 mg/kg
Endrin aldehyde	GC-MS	0.1 mg/kg
Endrin ketone	GC-MS	0.1 mg/kg
Heptachlor Heptachlor epoxide	GC-MS	0.1 mg/kg
Hexachlorobenzene	GC-MS	0.1 mg/kg
Hexachlorocyclopentadiene	GC-MS	0.1 mg/kg

SOIL

ANALYTES	UNITS	TT1 (0.50m)	TT2 (0.50m)	TT2 (1.00m)	TT3 (1.00m)	BH1 (3.00m)	BH2 (2.60m)	TP1 (0.10m)	TP2 (0.30m)	TP4 (0.30m)	TP6 (0.10m)	TP7 (0.10m)	TP8 (0.70m)	
		S0127797	S0127799	S0127800	S0127801	S0127802	S0127803	S0127804	S0127805	S0127806	S0127807	S0127808	S0127809	
Arsenic	mg/kg	68.5	122.8	77.8	87.7	4.4	14.0	16.1	18.8	15.8	18.1	16.2	5.8	
Cadmium	mg/kg	3.1	2.2	2.7	5.2	0.6	1.0	0.4	0.7	0.6	0.5	0.4	0.3	
Chromium (total)	mg/kg	87.7	55.8	58.5	55.5	11.2	12.2	31.7	19.7	19.1	24.2	25.8	9.7	
Lead	mg/kg	701.0	1227.0	749.5	1332.5	17.0	64.7	48.8	0.6	14.8	82.2	14.1	0.8	1
Mercury	mg/kg	<1.0	1.5	<1.0	2.8	1.5	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Selenium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Boron (water soluble)	mg/kg	1.9	1.3	1.5	1.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Copper	mg/kg	363.3	420.6	363.5	327.2	2.0	22.2	23.2	3.3	13.6	23.2	13.7	<0.2	
Nickel	mg/kg	106.0	169.8	131.7	173.0	10.4	19.7	34.0	33.4	29.5	31.7	25.9	11.0	
Zinc	mg/kg	2967.0	1660.7	1737.7	1679.7	61.8	266.7	109.1	35.3	75.5	106.6	67.4	35.4	1
PAH (total)	mg/kg	22	<10	- 28	<10	<10	<10	<10	<10	<10	<10	<10	<10	t
Phenols	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Cyanide (total)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Thiocyanate	mg/kg	<10	<10	<10	<10	<10	<10	<10	#	#	#	#	#	
Sulphate (total)	mg/kg	4974	6069	4960	3532	594	1144	972	1134	1228	1197	1027	890	
Sulphide	mg/kg	9.9	8.0	8.1	12.9	2.2	34.8	<2.0	#	#	#	#	#	
Sulphur (total)	mg/kg	1990	2839	2425	2086	248	533	487	#	#	#	#	#	
рН	N/A	7.3	7.5	7.4	7.5	8.1	8.0	7.7	8.2	7.8	7.6	7.7	8.2	ļŧ
Arsenic (leachable)	ug/1	2.1	3.1	1.6	2.0	#	#	<1.0	#	#	#	#	#	
Cadmium (leachable)	ug/1	<0.1	<0.1	<0.1	<0.1	#	#	<0.1	#	#	#	#	#	

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate

^{# :} Analyte not requested

ANALYTES	UNITS	TT1 (0.50m)	TT2 (0.50m)	TT2 (1.00m)	TT3 (1.00m)	BH1 (3.00m)	BH2 (2.60m)	TP1 (0.10m)	TP2 (0.30m)	TP4 (0.30m)	TP6 (0.10m)	TP7 (0.10m)	TP8 (0.70m)
		S0127797	S0127799	S0127800	50127801	S0127802	S0127803	S0127804	S0127805	S0127806	S0127807	S0127808	S0127809
Chromium (leachable)	mg/l	0.01	<0.01	<0.01	<0.01	#	#	<0.01	#	#	#	#	#
Lead (leachable)	mg/l	<0.03	<0.03	<0.03	<0.03	#	#	<0.03	#	#	#	#	#
Mercury (leachable)	ug/l	<0.1	<0.1	<0.1	<0.1	#	#	<0.1	#	#	#	#	#
Selenium (leachable)	ug/1	1.2	<1.0	<1.0	<1.0	#	#	<1.0	#	#	#	#	#
Boron (leachable)	mg/l	0.09	0.11	0.11	0.18	#	#	0.01	#	#	#	#	#
Copper (leachable)	mg/l	<0.01	<0.01	<0.01	<0.01	#	#	<0.01	#	#	#	#	#
Nickel (leachable)	mg/l	0.03	<0.01	<0.01	<0.01	#	#	<0.01	#	#	#	#	#
Zinc (leachable)	mg/l	0.10	0.12	[}] <0.01	<0.01	#	#	<0.01	#	#	#	#	#
PAH (total) (leachable)	mg/l	<0.01	<0.01	<0.01	<0.01	#	#	<0.01	#	#	#	#	#
Phenols (leachable)	mg/l	0.01	<0.01	0.02	<0.01	#	#	<0.01	#	#	#	#	#
Cyanide (total) (leachable)	mg/l	<0.01	<0.01	<0.01	<0.01	#	#	<0.01	#	#	#	#	#
Thiocyanate (leachable)	mg/l	<1.0	<1.0	<1.0	<1.0	#	#	<1.0	#	#	#	#	#
Sulphate (leachable)	mg/l	12	8	12	20	#	#	<1	#	#	#	#	#
Sulphur (leachable)	mg/l	<10	<10	<10	<10	#	#	<10	#	#	#	#	#
Sulphide (leachable)	mg/l	<0.1	<0.1	<0.1	<0.1	#	#	<0.1	#	#	#	#	#
pH (leachable)	N/A	6.7	7.4	7.6	7.7	#	#	7.4	#	#	#	#	#
DRO	mg/kg	31.2	#	54.0	#	#	#	#	#	#	#	#	#
а-НСН	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#
b-HCH	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#
g-HCH (lindane)	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#

Results for soil samples expressed as dry weight
Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate

^{# :} Analyte not requested

ANALYTES	UNITS	TT1 (0.50m)	TT2 (0.50m)	TT2 (1.00m)	TT3 (1.00m)	BH1 (3.00m)	BH2 (2.60m)	TP1 (0.10m)	TP2 (0.30m)	TP4 (0.30m)	TP6 (0.10m)	TP7 (0.10m)	TP8 (0.70m)	
		S0127797	S0127799	S0127800	S0127801	S0127802	S0127803	S0127804	S0127805	S0127806	S0127807	S0127808	S0127809	
d-HCH	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
a-Chlordane	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
g-Chlordane	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
4,4'-DDD	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	ļ†
4,4'-DDE	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	
4,4'-DDT	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	ļ†
Aldrin	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	f
Dieldrin	mg/kg	<0.1	#)}r #	#	#	#	#	#	#	<0.1	#	#]†
Endosulfan I	mg/kg	<0.1	#	#	#	#	#	.#	# #	#	<0.1	#	#]t
Endosulfan II	mg/kg	<0.1	.#	#	#	#	#	#	#	#	<0.1	#	#]†
Endosulfan Sulfate	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#]†
Endrin	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
Endrin aldehyde	mg/kg	<0.1	#	#	* #	#	#	#	#	#	<0.1	#	#	_ t
Endrin ketone	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	<u> </u> †
Heptachlor	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	<u> </u> †
Heptachlor epoxide	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	+ # ,	#	_ t
Hexachlorobenzene	mg/kg	<0.1	#	#	#	#	#	#	# ,	#	<0.1	#	#	_ t
Hexachlorocyclopentadiene	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	1
Methoxychlor	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	_ †
Fenthion	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	_]1

Results for soil samples expressed as dry weight # : Analyte not requested

ANALYTES	UNITS	TT1 (0.50m)	TT2 (0.50m)	TT2 (1.00m)	TT3 (1.00m)	BH1 (3.00m)	BH2 (2.60m)	TP1 (0.10m)	TP2 (0.30m)	TP4 (0.30m)	TP6 (0.10m)	TP7 (0.10m)	TP8 (0.70m)	
		S0127797	S0127799	S0127800	S0127801	S0127802	S0127803	S0127804	S0127805	S0127806	\$0127807	S0127808	S0127809	
Fenitrothion	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0,1	#	#	t
Malathion	mg/kg	<0.1	#	#	#	#	#	#	* #	#	<0.1	#	#	†
Parathion-ethyl	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
Dichlorvos	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	†
Permethrin	mg/kg	<0.1	#	# .	#	#	#	#	#	#	<0.1	#	#	t
Simazine	mg/kg	<0.1	#	#	#	#	#	#	# .	#	<0.1	#	# .	t
Atrazine	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	1
Azinphos-methyl	mg/kg	<0.1	#	j. #	#	#	#	#	. #	#	<0.1	#	#	t
Azinphos-ethyl	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	 †
Trifluralin	mg/kg	<0.1	#	#	#	#	· #	#	.#	#	<0.1	#	#	1
Alachlor	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
cis-Nonachlor	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	1 †
trans-Nonachlor	mg/kg	<0.1	#	#	#	#	#	# .	#	#	<0.1	#	#	t
Chlorobenzilate	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
Chlorothalonil	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
Dacthal	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	t
Etridiazole	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	1 †
Chloroneb	mg/kg	<0.1	#	#	#	#	#	# .	#	#	<0.1	#	#]t
Propachlor	mg/kg	<0.1	#	#	#	#	#	#	#	#	<0.1	#	#	1
Bentazone	mg/kg	<0.1	.#	#	#	#	#	#	#	#	<0.1	#	#	†

Results for soil samples expressed as dry weight # : Analyte not requested

Summary Of Results Pell Frischmann Consultants Ltd. - Bicester

ANALYTES	UNITS	TP13 (0.00 - 0.20m)	TP14 (0.10m)	TP14A (0.10m)	TP14A (1.80m)	TP15A (0.40m)	TP17 (0.20m)	TP19 (0.00 - 0.25m)	TP22 (0.10m)	TP24 (0.10m)	TP28 (0.00 - 0.23m)	TP30 (0.00 - 0.20m)	TP32 (0.50m)
		50127810	S0127811	S0127812	S0127813	S0127814	S0127815	S0127816	S0127817	S0127820	S0127821	S0127822	S0127823
Arsenic	mg/kg	13.7	18.1	21.7	32.5	23.2	25.7	32.7	20.9	19.8	11.7	11.2	17.7
Cadmium	mg/kg	0.4	0.7	0.7	0.5	0.3	0.7	0.3	0.8	0.4	0.6	0.3	0.7
Chromium (total)	mg/kg	42.1	32.9	35.8	11.0	20.1	34.1	44.4	26.5	34.8	42.1	29.9	13.2
Lead	mg/kg	15.4	45.4	42.6	10.0	7.4	30.7	40.2	24.4	13.5	4.2	6.7	<0.5
Mercury	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
Selenium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (water soluble)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Copper	mg/kg	23.8	20.1	25.6	25.0	18.3	27.0	27.0	15.8	16.3	16.5	13.4	0.5
Nickel	mg/kg	30.3	33.9	39.0	49.0	45.6	41.1	44.2	35.6	34.6	26.0	16.4	28.8
Zinc	mg/kg	97.7	85.2	92.9	40.3	56.6	106.0	101.6	64.6	80.4	86.9	70.9	23.3
PAH (total)	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pheno1s	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyanide (total)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sulphate (total)	mg/kg	770	1087	1263	486	687	1295	981	907	685	773	418	827
pH	N/A	7.4	7.7	7.7	8.1	7.9	7.7	7.3	7.8	7.2	6.4	7.7	7.9
а-НСН	mg/kg	#	#	#	#	#	# #	#	#	<0.1	#	#	#
b-HCH	mg/kg	#	#	#	#	# #	#	#	#	<0.1	#	#	#
g-HCH (lindane)	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
d-HCH	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
a-Chlordane	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#

Results for soil samples expressed as dry weight
: Analyte not requested

ANALYTES	UNITS	TP13 (0.00 - 0.20m)	TP14 (0.10m)	TP14A (0.10m)	TP14A (1.80m)	TP15A (0.40m)	TP17 (0.20m)	TP19 (0.00 - 0.25m)	TP22 (0.10m)	TP24 (0.10m)	TP28 (0.00 - 0.23m)	TP30 (0.00 - 0.20m)	TP32 (0.50m)
		S0127810	S0127811	S0127812	S0127813	S0127814	S0127815	S0127816	S0127817	S0127820	S0127821	S0127822	S0127823
g-Chlordane	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
4.4'-DDD	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
4,4'-DDE	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
4.4'-DDT	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Aldrin	mg/kg	#	#,	#	#	#	#	#	#	<0.1	#	#	#
Dieldrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Endosulfan I	mg/kg	#	# .	#	#	#	#	#	#	<0.1	#	#	#
Endosulfan II	mg/kg	#	#)* #	#	#	#	#	#	<0.1	#	#	#
Endosulfan Sulfate	mg/kg	#	#	# .	#	#	#	#	#	<0.1	#	#	#
Endrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Endrin aldehyde	mg/kg	#	#	#	#	#	# :	#	#	<0.1	#	#	.#
Endrin ketone	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Heptachlor	mg/kg	#	#	#	#	#	#	# .	#	<0.1	#	#	#
Heptachlor epoxide	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Hexachlorobenzene	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Hexachlorocyclopentadiene	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Methoxychlor	mg/kg	#	#	#	#	#	#	.#	#	<0.1	#	#	#
Fenthion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Fenitrothion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Malathion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#

Results for soil samples expressed as dry weight

: Analyte not requested

Report No. R01/2901

Summary Of Results Pell Frischmann Consultants Ltd. - Bicester

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ANALYTES	UNITS	TP13 (0.00 - 0.20m)	TP14 (0.10m)	TP14A (0.10m)	TP14A (1.80m)	TP15A (0.40m)	TP17 (0.20m)	TP19 (0.00 - 0.25m)	TP22 (0.10m)	TP24 (0.10m)	TP28 (0.00 - 0.23m)	TP30 (0.00 - 0.20m)	TP32 (0.50m)
		50127810	S0127811	S0127812	S0127813	S0127814	S0127815	S0127816	S0127817	S0127820	S0127821	S0127822	S0127823
Parathion-ethyl	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Dichlorvos	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Permethrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Simazine	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Atrazine	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Azinphos-methyl	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Azinphos-ethyl	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Trifluralin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Alachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
cis-Nonachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
trans-Nonachlor	mg/kg	#	#	#	#	#	# ,	#	#	<0.1	#	#	#
Chlorobenzilate	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Chlorothalonil	mg/kg	#	#	#	#	#	#	, #	#	<0.1	#	#	#
Dacthal	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Etridiazole	mg/kg	#	#	#	#	#	4	#	#	<0.1	#	#	#
Chloroneb	mg/kg	#	#	#	#	#	#	#	#	0.1	#	#	#
Propachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Bentazone	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#

Results for soil samples expressed as dry weight.
: Analyte not requested

ANALYTES	UNITS	TP33 (0.50m)	TP34 (0.10m)	TP37 (0.00 - 0.25m)	TP41 (0.00 - 0,30m)	TP42 (0.10m)	TP42 (0.50m)	TP44 (0.50m)	TP47 (0.00 - 0.30m)	TP52 (0.00 - 0.25m)	TP54 (0.10m)	TP55 (0.10m)	TP57 (0.30m)
		S0127824	S0127825	S0127826	S0127827	S0127829	S0127830	S0127831	S0127832	S0127833	S0127835	S0127836	S012783
Arsenic	mg/kg	17.5	23.0	15.2	9.8	23.1	11.9	20.0	22.4	12.1	20.0	20.8	48.6
Cadmi um	mg/kg	0.6	0.6	0.5	0.6	0.6	0.8	0.7	1.1	0.7	0.6	0.7	0.5
Chromium (total)	mg/kg	18.1	38.1	50.4	39.3	33.0	7.6	31.7	62.9	41.1	36.2	33.0	65.6
Lead	mg/kg	3.0	19.5	4.1	<0.5	20.0	2.2	8.8	<0.5	2.1	20.6	26.0	<0.5
Mercury	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/kg	<1.0	<1.0.	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (water soluble)	mg/kg	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper	mg/kg	5.0	16.4	21.1	12.8	14.6	<0.2	16.6	19.1	18.3	17.6	17.7	14.7
Nickel	mg/kg	27.4	37.2	28.4	12.1	34.4	12.3	34.8	33.6	29.0	34.9	32.7	48.2
Zinc	mg/kg	33.6	83.1	91.5	68.4	68.2	18.5	68.9	107.1	101.3	78.2	74.8	89.1
PAH (total)	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenols	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	. <1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyanide (total)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sulphate (total)	mg/kg	782	753	564	457	887	895	618	636	482	685	696	48
рН	N/A	7.9	7.4	6.7	6.3	7.8	8.1	7.8	7.1	7.6	7.8	7.9	7.8
Arsenic (leachable)	ug/1	#	# .	#	<1.0	#	#	#	#	#	<1.0	#	#
Cadmium (leachable)	ug/1	#	#	#-	<0.1	#	#	#	#	#	<0.1	#	#
Chromium (leachable)	mg/l	#	#	# .	<0.01	#	#	#	#	#	<0.01	#	<u>"</u>
Lead (leachable)	mg/1	#	#	#	<0.03	#	#	#	#	#	<0.03	#	#
Mercury (leachable)	ug/1	#	#	#	<0.1	#	#	#	#	#	<0.1	#	<u>"</u>

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate #: Analyte not requested
Report No. R01/2901

ANALYTES	UNITS	TP33 (0.50m)	TP34 (0.10m)	TP37 (0.00 - 0.25m)	TP41 (0.00 - 0.30m)	TP42 (0.10m)	TP42 (0.50m)	TP44 (0.50m)	TP47 (0.00 - 0.30m)	TP52 (0.00 - 0.25m)	TP54 (0.10m)	TP55 (0.10m)	TP57 (0.30m)
		S0127824	S0127825	S0127826	S0127827	S0127829	S0127830	S0127831	S0127832	S0127833	S0127835	S0127836	S0127837
Selenium (leachable)	ug/1	#	#	#	<1.0	# .	#	#	#	#	<1.0	#	#
Boron (leachable)	mg/l	#	#	#	0.02	#	#	#	#	#	0.01	#	#
Copper (leachable)	mg/1	#	#	#	<0.01	#	#	#	#	#	<0.01	#	#
Nickel (leachable)	mg/l	#	#	#	0.02	#	#	#	#	#	0.01	#	#
Zinc (leachable)	mg/l	#	#	#	0.03	#	#	#	#	#	<0.01	#	#
PAH (total) (leachable)	mg/l	#	#	#	<0.01	#	#	#	#	#	<0.01	#	#
Phenols (leachable)	mg/l	#	#	e. #	<0.01	#	#	#	#	#	<0.01	#	#
Cyanide (total) (leachable)	mg/l	#	#	#	<0.01	#	#	# .	#	#	<0.01	#	#
Sulphate (leachable)	mg/l	#	#	#	<1	#	#	#	#	#	<1	#	#
pH (leachable)	N/A	#	#	#	5.9	#	#	#	#	#	7.4	#	#
а-НСН	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
ь-нсн	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
g-HCH (lindane)	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
d-HCH	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
a-Chlordane	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
g-Chlordane	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
4,4'-DDD	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
4.4'-DDE	mg/kg	# 1	#	#	#	#	#	#	#	<0.1	#	#	#
4.4'-DDT	mg/kg	#	#	#	. #	#	#	#	#	<0.1	#	#	#
Aldrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate

^{# :} Analyte not requested Report No. R01/2901

ANALYTES	UNITS	TP33 (0.50m)	TP34 (0.10m)	TP37 (0.00 - 0.25m)	TP41 (0.00 - 0.30m)	TP42 (0.10m)	TP42 (0.50m)	TP44 (0.50m)	TP47 (0.00 - 0.30m)	TP52 (0.00 - 0.25m)	TP54 (0.10m)	TP55 (0.10m)	TP57 (0.30m)
		S0127824	S0127825	S0127826	S0127827	S0127829	S0127830	S0127831	S0127832	S0127833	S0127835	S0127836	S0127837
Dieldrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Endosulfan I	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	. #	#
Endosulfan II	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Éndosulfan Sulfate	mg/kg	#	#	#	# .	#	#	#	#	<0.1	#	#	#
Endrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Endrin aldehyde	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Endrin ketone	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Heptachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Heptachlor epoxide	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Hexachlorobenzene	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Hexachlorocyclopentadiene	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	# (#
Methoxychlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Fenthion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Fenitrothion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Malathion	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Parathion-ethyl	mg/kg	#	#	#	#	. #	#	#	#	<0.1	#	#	#
Dichlorvos	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Permethrin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Simazine	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#
Atrazine	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#

Results for soil samples expressed as dry weight # : Analyte not requested

ANALYTES	UNITS	TP33 (0.50m)	TP34 (0.10m)	TP37 (0.00 - 0.25m)	TP41 (0.00 - 0.30m)	TP42 (0.10m)	TP42 (0.50m)	TP44 (0.50m)	TP47 (0.00 - 0.30m)	TP52 (0.00 - 0.25m)	TP54 (0.10m)	TP55 (0.10m)	TP57 (0.30m)	
		S0127824	S0127825	S0127826	S0127827	S0127829	S0127830	S0127831	S0127832	S0127833	S0127835	S0127836	S0127837	<i>,</i>]
Azinphos-methyl	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	. #	
Azinphos-ethyl	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#	t
Trifluralin	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#] _t
Alachlor	mg/kg	#	#	#	#	#	. #	#	#	<0.1	#	#	#	†
cis-Nonachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#] t
trans-Nonachlor	mg/kg	#	#	#	#	#	#	#	. #	<0.1	#	#	#	t
Chlorobenzilate	mg/kg	#	#	# .	#	#	#	#	#	<0.1	#	#	#	†
Chlorothalonil	mg/kg	#	#	9±#	#	#	#	#	#	<0.1	#	#	#	1
Dacthal	mg/kg	.#	#	#	#	#	#	#	#	<0.1	#	#	#	t
Etridiazole	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#	7
Chloroneb	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#	t
Propachlor	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#	t
Bentazone	mg/kg	#	#	#	#	#	#	#	#	<0.1	#	#	#	t

Results for soil samples expressed as dry weight
: Analyte not requested

ANALYTES	UNITS			TP59 (0.00 - 0.35m)	TP60 (0.00 - 0.34m)	TP63 (0.50m)	TP64 (0.20m)	TP68 (1.50m)	TP70 (0.60m)	TP71 (0.00 - 0.30m)	TP72 (0.60m)	TP73A (1.00m)	TP75 (0.30m)	TP76 (0.50m)
			S0127838	\$0127839	S0127840	S0127844	S0127845	S0127846	S0127847	S0127848	S0127849	S0127850	\$0127851	50127852
Arsenic	mg/kg		21.3	13.3	33.3	11.9	32.1	231.0	23.6	19.9	9.3	15.0	103.6	12.0
Cadmium	mg/kg		0.8	0.8	1.1	0.8	0.5	<0.2	<0.2	0.5	0.8	0.2	0.4	0.6
Chromium (total)	mg/kg	:	59.0	48.5	53.6	14.8	38.0	62.5	22.1	42.0	9.7	40.0	39.2	33.3
Lead	mg/kg		3.5	10.6	7.4	2.7	29.2	6.6	3.6	10.8	<0.5	<0.5	8.3	<0.5
Mercury	mg/kg		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	mg/kg		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (water soluble)	mg/kg		<0.5	<0.5	<0.5	0.5	0.5	<0.5	<0.5	0.6	0.6	0.5	0.6	0.5
Copper	mg/kg	-	28.7	20.5	28.2	3.5	31.9	57.8	6.7	17.2	<0.2	16.1	14.5	8.7
Nickel	mg/kg		36.5	29.3	39.3	15.5	40.2	161.7	33.7	36.8	7.9	36.5	43.9	31.4
Zinc	mg/kg		135.2	104.0	105.1	32.4	112.0	271.4	48.5	83.1	27.8	71.9	63.9	58.9
PAH (total)	mg/kg		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenols	mg/kg		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyanide (total)	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sulphate (total)	mg/kg		365	698	865	1508	1433	14027	582	1665	783	241	1144	498
Н	N/A		7.1	7.1	7.8	8.4	7.6	7.7	8.0	7.4	8.1	8.0	7.8	8.0
а-НСН	mg/kg		#	<0.1	#	#	#	#	#	#	#	#	#	#
ь-нсн	mg/kg		#	<0.1	#	#	#	#	#	#	#	#	#	#
g-HCH (lindane)	mg/kg		#	<0.1	#	#	#	#	#	#	#	#	#	#
d-нCн	mg/kg		#	<0.1	#	#	#	#	#	#	#	#	#	#
a-Chlordane	mg/kg		#	<0.1	#	#	#	#	#	#	#	#	#	#

Results for soil samples expressed as dry weight # : Analyte not requested

ANALYTES	UNITS	TP58 (0.20m)	TP59 (0.00 - 0.35m)	TP60 (0.00 - 0.34m)	TP63 (0.50m)	TP64 (0.20m)	TP68 (1.50m)	TP70 (0.60m)	TP71 (0.00 - 0.30m)	TP72 (0.60m)	TP73A (1.00m)	TP75 (0.30m)	TP76 (0.50m)	
		S0127838	S0127839	S0127840	S0127844	S0127845	S0127846	S0127847	S0127848	S0127849	S0127850	S0127851	50127852	1
g-Chlordane	mg/kg	#	<0.1	#	#	#	#	#	# .	#	#	#	#	1
4,4'-DDD	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
4,4'-DDE	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
4,4'-DDT	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
Aldrin	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
Dieldrin	mg/kg	#	<0.1	#	#	#	#	#	#	#	* #	#	#	1
Endosulfan I	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
Endosulfan II	mg/kg	#	<0.1	# #	#	#	#	#	#	#	#	#	# "	1
Endosulfan Sulfate	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	t
Endrin	mg/kg	#	<0.1	#	#	#	# .	#	#	#	#	#	#	1
Endrin aldehyde	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
Endrin ketone	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	t
Heptachlor	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	t
Heptachlor epoxide	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	t
Hexachlorobenzene	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	t
Hexachlorocyclopentadiene	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#]t
Methoxychlor	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	ļt
Fenthion	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1
Fenitrothion	mg/kg	#	<0.1	#	#	#	#	# .	#	#	#	#	#]1
Malathion	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#	1

Results for soil samples expressed as dry weight # : Analyte not requested

ANALYTES	UNITS	TP58 (0.20m)	TP59 (0.00 - 0.35m)	TP60 (0.00 - 0.34m)	TP63 (0.50m)	TP64 (0.20m)	TP68 (1.50m)	TP70 (0.60m)	TP71 (0.00 - 0.30m)	TP72 (0.60m)	TP73A (1.00m)	TP75 (0.30m)	TP76 (0.50m)
		S0127838	50127839	S0127840	S0127844	S0127845	S0127846	S0127847	L	S0127849	S0127850	S0127851	\$012705
Parathion-ethyl	mg/kg	#	<0.1	#	#	#	#	#	#	#			ļ
Dichlorvos	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
Permethrin	mg/kg	#	<0.1	#	#	#	#	#	#		#	#	#
Simazine	mg/kg	#	<0.1	#	#	#	#	#		#	#	#	#
Atrazine	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
Azinphos-methyl	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
Azinphos-ethyl	mg/kg	#	<0.1	#	#.	#	#	#	#	#	#	#	#
Trifluralin	mg/kg	#	<0.1	ı.#	#	#	#	#		#	#	#	#
Alachlor	mg/kg	#	<0.1	#	#	#	#	#	# #	#	#	#	#
cis-Nonachlor	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
trans-Nonachlor	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	# .	#.
Chlorobenzilate	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
Chlorothalonil	mg/kg	#	<0.1	#	#	#	#	#	#	#	#	#	#
Dacthal	mg/kg	#	<0.1	#	#	#	#		#	#	#	#	#
tridiazole	mg/kg	#	<0.1	#	#	#		#	# .	#	#	#	#
Chloroneb	mg/kg	#	<0.1	#	#		#	#	#	#	#	#	#
ropachlor	mg/kg	#	<0.1	#	#	#	#	#	#	#	# .	#	#
Bentazone	mg/kg	# #	<0.1			#	#	# .	#	#	#	#	#
rsenic (leachable)		 	-	#	#	#	#	#	#	#	#	#	#
	ug/1	#	#	#	#	#	#	# .	#	<1.0	#	#	<1.0
admium (leachable)	ug/1	#	#]	#	#	#	#	#	#	<0.1	#	#	<0.1

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate

^{#:} Analyte not requested
Report No. R01/2901

Summary Of Results Pell Frischmann Consultants Ltd. - Bicester

ANALYTES	UNITS	TP58 (0.20m)	TP59 (0.00 - 0.35m)	TP60 (0.00 - 0.34m)	TP63 (0.50m)	TP64 (0.20m)	TP68 (1.50m)	TP70 (0.60m)	TP71 (0.00 - 0.30m)	TP72 (0.60m)	TP73A (1.00m)	TP75 (0.30m)	TP76 (0.50m)
		S0127838	S0127839	S0127840	S0127844	S0127845	S0127846	S0127847	S0127848	\$0127840	\$0127950	50127051	6010305
Chromium (leachable)	mg/l	#	#	#	#	#	#	#	#				
Lead (leachable)	mg/l	#	#	#	#	#				<0.01	#	# .	<0.01
Mercury (leachable)	ug/1	#	#	#			#	#	#	<0.03	#	#	<0.03
Selenium (leachable)	ug/l	#	#		#	#	#	#	#	<0.1	#	#	<0.1
Boron (leachable)	mg/1	#		#	#	#	#	#	#	<1.0	#	#	<1.0
Copper (leachable)			#	#	#	#	#	#	#	<0.01	#	#	0.01
Nickel (leachable)	mg/l	#	#	#	#	#	#	#	. #	<0.01	#	#	<0.01
	mg/)	#	#	#	#	#	#	#	#	<0.01	#	#	<0.01
Zinc (leachable)	mg/l	#	#	#.	#	#	#	#	#	<0.01	#	#	<0.01
PAH (total) (leachable)	mg/I	#	#	#	#	#	#	#	#				
Phenols (leachable)	mg/l	#	#	#	#	#		#		<0.01	#	#	<0.01
Cyanide (total) (leachable)	mg/l	#	#	#	#				#	<0.01	#	#	<0.01
Sulphate (leachable)	mg/1	#				#	#	#	#	<0.01	#	#	<0.01
pH (leachable)	 		#	#	#	#	#	#	#	<1	#	#	<1
	N/A	#	#	#	#	#	#	#	#	7.1	#	#	7.3
DRO	mg/kg	#	#	#	#	#	#	#	#	#	#	#	<0.1

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate #: Analyte not requested

Summary Of Results Pell Frischmann Consultants Ltd. - Bicester

<u></u>													
ANALYTES	UNITS	TP79 (0.50m)	TP79A (0.40m)	TP798 (0.50m)	TP80 (0.85m)	TP83 (0.20m)	TP84 (1.00m)	TP87 (0.10m)	TP89 (0.20m)	TP89A (0.50m)	TP90 (0.50m)		
		S0127854	S0127855	S0127856	S0127857	S0127858	S0127859	S0127860	S0127861	S0127862	S0127863		
Arsenic	mg/kg	18.8	15.2	15.1	19.7	18.3	8.0	25.9	21.9	8.2	41.6	#	#
Cadmium	mg/kg	0.6	0.6	0.8	<0.2	0.5	0.7	0.4	0.5	1.1	0.3	#	
Chromium (total)	mg/kg	32.7	12.0	9.3	25.8	12.8	27.8	43.5	24.5	51.1	33.9		#
Lead	mg/kg	<0.5	<0.5	2.4	0.7	47.5	<0.5	18.9	34.2	<0.5		#	#
Mercury	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		11.6	#	#
Selenium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	#	#
Boron (water soluble)	mg/kg	<0.5	0.5	0.5	0.6	0.8	0.5	0.5		<1.0	<1.0	#	#.
Copper	mg/kg	11.0	<0.2	0.9	8.3	21.6	4.3	25.8	1.3	1.1	<0.5	#	#
Nickel	mg/kg	31.6	10.1	9.7	33.6	24.2	19.6	30.3	12.3	29.6	19.4	#	#
Zinc	mg/kg	61.5	22.7	19.0	50.4	69.4	59.0	109.3	13.9	27.9	44.6	#	#
PAH (total)	mg/kg	<10	<10.	<10	<10				142.8	95.5	110.0	#	#
Pheno1s	mg/kg	<1.0	<1.0	<1.0		<10	<10	<10	<10	<10	<10	#	#
Cyanide (total)	mg/kg	<2.0	<2.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	#	#
Sulphate (total)	 	 		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	#	#
	mg/kg	1017	945	1112	315	3072	1158	950	3429	2310	776	#	#
pH	N/A	7.9	8.0	8.1	8.1	7.4	7.8	7.4	7.3	7.3	7.8	#	#
Arsenic (leachable)	ug/l	#	<1.0	<1.0	#	#	1.1	#	<1.0	<1.0	<1.0	#	#
Cadmium (leachable)	ug/l	#	<0.1	<0.1	#	#	<0.1	#	<0.1	<0.1	<0.1	#	#
Chromium (leachable)	mg/l	#	<0.01	0.01	#	#	<0.01	#	<0.01	<0.01	<0.01	#	#
Lead (leachable)	mg/l	#	<0.03	<0.03	#	#	<0.03	#	<0.03	<0.03	<0.03	#	#
Mercury (leachable)	ug/l	#	<0.1	<0.1	#	#	<0.1	#	<0.1	<0.1	<0.1	#	#

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate #: Analyte not requested

Summary Of Results Pell Frischmann Consultants Ltd. - Bicester

ANALYTES				T	14								
WUWTI1E2	UNITS	TP79 (0.50m)	TP79A (0.40m)	TP79B (0.50m)	TP80 (0.85m)	TP83 (0.20m)	TP84 (1.00m)	TP87 (0.10m)	TP89 (0.20m)	TP89A (0.50m)	TP90 (0.50m)		
		S0127854	S0127855	S0127856	S0127857	S0127858	S0127859	S0127860	50127861	50127962	S0127863		
Selenium (leachable)	ug/1	#	<1.0	<1.0	#		<1.0	"			3012/863		ļ
Boron (leachable)	mg/l	#	0.02	<0.01	<u>"</u>	<u>"</u>	-	#	<1.0	<1.0	<1.0	#	#
Copper (leachable)	mg/1	ш			#	#	<0.01	#	0.06	0.06	0.01	#	#
Nickel (leachable)		#	<0.01	<0.01	#	#	<0.01	#	<0.01	<0.01	<0.01	#	#
	mg/1	#	<0.01	<0.01	#	#	<0.01	. #	<0.01	<0.01	<0.01	#	
Zinc (leachable)	mg/l	#	<0.01	<0.01	#	#	<0.01	#	<0.01	<0.01			#
PAH (total) (leachable)	mg/l	#	<0.01	<0.01	#	#	<0.01	и			<0.01	#	# .
Phenols (leachable)	mg/l	#	0.01	<0.01	ш			#	<0.01	<0.01	<0.01	#	#
Cyanide (total) (leachable)	mg/l	#			#	#	<0.01	#	<0.01	<0.01	<0.01	#	#
Sulphate (leachable)	 	"	<0.01	<0.01	#	#	<0.01	#	<0.01	<0.01	<0.01	#	#
	mg/l	#	<1	<1	# '	#	7	#	13	19	<1	#	#
oH (leachable)	N/A	#	7.5	7.3	#	#	7.4	#	7.8	7.4	7.5	#	#

Results for soil samples expressed as dry weight

Samples submitted for leachate determination were prepared using agreed procedures and analysed using UKAS accredited methodology where appropriate # : Analyte not requested



What's so special about a UKAS report or certificate?

- Accreditation of testing is granted by the United Kingdom Accreditation Service (UKAS).
- It's your assurance that the work has been carried out to the highest standards.
- The laboratory issuing the test report has been stringently assessed by independent experts.
- You are assured that the agreed or specified methods and procedures have been followed.
- Measurements are traceable to national and international standards.

Comments:

Tests marked † in this report are not included in the UKAS Accreditation Schedule for the testing laboratory. However, with the continuing development of our QC protocols, these tests will be included in the near future.

Any opinions and interpretations expressed herein are outside the scope of the testing laboratory's UKAS Accreditation.

The Coefficient of Variation CV_T (where CV_T = standard deviation/mean*100) is better than 15%

All analysis carried out using ECoS standard methods unless otherwise agreed The test results in this report refer only to the actual samples on which testing has been performed.

This test report shall not be reproduced, except in full, without written approval of ECoS Environmental.

Date submitted for analysis : 05/09/01

Your Job/Order Number : 410511/32561

Analyst(s) : MRH NB SJF NSP ELD DS SD DF

Approved signatories: J R Brown, E Dewell

Signature :

Report date: 18 September 2001

QA APPROVED
Signed A Suff.
Date 18/9/01

WATER

ANALYTE	METHOD OF DETECTION	LIMIT OF DETECTION
Arsenic Cadmium Chromium (hexavalent) Chromium	AAS-HYDRIDE GF-AAS ICP-OES ICP-OES	1.0 ug/l 0.1 ug/l 0.01 mg/l 0.01 mg/l
Lead	ICP-OES	0.01 mg/1
Mercury	AAS-HYDRIDE	0.1 ug/l
Selenium	AAS-HYDRIDE	1.0 ug/l
Boron	ICP-OES	0.01 mg/1
Copper Nickel	ICP-OES ICP-OES	0.01 mg/l
Zinc	ICP-OES	0.01 mg/l 0.01 mg/l
PAH (total)	GC-FID	0.01 mg/1
Phenols	Colorimetry	0.01 mg/1
Cyanide (free)	Colorimetry	0.01 mg/l
Cyanide (complex)	Colorimetry	0.01 mg/1
Cyanide (total)	Colorimetry	0.01 mg/l
Thiocyanate	Colorimetry	1.0 mg/]
Sulphate Sulphide	HPLC-IC Colorimetry	1 mg/l
Sulphur	HPLC-UV	0.1 mg/l 10 mg/l
pH	Aqualyser	N/A
Naphthalene	GC-FID	0.01 mg/l
Acenaphthylene	GC-FID	0.01 mg/1
Acenaphthene	GC-FID	0.01 mg/l
Fluorene	GC-FID	0.01 mg/l
Phenanthrene	GC-FID	0.01 mg/]
Anthracene Fluoranthene	GC-FID GC-FID	0.01 mg/l
Pyrene	GC-FID	0.01 mg/l 0.01 mg/l
Benzo(a)anthracene	GC-FID	0.01 mg/l
Chrysene	GC-FID	0.01 mg/1
Benzo(b)fluoranthene	GC-FID	0.01 mg/l
	≛ GC-FID	0.01 mg/l
Benzo(a)pyrene	GC-FID	0.01 mg/l
<pre>Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene</pre>	GC-FID	0.01 mg/l
Benzo(g,h,i)perylene	GC-FID GC-FID	0.01 mg/l 0.01 mg/l
Chloride	HPLC-IC	1 mg/1
Ammoniacal Nitrogen	Colorimetry	0.1 mg/l as N
TOC	Colorimetry	0.1 %
DRO	GC-FID	0.01 mg/l
PCBs	GC-ECD	0.01 mg/l

ANALYTES	UNITS	TP14A (1.80m)	TP15A (1.00m)	TP17 (1.10m)	TP36 (0.50m)	TP47 (1.00m)	TP71 (0.90m)	TP76 (2.50m)	TP768 (2.00m)	TP83 (0.80m)	TP89A (0.90m)	Farm Well	-	
		S0127783	S0127784	S0127785	S0127786	S0127787	S0127788	S0127789	S0127790	S0127791	S0127792	S0127793		
Arsenic	ug/1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	# .	
Cadmium	ug/1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#	7
Chromium (hexavalent)	mg/l	<0.01	#	#	#	#	#	#	#	#	<0.01	<0.01	#	1
Chromium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Lead	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	#	
Mercury	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#	
Selenium	ug/1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	#	
Boron	mg/l	<0.01	<0.01	0.01	0.41	0.04	0.10	<0.01	0.01	0.07	0.13	0.50	#	7
Copper	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Nickel	mg/l	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	#	
Zinc	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	7
PAH (total)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	1
Phenol s	mg/l	0.02	0.03	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.01	<0.01	#	7
Cyanide (free)	mg/-1	<0.01	#	#	#	#	#	#	#	#	<0.01	<0.01	#	
Cyanide (complex)	mg/l	<0.01	#	#	#	#	#	#	#	#	<0.01	<0.01	#	
Cyanide (total)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	7
Thiocyanate	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	#	7
Sulphate	mg/1	47	19	48	46	44	43	74	64	59	68	38	#	
Sulphide	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#	7
Sulphur	mg/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	#	1

Water samples analysed as received # : Analyte not requested

ANALYTES	UNITS	TP14A (1.80m)	TP15A (1.00m)	TP17 (1.10m)	TP36 (0.50m)	TP47 (1.00m)	TP71 (0.90m)	TP76 (2.50m)	TP76B (2.00m)	TP83 (0.80m)	TP89A (0.90m)	Farm Well		
		S0127783	S0127784	S0127785	S0127786	S0127787	S0127788	S0127789	S0127790	S0127791	S0127792	S0127793	-	
рН	N/A	7.2	7.2	7.4	7.5	7.2	7.4	7.4	7.4	7.3	7.2	7.9	#	
Naphtha l ene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Acenaphthylene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	7
Acenaphthene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Fluorene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#.	\dashv
Phenanthrene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	7
Anthracene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Fluoranthene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Pyrene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Benzo(a)anthracene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Chrysene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	# .	٦
Benzo(b)fluoranthene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Benzo(k)fluoranthene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Benzo(a)pyrene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Indeno(1,2,3-cd)pyrene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Dibenz(a,h)anthracene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	
Benzo(g,h,i)perylene	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	1
Chloride	mg/l	15	#	#	#	#	#	21	20	#	#.	21	#	
Ammoniacal Nitrogen	mg/l as N	<0.1	#	#	#	#	# .	<0.1	<0.1	#	#	<0.1	#	7
TOC	%	<0.1	#	#	#	#	#	<0.1	<0.1	#	#	<0.1	#	

Water samples analysed as received # : Analyte not requested

ANALYTES	UNITS						TP71 (0.90m)					Farm Well	
		S0127783	S0127784	S0127785	S0127786	S0127787	S0127788	S0127789	S0127790	S0127791	S0127792	S0127793	
DRO	mg/l	<0.01	#	#	#	#	#	<0.01	<0.01	#	#	<0.01	#
PCBs	mg/l	<0.01	#	#	#	#	#	<0.01	<0.01	#	#	<0.01	#

Water samples analysed as received # : Analyte not requested