

The sand and gravel resources of the Thames Valley, the country between Lechlade and Standlake

Description of 1:25 000 resource sheet SP 30 and parts of SP 20, SU 29 and SU 39

P. Robson

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The asterisk on the front cover indicates that parts of sheets adjacent to that quoted are described in this Report.

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PREFACE

National resources of many industrial minerals may seem so large that stocktaking appears unnecessary, but the demand for minerals and for land for all purposes is intensifying and it has become increasingly clear in recent years that regional assessments of the resources of these minerals should be undertaken. The publication of information about the quantity and quality of deposits over large areas is intended to provide a comprehensive factual background against which planning decisions can be made.

Sand and gravel, considered together as naturally occurring aggregate, was selected as the bulk mineral demanding the most urgent attention, initially in the south-east of England, where about half the national output is won and very few sources of alternative aggregates are available. Following a short feasibility project, initiated in 1966 by the Ministry of Land and Natural Resources, the Mineral Assessment Unit began systematic surveys in 1968. The work is now being financed by the Department of the Environment and is being undertaken with the cooperation of the Sand and Gravel Association of Great Britain.

This report describes the resources of sand and gravel of 220 km² of country between Lechlade and Standlake, shown on the accompanying resource map. The survey was conducted in 1971 and 1974 by Dr H. C. Squirrell assisted by Messrs J. Gray, P. Robson, D. J. Havard, M. R. Clarke and E. J. Raynor as field officers who supervised the drilling and sampling programme. Mr Gray collated the commercial borehole records and Mr J. Scallon helped in the preparation of the resource map. Mr Robson compiled the report assisted by a contribution on the geology of the area by Dr A. K. Kemp. The work is based on geological surveys by members of the Institute's Field Staff. The original survey on the one-inch scale was by W. T. Aveline, H. Baverman, E. Hull and W. Whittaker and the results published in 1857, with revisions in 1859. Six-inch surveys were conducted by A. J. Jukes-Browne and F. J. Bennett before 1900, by J. H. Blake and T. Pocock in 1904 to 1905, by H. G. Dines in 1931 and 1935 and by D. Foster, P. E. Harding, A. W. Kemp, P. Toghill and E. G. Poole during the period 1961 to 1973.

Mr J. W. Gardner, CBE, (Land Agent) was responsible for negotiating access to land for drilling. The ready cooperation of land owners, tenants, and gravel companies in this work, and the assistance of officials of the Oxfordshire County Council, Gloucestershire County Council and Wiltshire County Council is gratefully acknowledged.

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Summary

The geological maps of the Institute of Geological Sciences, pre-existing borehole information, and 106 boreholes drilled for the Mineral Assessment Unit form the basis of the assessment of sand and gravel resources of the country between Lechlade and Standlake in the counties of Oxfordshire, Gloucestershire and Wiltshire.

All deposits in the area which might be potentially workable for sand and gravel have been investigated and a simple statistical method has been used to estimate the volume. The reliability of the volume estimates is given at the symmetrical 95 per cent confidence level.

The 1:25 000 map is divided into eight resource blocks containing between 10.5 and 17.9 km² of sand and gravel. For each block the geology of the deposits is described and the mineral-bearing area, the mean thickness of overburden and mineral, and the mean grading of the mineral are stated. Detailed borehole data are given. The geology, the boreholes and the resource blocks are shown on the accompanying map.

Sommaire

Les sources des renseignements qui constituent les bases de l'évaluation des ressources en sable et en gravier dans la région de Lechlade et Standlake, Oxfordshire, Gloucestershire et Wiltshire, comprennent les cartes géologiques de l'Institute of Geological Sciences, des données obtenues des trous de sonde déjà en existence, et de 106 trous de sonde forés pour le Mineral Assessment Unit.

Dans la région tous les dépôts qui pourraient être exploités pour le sable et le gravier ont été étudiés et on s'est servi d'une méthode statistique simple pour en évaluer le volume. Les évaluations de volume sont tenues d'être symétriquement à 95 pour cent exactes.

La carte 1:25 000 est divisée en huit blocs de ressource avec d'entre 10.5 à 17.9 km² de sable et de gravier. Pour les blocs évalués statistiquement on décrit la géologie des dépôts et on donne l'étendue du terrain minéralisé, l'épaisseur moyenne de recouvrement et de minéral, et le triage moyen de minéral. On présente des données détaillées des trous de sonde. La situation des trous de sonde, la géologie et les profils des blocs de ressource sont montrés sur la carte.

Zusammenfassung

Die geologischen Karten vom Institute of Geological Sciences, vorherexistierende Information über Bohrlöcher, und 50 für die Mineral Assessment Unit gebohrten Bohrlöcher, bilden den Grund für die Einschätzung der Sand- und Schottermittel im Lechlade und Standlake Gebiet, Oxfordshire, Gloucestershire und Wiltshire.

Alle Ablagerungen im Gebiet, die möglich bearbeitbar für Sand und Schotter sind, wurden untersucht, und eine einfache statistische Methode wurde benutzt, um das Volumen zu schätzen. Man gibt die Zuverlässigkeit der Volumenschätzungen mit symmetrischen 95 Prozent Vertrauensgrenzen.

Man teilt die 1:25 000 Karte in 8 Mittelsblöcke, die zwischen 10.5 und 17.9 km² von Sand und Schotter umfassen. Man beschreibt die Geologie der Ablagerungen für die statistisch bewerteten Blöcke. Das mineralhaltige Gebiet, die mittlere Dicke von Überlastung und Mineral, und die mittlere Klassifizierung von Mineral werden bestimmt Ausführliche Bohrlöcherdaten werden auch gegeben. Die Geologie, die Lage der Bohrlöcher und die Skizzen der Blöcke werden auf der Begleitkarte gezeigt.

The sand and gravel resources of the Thames Valley, the country between Lechlade and Standlake

Description of 1:25 000 resource sheet SP 30 and parts of sheets SP 20, SU 29, and
SU 39

P. ROBSON

Introduction

The survey is concerned with the estimation of resources, which include deposits that are not currently exploitable but have a foreseeable use, rather than reserves, which can only be assessed in the light of current, locally prevailing, economic considerations. Clearly, both the economic and the social factors used to decide whether a deposit may be workable in the future cannot be predicted; they are likely to change with time. Deposits not currently economically workable may be exploited as demand increases, as higher grade or alternative materials become scarce, or as improved processing techniques are applied to them. The improved knowledge of the main physical properties of the resource and their variability which this survey seeks to provide, will add significantly to the factual background against which planning policies can be decided (Archer, 1969; Thurrell, 1971, Harris and others, 1974).

The survey provides information at the 'indicated' level "for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geological evidence. The sites available for inspection, measurement, and sampling are too widely spaced to permit the mineral bodies to be outlined completely or the grade established throughout" (Bureau of Mines and Geological Survey, 1948, p. 15).

It follows that the whereabouts of reserves must still be established and their size and quality proved by the customary detailed exploration and evaluation undertaken by the industry. However, the information provided by this survey should assist in the selection of the best targets for such further work. The following arbitrary physical criteria have been adopted.

- a. The deposit should average at least 1 m in thickness.

- b. The ratio of overburden to sand and gravel should be no more than 3:1.
- c. The proportion of fines (particles passing the No. 200 mesh BS sieve, about 1/16 mm) should not exceed 40 per cent.
- d. The deposit must lie within 25 m of the surface, this being taken as the likely maximum working depth under most circumstances. It follows from the second criterion that boreholes are drilled no deeper than 18 m if no sand and gravel has been proved.

If a deposit of sand and gravel broadly meets these criteria, it is regarded as 'potentially workable' and is described and assessed as 'mineral' in this report. As the assessment is at the indicated level, parts of such a deposit may not satisfy all the criteria.

For the particular needs of assessing sand and gravel resources, a grain-size classification based on the geometric scale 1/16 mm, 1/4 mm, 1 mm, 4 mm, 16 mm has been adopted. The boundaries between fines (that is, the clay and silt fractions) and sand, and between sand and gravel grade material, are placed at 16 mm and 4 mm respectively (see Appendix C).

The volume and other characteristics are assessed within resource blocks, each of which, ideally, contains approximately 10 km² of sand and gravel (see Appendix B). No account is taken of any factors, for example, roads, villages and high agricultural or landscape value which might stand in the way of sand and gravel being exploited, although towns are excluded. The estimated total volume therefore bears no simple relationship to the amount that could be extracted in practice.

It must be emphasised that the assessment applies to the resource block as a whole. Valid conclusions cannot be drawn about the mineral in parts of a block, except in the immediate vicinity of the actual sample points.

Description of the Resource Sheet

GENERAL

The resource sheet (Fig. 1) covers an area of 220 km² of which approximately 50 per cent (109.7 km²) is gravel bearing. It is situated between Lechlade and Standlake in the Upper Thames Valley, mostly in Oxfordshire with small areas in Gloucestershire and Wiltshire. The Thames falls from 72 m (235 ft) in the west, where it enters the area, to 62 m (204 ft) in the east, a fall of 9.5 m (31 ft) over approximately 19 km (12 miles). The river follows a meandering course along the southern margin of the valley which has been eroded into the Oxford Clay along the south-west to north-east strike of the bedrock (Fig. 2). A sequence of oolitic limestones, sands and clays, the White Limestone, Forest Marble, Cornbrash, Kellaways Clay and Kellaways Sand, form the dip slope of the Cotswolds which rise to over 152 m (500 ft) in the north-west; in the south-east the Corallian forms a ridge rising to over 91 m (300 ft).

The principal mineral-bearing tract consists of river gravels of the First and Second terraces on the floors of the valleys of the Thames and the two main northern tributaries, the Leach and Windrush. Less important remnant patches of the Third and Fourth terraces occur on the higher slopes of the northern valley side and, in the case of the Third Terrace, on low hill on the Thames Valley floor. The Third and Fourth terraces are believed to have been formerly much more extensive, marking earlier courses of the floodplain, but they have since been greatly dissected. Other minor deposits include a few scattered remnants of Glacial Sand and Gravel on the high ground near Witney in the north-east, and patches of Sand and Gravel of Unknown Age on the high ground in the south-west at Buscot. Existing gravel workings are concentrated in the Thames Valley near Lechlade (Second Terrace) and in the Windrush Valley (First and Second terraces) near Hardwick.

GEOLOGY

The results of the earliest geological survey of the district were described by Hull (1857, 1858). More recently the oolitic limestone formations have been described by Arkell (1931; 1933a and b), Richardson and others (1946), Arkell and Donovan (1952) and by Worssam and Bisson (1961). The Cornbrash has been described in detail by Douglas and Arkell (1928, 1932 and 1935). Early descriptions of the dominantly clay formations of the Kellaways Beds and Oxford Clay are summarised by Richardson

and others (1946). Definitive descriptions and subdivisions are given by Callomon (1968).

Workers who studied the drift geology of the area in the nineteenth century concentrated chiefly on the Cotswolds, for example, Hull (1855) and Lucy (1872). In the early part of this century interest continued to centre on the Cotswolds (Dines, 1928; 1933), but the Thames Valley deposits also received attention, particularly by Sandford (most importantly 1924; 1926; 1929). Work on the drift deposits up to the middle of the present century is summarised by Richardson and others (1946), but since then other important work has appeared including contributions by Bishop (1958), Sandford (1965), Beckinsale (1970) and Kellaway and others (1971). The currently accepted correlation of the drift deposits of the Upper Thames (based largely on Sandford's work) is described by Shotton (1973).

The foregoing work on the Quaternary deposits has established two major subdivisions, namely, glacial deposits and fluvial deposits; the former include much material from outside the area and the latter consists of locally derived material.

SOLID

The solid rocks of the area are of Middle and Upper Jurassic age (Table 1, Figs. 2, 3 and 5). The area is structurally simple with a regional dip of 2° to 5° to the south-east (Figs. 3 and 5). Minor faults in the north of the area have a dominantly east-west trend.

The following descriptions of the solid formations are given to illustrate the rock types from which the bulk of the river gravels were derived.

White Limestone

Only the top 4 to 5 m outcrops in the area. The consists typically of fine grained, massive, oolitic limestone with a varied fauna including gastropods and bivalves.

Forest Marble

The term Forest Marble is used to include all the beds between the White Limestone and the Cornbrash. The rocks consist dominantly of clay with interbedded lenticular limestone and locally developed thin calcareous sandstones. No evidence was found during the current survey to support Arkell's (1931) subdivision of the Forest Marble into Kemble and Wychwood Beds, separated by the Bradford Beds, although it was found possible to map

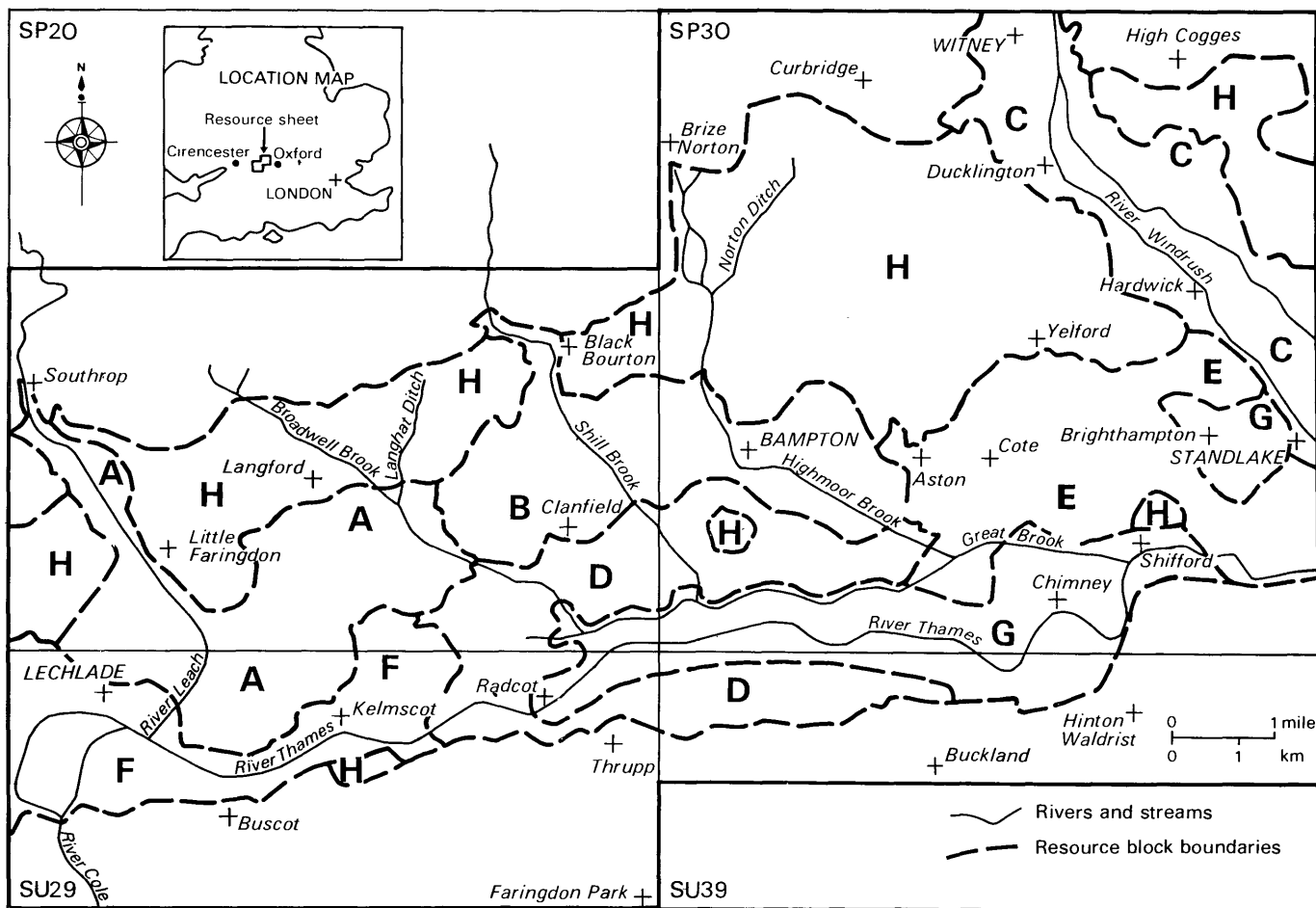


Fig. 1. Sketch maps showing the location of the resource sheet and the position of the resource block boundaries

the lenticular limestones separately. The Signet Beds (Worssam and Bisson, 1961) are a locally developed basal facies of the Forest Marble which consist of rubbly, medium grained, shell-fragmental, oolitic limestone with mudstone galls.

Cornbrash

Both upper and lower subdivisions (Douglas and Arkell, 1928) of the Cornbrash are recognised. The Lower Cornbrash comprises hard rubbly and flaggy limestones with thin marls, whilst the Upper Cornbrash consists of hard flaggy limestones with rubbly marls and thin sands. A fossiliferous sandy clay outcropping 500 m south-west of Broughton Poggs is of Upper Cornbrash age.

Kellaways Beds

The Kellaways Clay below is brown-weathering, dark bluish grey clay with silty clays up to 1 m thick developed locally at the top of the formation. The contact with the overlying Kellaways Sands appears to be transitional. The Kellaways Sand above is silty fine sand, bluish grey in colour when fresh, weathering to yellowish brown hues. Fossiliferous silty

limestone doggers are locally present, as in the bottom of a gravel pit at Lechlade [215 019].

Oxford Clay

This formation consists of brown-weathering, bluish grey, slightly silty clay which commonly contains shell fragments. *Gryphaea* sp. occurs throughout the formation and is particularly abundant in the uppermost 5 m.

Corallian

Beds assigned to the Corallian consist of sand, silt and limestone in varying proportions. They overlie the Oxford Clay and form the major escarpment in the south-east of the area. Recognition of Upper and Lower Corallian beds has not been possible due to rapid lateral lithological variations.

DRIFT

The drift deposits (Table 1 and Figs. 2 and 4) are described as far as possible in order of decreasing age.

Glacial Sand and Gravel

These are the highest and probably the oldest Pleistocene deposits in the area. The

Table 1. Strata outcropping in the resource sheet area.

DRIFT FORMATIONS

Pleistocene and Recent	Approximate maximum thickness (m)	Major lithologies
Alluvium	2.5	Silty clay
First Terrace (Northmoor)	5.0	Oolitic limestone gravel
Second Terrace (Summertown-Radley)	7.5	"
Third Terrace (Wolvercote)*	3.0	"
Fourth Terrace (Hanborough)	4.0	"
Sand and Gravel of Unknown Age	4.0	Pebbly clay
Glacial Sand and Gravel	2.0	Quartzite, flint and exotic pebbles in a sandy matrix

SOLID FORMATIONS

4

Upper Jurassic		
Corallian	20.0+	Sands, silts, and limestones
Oxford Clay	105.0	Clay with some silt
Kellaways Beds including the Kellaways Sand and the Kellaways Clay	10.0	Clay and silty sand
Middle Jurassic		
Cornbrash (Upper Jurassic in part)	3.5	Rubbly shell-detrital limestone
Forest Marble (undivided)	15.0	Interbedded flaggy limestones and clays
Signet Beds in Forest Marble	6.5	Bioturbated oolitic limestone
White Limestone	5.0+	Massive oolitic limestone

* Includes Terrace 2 +3 (see p.6)

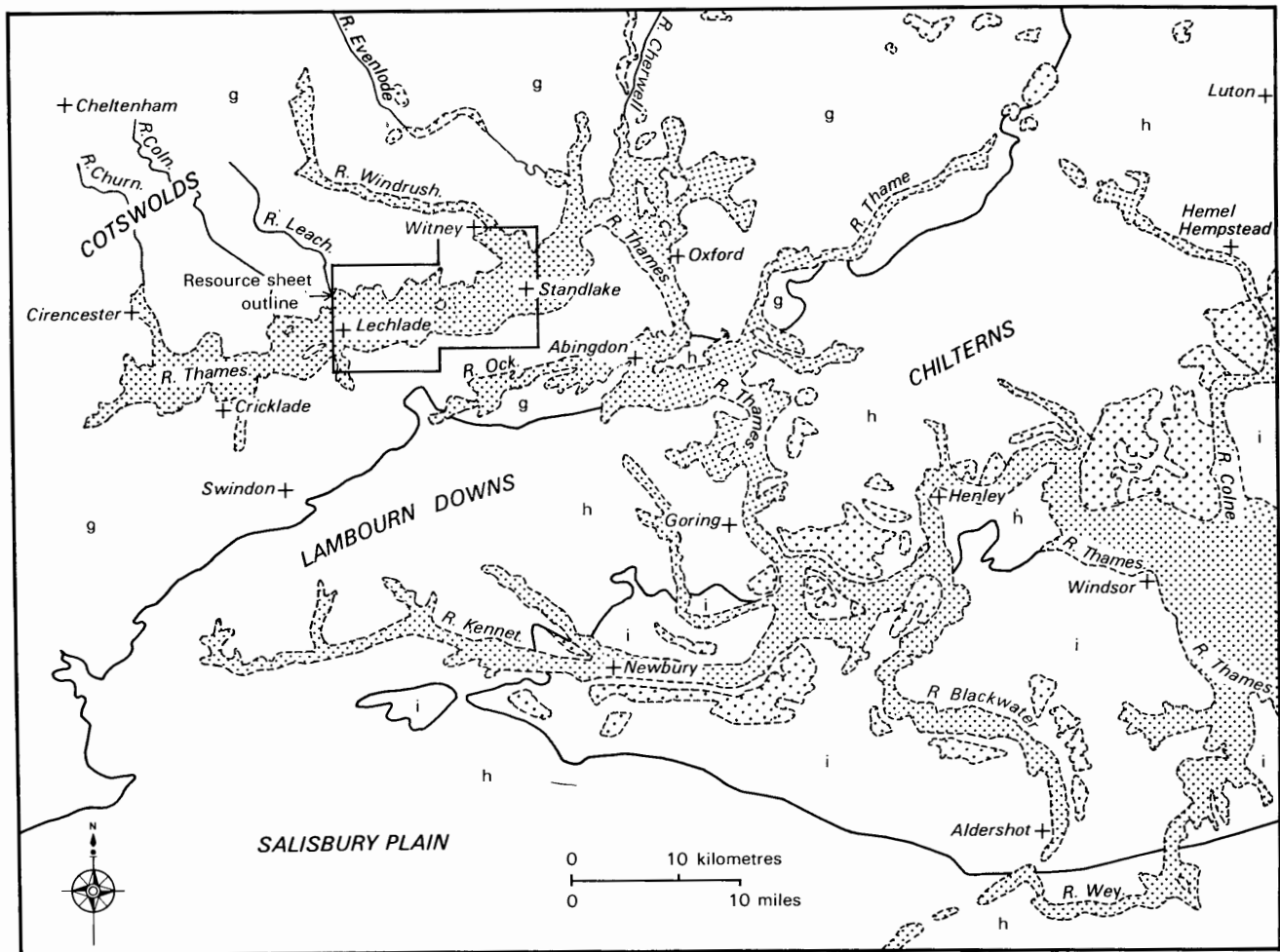


Fig. 2. Sketch map of the regional geological setting

small areas, east of Witney, are up to 97 m above OD and consist of Bunter quartzite, vein quartz, flint and scattered exotic pebbles in a reddish brown clayey sand matrix.

Sand and Gravel of Unknown Age

These deposits overlie the Oxford Clay in a few places south of the River Thames, at approximately 80 m above OD. They consist dominantly of subangular flint and rounded quartzite pebbles set in a clayey matrix. Sandford (1965, pp. 64-65) concluded that they may represent the product of a confluence of the rivers Cole, Leach and Thames. An alternative hypothesis (E. G. Poole, personal communication) favours a glacial or fluvioglacial origin.

Terrace Deposits

Unlike the previous two deposits these contain a high proportion of pebbles of local origin, mainly limestones (dominantly oolitic) derived from the Jurassic rocks of the Cotswolds. Four terraces are recognised in the Upper Thames area, named by Sandford (1924 and 1926) after villages near Oxford and Abingdon. The Fourth Terrace (Hanborough) is the oldest and highest and lies some 27 m (89 ft) above the Thames, the Third Terrace (Wolvercote) lies at about 12 m (39 ft), the Second Terrace (Summer-town-Radley) at about 6 m (20 ft), although in places it may also be concealed beneath the Alluvium on the valley floor, and lastly the First Terrace (Northmoor) lies just

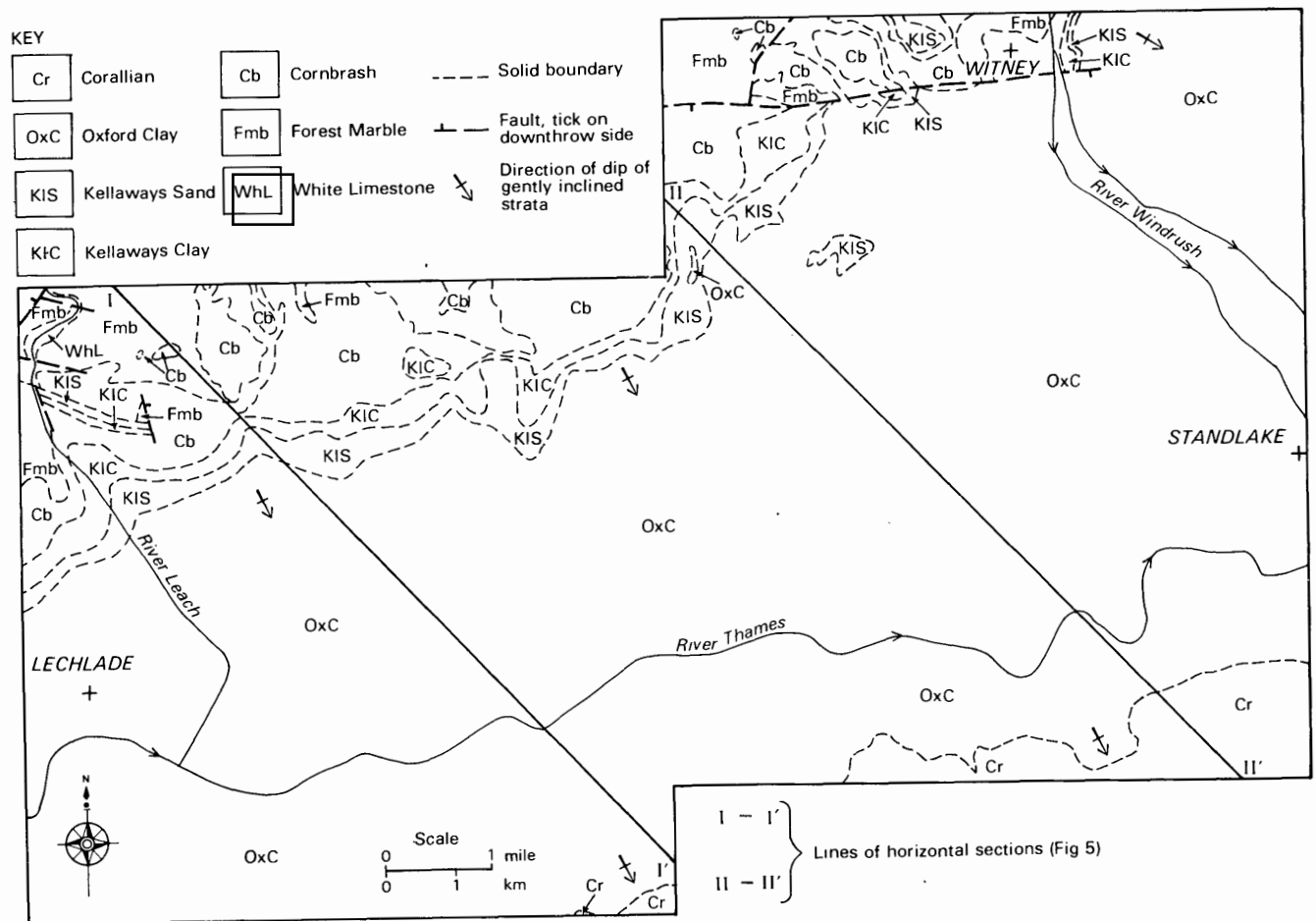


Fig. 3. Solid geology and structure

above or at the level of the Alluvium (0 to 3 m) on the valley floor. The gravels in a buried channel, which is present beneath the Alluvium of the floodplain at certain places, are believed to be continuous with those of the First Terrace.

Fourth Terrace

This terrace occurs as isolated remnants (Figs. 4 and 5) on the higher slopes of the northern valley side and was originally much more extensive. Although essentially limestone gravels, the soil on these deposits is rich in quartzite pebbles, limestone pebbles being rare or absent, apparently due to decalcification. The quartzite pebbles are believed to have been derived from the older glacial deposits of the neighbourhood. The terrace deposits are visible north-east of Yelford, where a roadside pit [365 054] shows up to 3.5 m of dominantly oolitic limestone gravel.

Third Terrace

Remnants of this terrace occur mainly on the middle slopes of the northern valley side of the Thames. The gravels of this terrace are dominantly of limestone, but small patches of the terrace between Little Faringdon [223 013] and Black Bourton [286 043] contain a higher proportion of quartzite pebbles, thought to be due to decalcification.

Deposits in a few small areas east of Little Faringdon and south-east of Weald [308 024], previously mapped as Older Alluvium, have been reclassified as Terrace 2-3 on account of their anomalous height in relation to the general levels of the Second and Third terraces.

Second Terrace

This terrace occurs as an extensive tract of limestone gravel chiefly along the northern margin of the Thames Valley floor between Starveal Barn [200 008] in the west and Beard Hill [397 056] in the east.

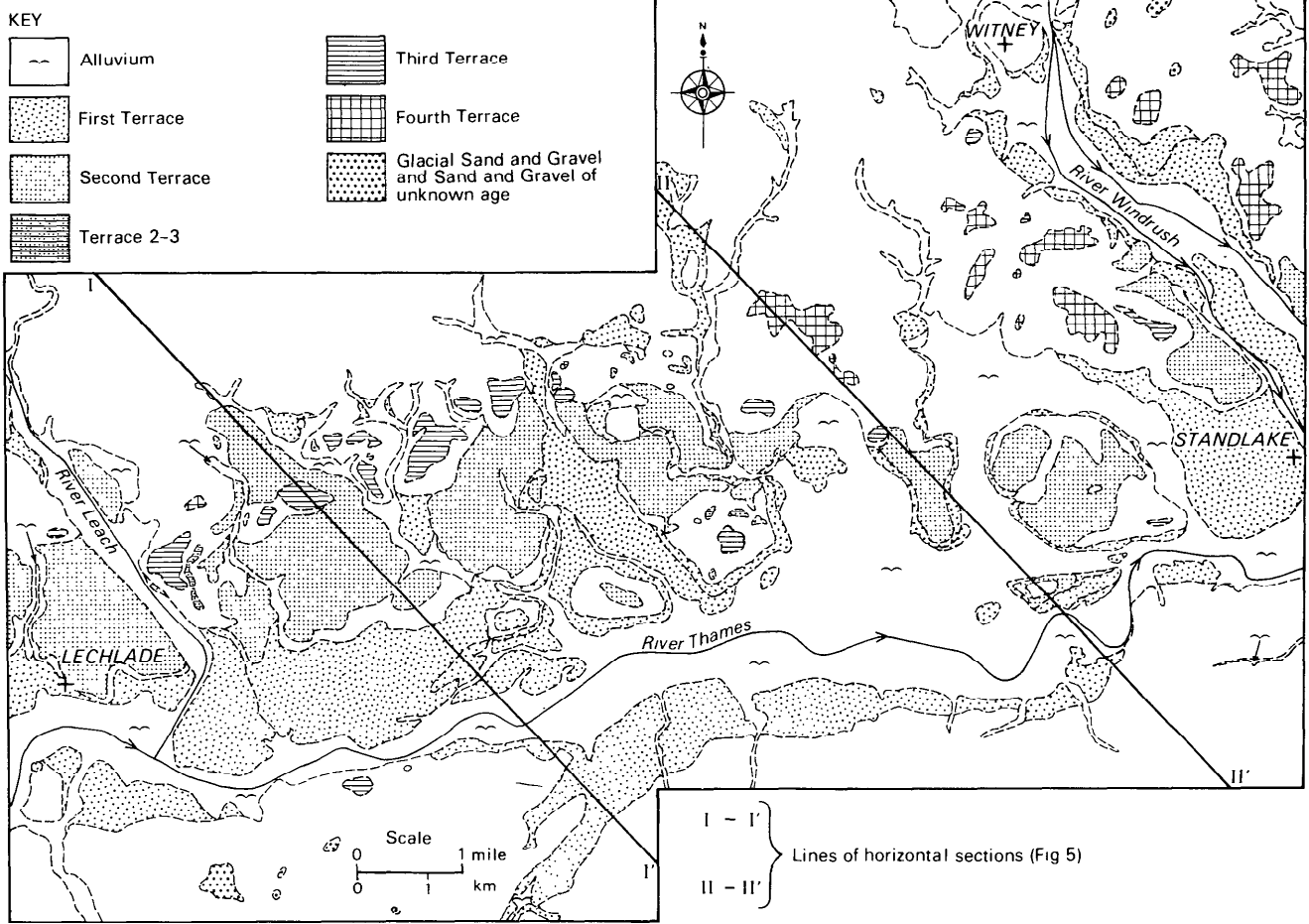


Fig. 4. Drift geology

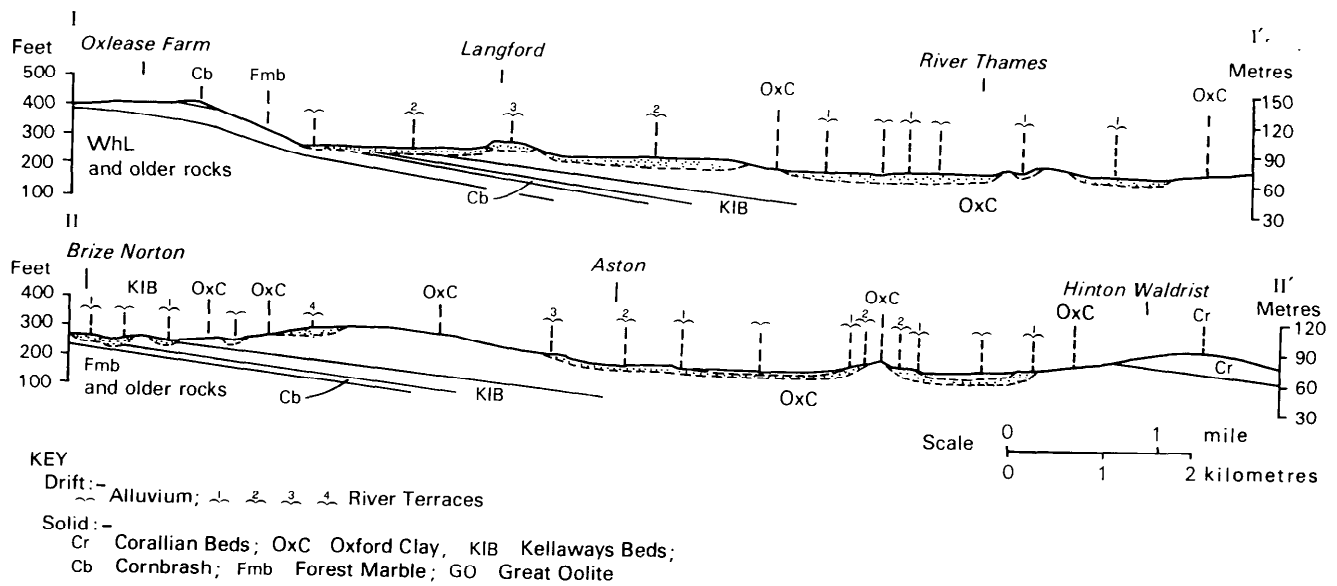


Fig. 5. Diagrammatic sections showing the general relations of the strata in the area (along the lines I-I' and II-II', on Figs. 3 and 4)

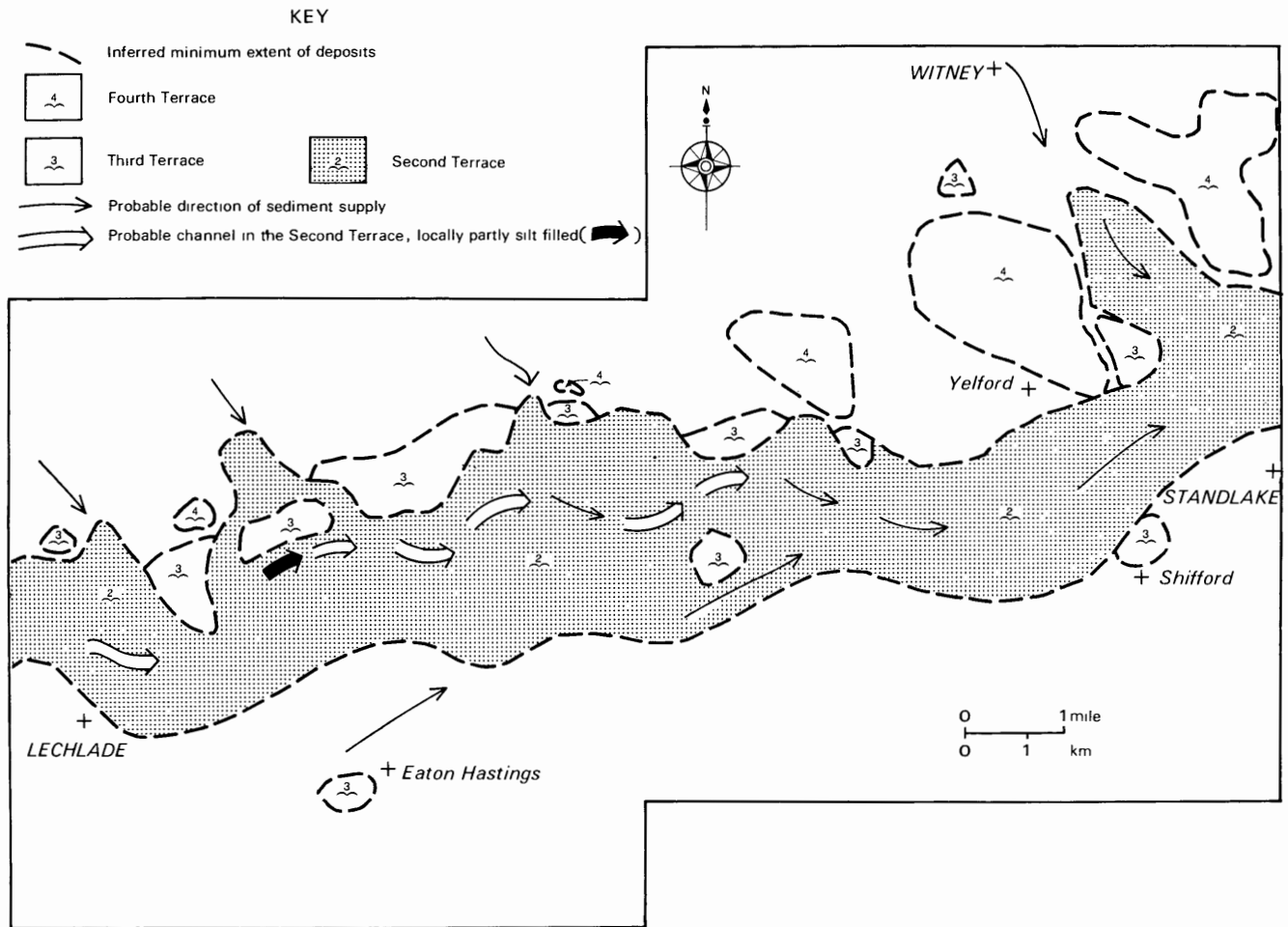


Fig. 6. Hypothetical reconstruction of the deposition of the Second Terrace

The thickness of the gravels generally lies between 4 and 5 m, but locally, (for example, in boreholes 20 SE 12 and 236/187a) thicknesses of up to 7.5 m are recorded which may indicate the presence of gravel-filled channels cut in the underlying Oxford Clay (Fig. 6). The terrace in places is cut by mainly silt-filled channels, for example, in borehole 20 SW 11.

The deposits are visible in a pit north-west of Lechlade Station [218 006], which shows 3 to 4 m of false-bedded limestone gravel resting on Kellaways Sand. The gravel is overlain by up to 0.5 m of calcareous silt with thin peat lenses. Red silty to sandy clay occurs locally on the surface of the Second Terrace. At Tillingtons [241 019] it is at least 1.3 m thick and near Cowsleaze Corner [302 027] 2.5 m of silt ('brickearth') overlies gravel.

At a few localities the upper surface of the Second Terrace can be separated into two levels with a height difference of approximately 0.5 m as around New Shifford Farm [371 032] and south of Bampton [315 033]. It is not known whether there is a corresponding difference in the level of the base of the gravels.

First Terrace

Gravels of the First Terrace are composed essentially of limestone and form a broad tract of country lying mainly to the south of the Second Terrace. The upper surface of the terrace can be derived into two levels (1A and 1B) which are separated by a height difference of approximately 0.3 m.

The first Terrace deposits are thickest where the main northern tributaries (the Leach, Windrush and Shillbrook) enter the Thames Valley, indicating the presence of buried channels (Fig. 7).

In addition, there are important spreads of First Terrace gravels concealed beneath Alluvium in the Leach and Windrush Valleys, where up to 5 m are worked.

Alluvium

The Alluvium of the River Thames and its tributaries is dark grey silty clay with thin peaty lenses and many small molluscan shells. In the Thames, Leach and Windrush valleys, gravels of the First Terrace extend beneath the Alluvium, but in the smaller tributaries

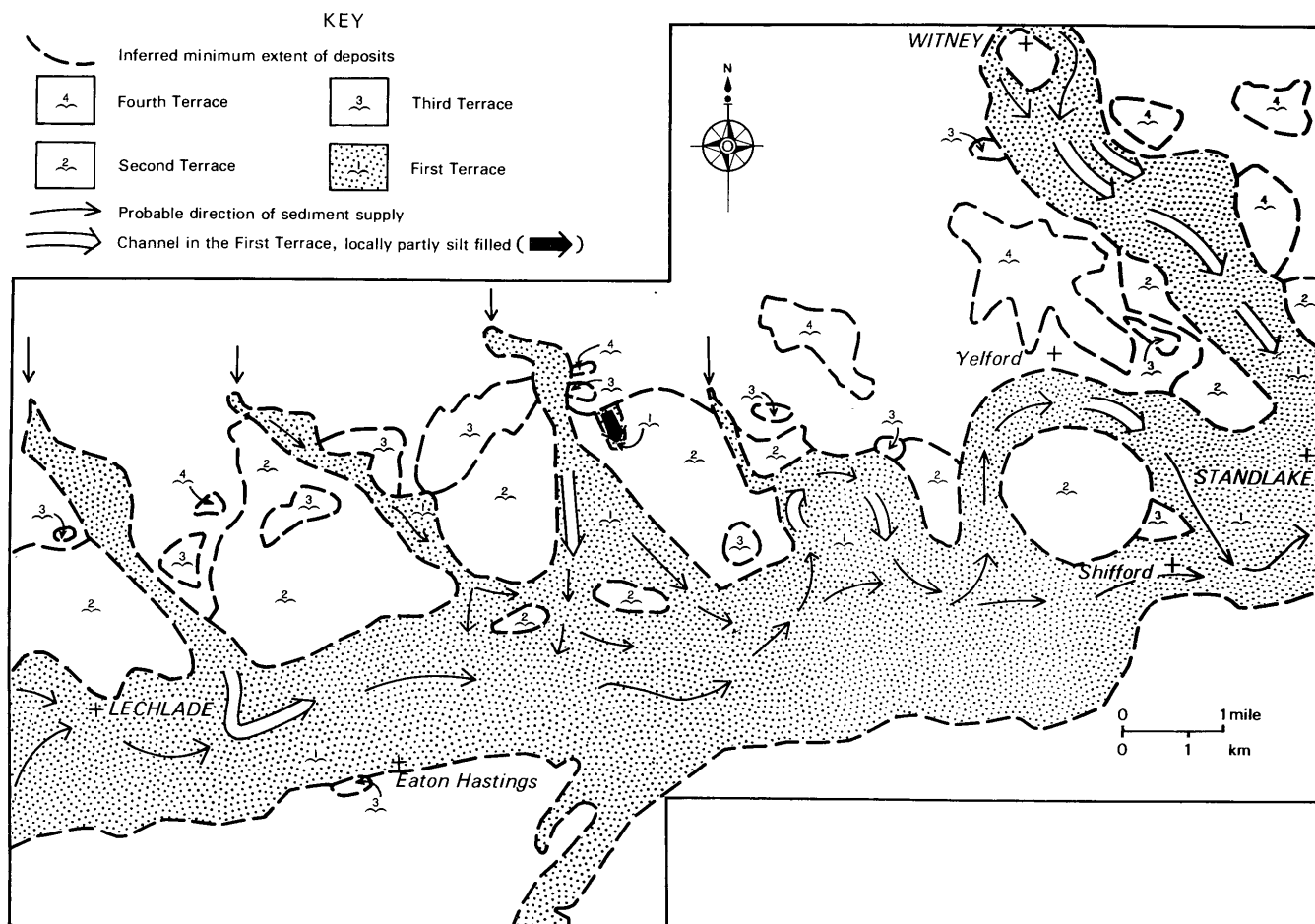


Fig. 7. Hypothetical reconstruction of the deposition of the main phase of the First Terrace

Alluvium commonly rests directly on bedrock. Small patches of Alluvium are also present on the Second Terrace, where small streams from the north flow off the Oxford Clay, for example, south-east of Black Bourton [284 038].

HISTORY OF THE DEPOSITION OF THE TERRACE DEPOSITS

The following brief reconstruction of the likely sequence of events is given to explain the present-day distribution of the gravel deposits, for example, the contrast between the thin, scattered remnants of the older Third and Fourth terraces and the younger, more extensive and thicker First and Second Terrace deposits.

The main mineral resources are in the block A, B and C, which include the channel deposits, whereas blocks D and E contain thinner material. Others, blocks F and G, contain large areas of mineral beneath overburden (Alluvium). It is clear that mineral working in blocks A, B and C would require the use of less land for a given yield than in the others.

Fourth Terrace

The remnants of the Fourth Terrace are

concentrated on the high ground near Witney, on both sides of the Windrush Valley above its confluence with the Thames. Other, generally smaller patches are scattered over the high ground to the west, along the strike of the bedrock. This distribution suggests that there may have been a south-west to north-east trending proto-Thames river flowing along the northern flank of the present valley and that the Windrush was already a major northern tributary. The concentration of material around the confluence of the Windrush and Thames indicates that thick gravels probably spread out from the mouth of the Windrush onto the Thames valley.

Third Terrace

Prior to the desposition of the Third Terrace the Fourth Terrace deposits were much dissected and the land surface lowered in places by up to 15 m. The distribution of the Third Terrace remnants indicates that a south-west to north-east trending river system was in existence at this time, perhaps along a course slightly to the south of the

present remnants of the Fourth Terrace deposits, but the isolated patches in the south-west and south-east are problematical. They probably represent deposits of southern tributaries, but may indicate that the Thames floodplain was very extensive (for example, from Little Faringdon to Eaton Hastings and from Yelford to Shifford).

Second Terrace

Following another period of erosion when the Fourth Terrace remnants were probably further reduced in size and the Third Terrace dissected, extensive gravels of the Second Terrace were laid down in a broad tract along the northern margin of the present Thames Valley floor (Fig. 6). The gravels were deposited by a major river which followed a meandering west to east course (proved by bedrock levels in borings) along the Thames Valley with the Leach, Windrush and Broadwell Brook as feeder streams.

First Terrace

The last main phase of terrace deposition followed another period of erosion when a further 6 m was removed from the land surface, the Fourth and Third terrace remnants were again reduced in size and the Second Terrace deposits were dissected by the Leach, Shellbrook and Windrush bringing in material from the north. A broad west-east tract of First Terrace gravels was laid down south of the Second Terrace deposit, in places filling channels at the points of confluence of the main northern tributaries and the Thames (Fig. 7).

Since the deposition of the First Terrace, erosion by the Thames formed a valley-bottom trench up to 3 m deep, which has been infilled with Alluvium in the most recent phase of deposition. The tributary streams have also deposited Alluvium, resulting in the present-day outcrops shown in Fig. 4.

COMPOSITION OF THE SAND AND GRAVEL DEPOSITS

The gravel in the terrace deposits consists of limestone with subordinate ironstone, some flint, quartzite and quartz, and shell fragments. The limestone and ironstone pebbles are generally subrounded, the flint subangular, the quartz and quartzite well rounded, and the shell fragments worn. Cobbles of tabular subrounded to subangular limestone, tabular to irregular flint, and ovoid quartzite also occur, generally in the lower part of the deposits. Other rock types, recorded in small amounts by Sandford (1929), include igneous and metamorphic erratics. The sand fraction

consists of discrete ooliths, rounded limestone grains, and subangular fine to rounded coarse quartz. Minor sand constituents include ironstone and shell fragments.

Most of the mineral in the terrace deposits is classified as either sandy gravel or gravel (Appendix C), with size fractions (Table 11 and Fig. 8) varying fairly closely about the mean for the sheet, which is, gravel 44 per cent, sand 50 per cent and fines 6 per cent. Some boreholes proved 'clayey' sandy gravel and a few 'clayey' gravel. Rare occurrences of pebbly sand, 'clayey' pebbly sand, 'very clayey' gravel and 'very clayey' sandy gravel are also recorded.

THE MAP

The sand and gravel resource map is folded into the pocket at the end of this report. The base map is the Ordnance Survey 1:25 000 Outline Edition in grey, on which the topography is shown by contours in green, the geological data in black and the mineral resource information in shades of red.

Geological Data

The geological boundary lines are taken from recently surveyed six-inch maps of parts of the Cirencester (235), Witney (236), Swindon (252) and Abingdon (253) one-inch sheets. The information was obtained by detailed field mapping on the six-inch to one mile scale by the Institute's field staff. Borehole data which include the stratigraphic relations and mean particle size distribution of the sand and gravel samples collected during the assessment survey, are also shown.

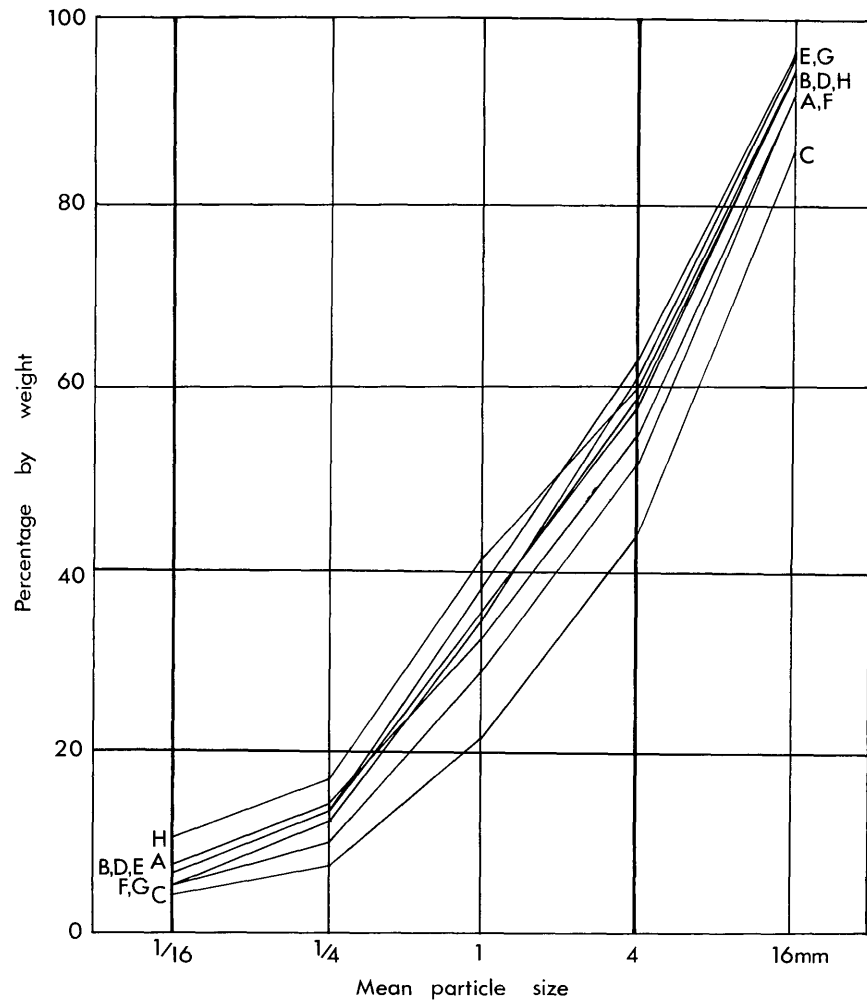
The geological boundaries are the best interpretations of the information available at the time of survey. However, it is inevitable that local irregularities or discrepancies will be revealed by some boreholes. These are taken into account in the assessment of resources (see below and Appendix B).

Mineral Resource Information

The mineral-bearing ground is divided into resource blocks (see Appendix A). Within a resource block the mineral may be subdivided into areas where it is 'exposed' and areas where it is present beneath overburden. The mineral is identified as 'exposed' where the overburden, commonly consisting only of soil and subsoil, averages less than 1 m (3.5 ft) in thickness, although in some areas, for example, near present streams, the overburden, including Alluvium, may be thicker locally. Beneath overburden the mineral may be continuous or discontinuous. As potentially

Table 2. Statistical assessment of sand and gravel resources: blocks A to H

Resource Block	Area		Mean thickness				Volume of Mineral		Limits at the 95% confidence level		Mean grading percentage		
	Block km ²	Mineral km ²	Overburden		Mineral		million m ³	million yd ³			Fines -1/16 mm	Sand +1/16 -4mm	Gravel +4 mm
			m	ft	m	ft							
	±%	± vol. million m ³											
A	16.0	14.5	0.7	2.5	3.7	12.0	51.4	67.2	24	12.3	7	48	45
B	18.7	17.9	0.8	2.5	4.7	15.5	84.1	110.0	18	15.1	6	53	41
C	12.6	11.0	0.9	3.0	4.2	14.0	46.2	60.4	23	10.6	4	40	56
D	14.3	12.5	0.7	2.5	2.9	9.5	36.3	47.5	11	4.0	6	52	42
E	16.4	14.0	1.1	3.5	2.7	9.0	37.8	49.4	20	7.6	6	57	37
F	11.1	10.5	1.1	3.5	2.1	7.0	22.0	28.8	22	4.8	5	47	48
G	16.4	16.2	1.5	5.0	1.6	5.5	26.2	34.3	19	5.0	5	56	39
H	50.0	13.1	0.9	3.0	1.2	4.0	15.7	20.5	32	5.0	10	50	40
A to H	155.5	109.7	1.0	3.5	2.9	9.5	320.0	419.0	12	38.4			



Block	Percentage by weight passing				
	1/16 mm	1/4 mm	1 mm	4 mm	16 mm
A	7	14	32	55	92
B	6	13	35	59	94
C	4	7	21	44	85
D	6	13	35	58	94
E	6	13	38	63	96
F	5	10	29	52	92
G	5	12	34	61	96
H	10	17	41	60	94

Fig. 8. Particle-size distribution of the assessed thickness of sand and gravel of the First Terrace in resource blocks A to H

workable sand and gravel was proved in 86 per cent of the boreholes drilled through overburden, the mineral is regarded as continuous.

Areas where bedrock outcrops and where sand and gravel does not satisfy the definition of 'mineral' are uncoloured on the map. In such areas it has been assumed that mineral is absent except in infrequent and relatively minor patches which can neither be outlined nor assessed quantitatively in the context of this survey. Areas of unassessed sand and gravel are indicated by a red stipple.

The area of the exposed sand and gravel is measured from the mapped geological boundary lines. The whole of this area is considered as mineral, although it may include small areas where sand and gravel is not present or is not potentially workable. Inferred boundaries (for which a distinctive zig-zag symbol is used) have been inserted to distinguish between areas of exposed mineral and areas of mineral beneath overburden and to distinguish areas of mineral from areas where sand and gravel is interpreted to be not potentially workable, or absent. The zig-zag symbol is intended to convey an approximate location within a likely zone of occurrence rather than to represent the breadth of the zone, its size being limited only by cartographic considerations. For the purpose of measuring areas, the centre-line of the symbol is used.

RESULTS

The statistical results are summarised in Table 2. Fuller grading particulars are shown in Fig. 8. The block boundaries have been drawn to indicate roughly the areas of relatively thick deposits (blocks A, B and C), the areas of thinner deposits (blocks D and E) and the areas of the thinnest deposits (blocks F, G and H). Parts of the deposits have been excluded from the statistically assessed areas either because they are less than 1 m thick, or because they contain more than 40 per cent of fines, or both. The patches of Sand and Gravel of unknown age around Buscot House [243 968] have been excluded from the survey because of their limited extent.

Accuracy of the results

For the eight resource blocks (A to H) assessed statistically, the accuracy of the results at the symmetrical 95 per cent probability level (that is, it is probable that 19 times out of 20 the true volume lies within the given limits) varies between 11 and 32 per cent. However, the true values are more likely to be nearer the volume calculated than either of the

limits. Moreover, it is probable that roughly the same percentage limits would apply for the estimate of volume of a much smaller parcel of ground (say, 200 acres) containing similar sand and gravel deposits if the results from the same number of sample points (as provided by, say, ten boreholes) were used in the calculation. Thus, if closer limits are needed for the quotation of reserves of parts of a block, it can be expected that data from more than ten sample points will be required, even if the area is quite small. This point can be illustrated by considering the whole of the statistically assessed sand and gravel on the sheet. The volume, 320 million m³, can be estimated to limits of ± 12 per cent at the symmetrical 95 per cent probability level, by a calculation based on 101 data points in blocks A to H.

However, it must be emphasised that this quoted volume of sand and gravel bears no simple relationship to the amount that could be extracted in practice, as no allowance has been made in the calculations for any restraints (such as existing buildings and roads) on the use of land for mineral.

NOTES ON RESOURCE BLOCKS

The block boundaries have been drawn using mineral thickness as the principal criterion. This provides easy recognition of the areas of thickest mineral (blocks A, B and C), the areas of thinner mineral (blocks D and E) and the areas of thinnest mineral (blocks F, G and H). The deposits of block H are further characterised by a generally higher fines content than the other blocks. Blocks A to G contain First and Second Terrace deposits only and block H contains thin areas of the First and Second terraces as well as the scattered remnants of the Third and Fourth terraces.

Block A

Block A extends along the northern margin of the Thames Valley floor from Lechlade to Little Clanfield and includes an extension up the Leach Valley. The block covers an area of 16 km² of which 14.5 km² of First Terrace and Second Terrace (in part concealed by Alluvium) is mineral bearing. The remainder consists of areas of worked-out gravel near Lechlade, and areas of outcropping bedrock. Solid rocks range from Forest Marble in the north through Cornbrash, Kellaways Clay and Kellaways Sand to Oxford Clay in the south where the Leach enters the Thames Valley. The broad south-west to north-east trending spread of gravels along the Thames Valley floor is underlain by Oxford Clay, which locally forms a bench where it outcrops between the First

Table 3. Mineral Assessment Unit data for resource block A.

MAU Borehole	Thickness (m)			Mean Grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
20 SW 3	0.6	6.9	Second Terrace	7	46	47	Gravel
4	0.5	3.4	Alluvium/First Terrace	4	37	59	Gravel
9	1.2	1.7	Second Terrace	12	51	37	'Clayey' sandy gravel
11	0.7	2.0	Second Terrace	19	55	26	'Clayey' sandy gravel
12	1.1	5.0	Second Terrace	6	57	37	Sandy gravel
13	0.4	4.0	Alluvium/First Terrace	4	45	51	Gravel
16	1.0	2.5	Second Terrace	5	57	38	Sandy gravel
20 SE 2	0.6	5.6	Second Terrace	5	50	45	Sandy gravel
3	0.6	1.9	Second Terrace	12	44	44	'Clayey' sandy gravel
6	1.2	1.0	First Terrace	7	60	33	Sandy gravel
29 NW 6	1.3	4.6	Second Terrace	9	56	35	Sandy gravel
8	0.3	3.7	First Terrace	5	42	53	Gravel
10	0.5	4.8	First Terrace	4	45	51	Gravel
11	0.3	3.4	First Terrace	6	44	50	Gravel
13	0.5	3.7	First Terrace	5	45	50	Gravel

Table 4. Mineral Assessment Unit data for resource block B.

MAU Borehole	Thickness (m)			Mean Grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
20 SE 9	0.4	5.3	Second Terrace	4	55	41	Sandy gravel
10	0.5	2.3	Second Terrace	6	50	44	Sandy gravel
12	0.3	7.5	Second Terrace	6	44	50	Gravel
14	1.1	4.3	First Terrace	8	62	30	Sandy gravel
15	0.4	5.3	Second Terrace	5	62	33	Sandy gravel
19	0.7	3.6	Second Terrace	6	55	39	Sandy gravel
20	0.9	4.8	First Terrace (1A)	4	47	49	Gravel
21	0.2	6.1	First Terrace (1A)	5	53	42	Sandy gravel
30 SW 2	0.4	5.0	Second Terrace	8	53	39	Sandy gravel
4	0.8	5.6	First Terrace (1B)	5	55	40	Sandy gravel
7	4.2	1.6	Alluvium/First Terrace	11	52	47	'Clayey' sandy gravel
8	0.8	4.8	Alluvium/First Terrace	6	60	34	Sandy gravel

and Second terraces. The block boundary encloses thick, buried channel deposits and thinner, flanking deposits in both the First and Second terraces (Figs. 6 and 7).

The assessment (Table 3) is based on 15 MAU boreholes (five in the First Terrace, eight in the Second Terrace, and two in the gravels, probably First Terrace beneath Alluvium) and four Hydrogeological Department records. The thickness of overburden ranges up to 1.2 m and the mean is 0.7 m. The thickness of mineral ranges up to 4.8 m in the First Terrace, up to 6.9 m in the Second Terrace and up to 4 m beneath the Alluvium. The mean mineral thickness for the block is 3.7 m, a rather low figure considering the presence of buried channel deposits, but it reflects the influence on the calculations of the thinner flanking deposits.

Seven of the MAU boreholes (20 SW 3, 4 and 13; 29 NW 8, 10, 11 and 13) contain mineral classified as gravel, five (20 SW 12 and 16; 20 SE 2 and 6; 29 NW 6) as sandy gravel, and three (20 SW 9 and 11; 20 SE 3) as 'clayey' sandy gravel. Mineral classified as gravel occurs mostly in the First Terrace and in the gravels (probable First Terrace) beneath Alluvium, the grading of which ranges from fine with coarse gravel 47 to 49 per cent, sand 37 to 46 per cent, and clayey silt fines 4 to 7 per cent. Mineral classified as sandy gravel occurs mostly in the Second Terrace with only one occurrence in the First Terrace. The mineral in these boreholes consists of fine with coarse gravel 33 to 45 per cent, sand 50 to 60 per cent and clayey silt fines 5 to 9 per cent. Mineral classified as 'clayey' sandy gravel occurs in the Second Terrace only and consists of fine with coarse gravel 26 to 44 per cent, sand 44 to 55 per cent, and silt and clay fines 12 to 19 per cent. The mean grading for the block is gravel 45 per cent, sand 48 per cent, and fines 7 per cent. The estimate of volume of mineral is $51.4 \text{ million m}^3 \pm 24 \text{ per cent}$.

Block B

Block B occupies a west-east trending area along the northern margin of the Thames Valley floor between Little Clanfield and Aston with an extension up the valley of Shill Brook above Black Bourton. The block covers an area of 18.7 km^2 of which 17.9 km^2 of First Terrace and Second Terrace (in part concealed by Alluvium) is mineral bearing. The remainder consists of areas of bedrock which outcrop at the margins of the drift deposits. Concealed bedrock consists of Forest Marble, Cornbrash, Kellaways Clay and Kellaways Sand beneath

the deposits of Shill Brook and Oxford Clay beneath the gravels on the Thames Valley floor. The block includes thick buried channel deposits flanked by thinner marginal deposits in both the First and Second terraces. The buried channel deposits of the Second Terrace follow a meandering west to east course and are cross-cut by those of the First Terrace which run roughly north-south along a course to the west of Shill Brook (Figs. 6 and 7). The boundary with block D has been drawn where the buried channel of the First Terrace appears to die out south of Little Clanfield.

The assessment (Table 4) is based on 12 MAU boreholes (four in the First Terrace, six in the Second Terrace and two in the gravels, probable First Terrace, beneath Alluvium), three Hydrogeological Department boreholes, and several records obtained from the Industry. The thickness of overburden ranges up to 1.1 m on exposed First Terrace and up to 0.7 m on the Second Terrace. On the areas of Alluvium the overburden ranges from 0.8 m to 4.2 m; the latter unusually high value, at borehole 30 SW 7, probably includes solifluxion material from the adjacent Second Terrace and is therefore not representative of the alluvial areas as a whole. The mean overburden thickness for the block is 0.8 m. The thickness of mineral ranges up to 6.1 m in the First Terrace, up to 7.5 m in the Second Terrace and up to 4.8 m beneath Alluvium. The mean mineral thickness for the block is 4.7 m.

Nine of the MAU boreholes proved mineral classified as sandy gravel (20 SE 9, 10, 14, 15, 19 and 21; 30 SW 2, 4 and 8), two proved gravel (20 SE 12 and 20) and one 'clayey' sandy gravel (30 SW 7). Mineral classified as gravel occurs in the First and Second terraces and consists of fine with coarse gravel 49 to 50 per cent, sand 44 to 47 per cent and clay and silt fines 4 to 6 per cent. Mineral classified as sandy gravel occurs mostly in the Second Terrace with some in the First Terrace and beneath Alluvium only at one sample point. The mineral in these boreholes consists of fine with coarse gravel 30 to 44 per cent, sand 50 to 62 per cent and clay and silt fines 4 to 8 per cent. Mineral classified as 'clayey' sandy gravel occurs only once, beneath Alluvium, and consists of fine with some coarse gravel 47 per cent, sand 52 per cent and silt fines 11 per cent. The mean grading for the block is gravel 41 per cent, sand 53 per cent and fines 6 per cent. The estimate of volume of mineral is $84.1 \text{ million m}^3 \pm 18 \text{ per cent}$.

Table 5. Mineral Assessment Unit data for resource block C.

MAU Borehole	Thickness (m)			Mean grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
30 NE 1	1.3	3.0	Alluvium/First Terrace	1	42	57	Gravel
2	1.5	6.0	Alluvium/First Terrace	3	42	55	Gravel
3	1.4	5.0	Alluvium/First Terrace	1	42	57	Gravel
4	0.5	5.9	Alluvium/First Terrace	4	41	55	Gravel
5	0.5	3.6	Second Terrace	2	30	68	Gravel
6	0.3	2.0	First Terrace (1A)	7	39	54	Gravel
9	0.8	4.0	First Terrace (1B)	8	44	48	Gravel

Table 6. Mineral Assessment Unit data for resource block D.

MAU Borehole	Thickness (m)			Mean grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
20 SE 7	0.5	2.7	First Terrace (1B)	8	54	38	Sandy gravel
SE 11	1.1	2.9	Second Terrace	5	42	53	Gravel
SE 22	0.7	3.0	Alluvium/First Terrace	6	57	37	Sandy gravel
29 NE 7	0.9	3.1	Alluvium/First Terrace	3	45	52	Gravel
NE 8	0.7	3.2	First Terrace (1A)	7	39	54	Gravel
NE 11	0.4	3.4	Alluvium/First Terrace	5	55	40	Sandy gravel
30 SW 9	0.5	3.4	Alluvium/First Terrace	12	64	24	'Clayey' sandy gravel
SW 11	0.8	3.4	Alluvium/First Terrace	6	55	59	Gravel
39 NW 5	0.6	1.6	First Terrace	8	43	49	Gravel
NW 6	0.5	2.7	First Terrace	7	52	41	Sandy gravel
NW 7	0.8	2.7	First Terrace	3	58	39	Sandy gravel

Block C

Block C extends along the Windrush Valley and covers an area of 12.6 km² of which 11.0 km² of First and Second Terrace deposits (in part concealed by Alluvium) are mineral bearing. The remainder consists of areas where bedrock outcrops between the terrace deposits, and quite extensive worked out areas in the First Terrace south of Hardwick. The Windrush appears to have been a major source of supply of gravel to the Thames Valley during the successive phases of terrace deposition and the block is distinctive in being the only one in which all the MAU boreholes proved mineral classified as gravel (so that the mean gravel content is over 50 per cent). The bedrock consists of Cornbrash, Kellaways Clay and Kellaways Sand around Witney and Oxford Clay to the south.

The assessment is based on seven MAU boreholes (Table 5), three Hydrogeological Department records, several boreholes along the Witney Bypass and records from two groups of closely spaced boreholes obtained from the Industry. Of the seven MAU boreholes, two investigated the First Terrace, one the Second Terrace and four the gravels (probable First Terrace) beneath Alluvium.

The thickness of overburden ranges up to 0.8 m on exposed First Terrace and up to 1.5 m on areas of Alluvium. Overburden in the one borehole sited on Second Terrace is 0.5 m thick. The mean overburden thickness for the block is 0.9 m. The thickness of mineral ranges up to 4 m in the First Terrace and up to 6 m beneath Alluvium. In the Second Terrace mineral of 3.6 m thickness was proved. The mean mineral thickness for the block is 4.2 m.

All the MAU boreholes proved mineral classified as gravel, which consists of fine with coarse gravel 48 to 68 per cent, sand 30 to 44 per cent and clay and silt fines 1 to 8 per cent. The mean grading for the block is gravel 56 per cent, sand 40 per cent and fines 4 per cent. The estimate of volume of mineral is 46.2 million m³ \pm 23 per cent.

Block D

Block D is a U-shaped area which trends west to east along the southern margin of the Thames Valley floor, in the central part of the sheet. One limb of the block lies north of the Thames, the other to the south with an elongated tract of Alluvium adjacent to the Thames in block G separating the two. The block includes deposits of moderate thickness (up to 3.4 m) of the First and Second terraces,

which were laid down south of the thicker buried channel deposits of block B. Following the deposition of the First Terrace, erosion by the Thames reduced the thickness of the gravels adjacent to the river and subsequently covered them with thick Alluvium (see block G).

Block D covers an area of 14.3 km² of which 12.5 km² is mineral bearing. The mineral occurs mainly in First Terrace deposits and in a few remnant patches of the Second Terrace occurring on low hills in the northern limb of the block (in the centre of the valley). The drift-free areas consist of Oxford Clay, which outcrops on the flanks of the low hills mentioned above. There are no worked-out areas. Bedrock beneath the terrace deposits on the valley floor is Oxford Clay. The assessment is based on 11 MAU boreholes (Table 6) and records from two groups of closely spaced boreholes obtained from the Industry. Of the 11 MAU boreholes, four investigated First Terrace deposits, five the gravels (probable First Terrace) beneath Alluvium and one the Second Terrace.

The thickness of overburden ranges up to 0.8 m on the First Terrace and up to 0.9 m in areas of Alluvium. The one borehole sited on the Second Terrace proved 1.1 m of overburden. The mean overburden thickness for the block is 0.7 m. The thickness of mineral ranges up to 2.7 m in the First Terrace, up to 3.4 m beneath Alluvium and is 2.9 m in the one Second Terrace borehole. The mean mineral thickness for the block is 2.9 m.

Five MAU boreholes proved mineral classified as gravel (20 SE 11, 29 NE 7 and 8; 30 SW 11 and 39 NW 5), five as sandy gravel (20 SE 7 and 22; 29 NE 11, 39 NW 6 and 7), and one (30 SW 9) as 'clayey' sandy gravel. Two of the boreholes in gravel were in the First Terrace one in the Second Terrace and two through Alluvium. The gravel consists of fine with coarse gravel 49 to 59 per cent, sand 39 to 55 per cent, and clay and silt fines 5 to 8 per cent.

Mineral classified as sandy gravel occurs in the First Terrace and beneath Alluvium. It consists of fine with coarse gravel 37 to 41 per cent, sand 52 to 58 per cent and clay and silt fines 3 to 8 per cent. The one borehole containing mineral classified as 'clayey' sandy gravel is sited on Alluvium and consists of fine with some coarse gravel 24 per cent, sand 64 per cent and clay and silt fines 12 per cent.

Table 7. Mineral Assessment Unit data for resource block E.

MAU Borehole	Thickness (m)			Mean grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines	Sand	Gravel	
				-1/16 mm	-4+1/16 mm	+4 mm	
30 SW 14	2.0	3.2	Alluvium/First Terrace	8	64	28	Sandy gravel
30 SW 15	1.3	0.5	Second Terrace	8	48	44	Sandy gravel
30 SW 16	1.0	3.2	Alluvium/First Terrace	6	58	36	Sandy gravel
30 SW 18	0.7	2.5	Second Terrace	6	56	38	Sandy gravel
30 SE 1	2.2	2.4	Alluvium/First Terrace	2	55	43	Sandy gravel
2	1.2	2.8	Second Terrace	6	50	44	Sandy gravel
3	1.0	2.4	Alluvium/First Terrace	1	47	52	Gravel
6	1.0	4.2	Alluvium/First Terrace	9	55	36	Sandy gravel
7	0.5	2.1	Second Terrace	2	61	37	Sandy gravel
10	0.6	3.6	First Terrace	15	60	25	'Clayey' Sandy gravel
11	1.0	0.5	Second Terrace	6	73	21	Pebbly sand
14	0.8	3.6	Alluvium/First Terrace	4	59	37	Sandy gravel
15	1.6	2.8	Alluvium/First Terrace	3	55	42	Sandy gravel

Table 8. Mineral Assessment Unit data for resource block F.

MAU Borehole	Thickness (m)			Mean grading (% by weight)			Descriptive category
	Overburden	Mineral	Geological classification	Fines	Sand	Gravel	
				-1/16 mm	-4+1/16 mm	+4 mm	
20 SE 4	0.5	2.1	First Terrace (1B)	5	56	39	Sandy gravel
29 NW 4	0.6	2.0	Alluvium/First Terrace	4	47	49	Gravel
5	3.3	1.1	Alluvium/First Terrace	2	36	62	Gravel
7	0.4	2.1	First Terrace (1A)	7	41	52	Gravel
9	1.3	2.8	Alluvium/First Terrace	3	44	53	Gravel
12	2.0	1.0	Alluvium/First Terrace	10	41	49	'Clayey' gravel
14	1.9	2.3	Alluvium/First Terrace	3	39	58	Gravel
29 NE 5	0.5	2.6	First Terrace (1B)	6	39	55	Gravel
6	0.8	2.2	First Terrace (1B)	6	54	40	Sandy gravel

The mean grading for the block is gravel 42 per cent, sand 52 per cent and fines 6 per cent. The estimate of volume of mineral is 36.3 million m³ ± 11 per cent.

Block E

Block E covers the eastern part of the Thames Valley floor, where Second Terrace deposits of moderate thickness have been dissected by a wide meander of First Terrace channel deposits, now concealed beneath Alluvium (Fig. 7). The First Terrace deposits are also of only moderate thickness, due to erosion prior to the deposition of the Alluvium. The block is distinctive in its relatively low gravel content. The boundary with block D coincides with the boundary between exposed and concealed mineral. West of Yelford [360 048] the boundary is drawn where the terrace gravels are believed to thin out beneath the Alluvium.

Block E covers an area of 16.4 km² of which 14.0 km² is mineral bearing. The mineral occurs in deposits mapped as First Terrace and Second Terrace. The non-mineral areas consist of Oxford Clay, which outcrops between the First and Second terraces (in the core of the meander, and as a bench at the confluence of the Thames and Windrush) and the worked out areas in both the First Terrace (wet pits) and Second Terrace (dry pits), which occur principally south and north of Brighthampton respectively.

The assessment is based on 13 MAU boreholes (Table 7) and records from three groups of closely spaced boreholes obtained from the Industry. Of the 13 MAU boreholes, one (30 SE 10) investigated the First Terrace, five (30 SW 15 and 18; 30 SE 2, 7 and 11) the Second Terrace and seven (30 SW 14 and 16; 30 SE 1, 3, 6, 14 and 15) the gravels (probable First Terrace) beneath Alluvium.

The thickness of overburden is 0.6 m in the one borehole on the First Terrace, up to 1.3 m on the Second Terrace and up to 2.2 m in areas of Alluvium. The mean overburden thickness for the block is 1.1 m, which is quite high, as a consequence of the large area covered by Alluvium. The thickness of mineral is 3.6 m in the only borehole on the First Terrace, up to 2.8 m in the Second Terrace and up to 4.2 m beneath Alluvium, but the mean mineral thickness for the block is only 2.7 m.

Of the 13 MAU boreholes in the block

(Table 7) the majority (30 SW 14, 15, 16 and 18; 30 SE 1, 2, 6, 7, 14 and 15) contained mineral classified as sandy gravel, one (30 SE 3) contained gravel, one (30 SE 11) pebbly sand and one (30 SE 10) 'clayey' sandy gravel. Mineral classified as sandy gravel occurs principally in the gravels (probable First Terrace) beneath Alluvium and in the Second Terrace and consist of fine with some coarse gravel 28 to 44 per cent, sand 48 to 64 per cent, and silt and clay fines to 9 per cent.

The only borehole which proved mineral classified as gravel was sited on Alluvium and the underlying deposits, probably First Terrace, consist of fine with coarse gravel 52 per cent, sand 47 per cent, and fines only 1 per cent. The borehole which proved pebbly sand is sited on the Second Terrace and contains fine with very little coarse gravel 21 per cent, sand 73 per cent and silt and clay fines 6 per cent. The only borehole which proved mineral classified as 'clayey' sandy gravel is sited on the First Terrace and contains fine with some coarse gravel 25 per cent, sand 60 per cent, and fines of silt and clay 15 per cent.

The mean grading for the block is gravel 37 per cent, sand 57 per cent and fines 6 per cent. The estimate of volume of mineral is 37.8 million m³ ± 20 per cent.

Block F

Block F is in the west of the sheet and includes First Terrace deposits and gravels beneath Alluvium of only moderate to low thickness, with thick overburden in the areas of Alluvium. The block covers an area of 11.1 km² of which 10.5 km² is mineral bearing, the remainder consisting of Oxford Clay which outcrops along the southern margin of the block. There are no worked out areas. The assessment is based on nine MAU boreholes (Table 8), one Hydrogeological Department record, and records from a group of closely spaced boreholes obtained from the Industry. Of the nine MAU boreholes in the block, four (20 SE 4, 29 NW 7, 29 NE 5 and 6) investigated the First Terrace and five (29 NW 4, 5, 9, 12 and 14) the gravels (probable First Terrace) beneath Alluvium.

The thickness of overburden on the First Terrace ranges up to 0.8 m and up to 3.3 m on Alluvium, giving a relatively high mean overburden thickness for the block of 1.1 m.

Of the nine MAU boreholes in the block, six (20 NW 4, 5, 7, 9, 14 and 29 NE 5) contain mineral classified as gravel, two (20 SE 4 and 29 NE 6) sandy gravel and one (29 NW 12) 'clayey' gravel. Mineral classified as gravel occurs in the First Terrace and beneath Alluvium and consists of fine with coarse gravel 52 to 62 per cent, sand 36 to 47 per cent and fines of silt and clay 2 to 7 per cent. Mineral classified as sandy gravel was proved only in the First Terrace and consists in the two boreholes of fine with coarse gravel 39 and 40 per cent, sand 56 and 54 per cent and fines of silt and clay 5 and 6 per cent respectively. Mineral classified as 'clayey' gravel occurs in a borehole sited on Alluvium and consists of fine with coarse gravel 49 per cent, sand 41 per cent and silt and clay fines 10 per cent.

The mean grading for the block is gravel 48 per cent, sand 47 per cent and fines 5 per cent. The estimate of volume of mineral is 22.0 million m³ ±22 per cent.

Block G

Block G comprises two areas totalling 16.4 km², in which the 16.2 km² of mineral is thin and has a low gravel content compared with the other blocks. The western area includes First Terrace deposits adjacent to the Thames east of Radcot and the eastern area includes the First Terrace deposits around Brighthampton. The overburden (Alluvium) in the western part is relatively thick.

The assessment is based on 17 MAU boreholes (Table 9), two Hydrogeological Department boreholes and records from two groups of closely spaced boreholes drilled by the Industry. Of the 17 MAU boreholes in the block, 14 (20 SE 13 and 17; 29 NE 9; 30 SW 3, 6, 10, 12 and 17; 30 SE 4, 5, 8, 9, 12 and 39 NE 10) were sited on Alluvium and the remaining three (30 SE 13, 39 NE 11 and 12) on the First Terrace.

The thickness of overburden on the First Terrace ranges up to 1.6 m and in the area of Alluvium up to 2.5 m; the mean for the whole block is 1.5 m. The thickness of mineral ranges up to 2.4 m and has a relatively low mean value of 1.6 m.

Of the 17 MAU boreholes, five (20 SE 13 and 17; 30 SW 3, 6 and 10) proved gravel, five (29 NE 9, 30 SW 17, 30 SE 9 and 12 and 39

NE 10) sandy gravel, one (30 SE 4) 'clayey' gravel, one (30 SE 13) 'clayey' sandy gravel, one (39 NE 11) 'clayey' pebbly sand, and three (30 SE 5 and 8; 39 NE 12) did not prove mineral. Mineral classified as gravel occurs only beneath Alluvium and consists of fine with coarse gravel 50 to 57 per cent, sand 40 to 47 per cent and silt and clay fines 2 to 6 per cent. Mineral classified as sandy gravel also occurs only beneath Alluvium and consists of fine with a trace of coarse gravel generally 30 to 32 per cent, sand 62 to 66 per cent and clay and silt fines 3 to 6 per cent. The sandy gravel in borehole 39 NE 10 differs considerably from the other sandy gravel deposits in containing gravel 48 per cent, sand 51 per cent and only 1 per cent of fines.

The only borehole proving 'clayey' gravel is sited on Alluvium; the mineral contains fine with some coarse gravel 46 per cent, sand 44 per cent and clayey silt fines 10 per cent. The single borehole proving 'clayey' sandy gravel is sited on the First Terrace and the mineral consists of fine with some coarse gravel 31 per cent, sand 58 per cent, and silt and clay fines 11 per cent. The only borehole proving 'clayey' pebbly sand is also sited on the First Terrace and the mineral consists of fine with a trace of coarse gravel 15 per cent, sand 73 per cent and clayey silt fines 12 per cent. Of the three boreholes in waste, two are on Alluvium and the other is on the First Terrace. The deposits either consist entirely of alluvial silt and clay (30 SE 8), or contain gravel too thin to be classified as mineral (30 SE 5 and 39 NE 12). The mean grading for the block is gravel 39 per cent, sand 56 per cent and fines 5 per cent. The estimate of volume of mineral is 26.2 million m³ ±19 per cent.

Block H

Seven areas which include the scattered remnants of the Third and Fourth terraces and a few parts of the First and Second terraces are grouped together as block H (Fig. 1). The block covers an area of 50 km² of which 13.1 km² is mineral bearing. The bedrock ranges in age from Oxford Clay in the south to Forest Marble in the north. Apart from a patch of Third Terrace to the south of the River Thames, most of the block lies on the northern slopes of the Thames Valley.

The assessment is based on 18 Mineral Assessment Unit boreholes, three Hydrogeological Department boreholes and three other boreholes. The sand and gravel ranges in thickness from under 1.0 m at several

Table 9. Mineral Assessment Unit data for resource block G.

MAU Borehole	Thickness (m)		Geological classification	Mean grading (% by weight)			Descriptive category
	Overburden	Sand and gravel		Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
20 SE 13	0.9	2.0	Alluvium/First Terrace	6	42	52	Gravel
17	0.8	2.4	Alluvium/First Terrace	3	40	57	Gravel
29 NE 9	2.1	1.2	Alluvium/First Terrace	3	65	32	Sandy gravel
30 SW 3	1.7	1.6	Alluvium/First Terrace	3	47	50	Gravel
6	2.4	1.7	Alluvium/First Terrace	2	44	54	Gravel
10	2.5	1.9	Alluvium/First Terrace	3	46	51	Gravel
12	2.3	2.1	Alluvium/First Terrace	5	75	20	Pebbly sand
17	0.6	2.4	Alluvium/First Terrace	4	66	30	Sandy gravel
30 SE 4	1.3	1.7	Alluvium/First Terrace	10	44	46	'Clayey' gravel
5	3.3	0.3	Alluvium	-	-	-	Waste
8	1.5	0.0	Alluvium	-	-	-	Waste
9	2.1	2.1	Alluvium/First Terrace	5	65	30	Sandy gravel
12	1.5	1.4	Alluvium/First Terrace	6	62	32	Sandy gravel
13	0.5	1.5	First Terrace	11	58	31	'Clayey' sandy gravel
39 NE 10	2.3	2.2	Alluvium/First Terrace	1	51	48	Sandy gravel
11	0.7	2.4	First Terrace	12	73	15	'Clayey' pebbly sand
12	1.6	0.2	First Terrace	-	-	-	Waste

localities to 3.0 m in borehole 20 SE 18 and has a mean of 1.2 m. First Terrace gravels range in thickness from 0.7 m in borehole 30 SW 1 to 1.7 m in borehole 20 NE 29; Second Terrace gravels range in thickness from 0.4 m in borehole 20 SW 10 to 2.1 m in borehole 20 SW 14; Third Terrace gravels range in thickness from 0.5 m in borehole 20 SE 5 to 3.0 m in borehole 20 SE 18; Fourth Terrace gravels range in thickness from 1.0 m in borehole 30 NW 2 to 1.4 m in borehole 30 NW 3. The mean thickness of overburden is 0.9 m; the range is from 0.2 m in boreholes 30 NW 1 and 236/253 to 2.0 m in borehole 30 NW 3.

The grading results (Table 10) indicate a broad range from 'very clayey' gravel in borehole 20 SE 5 to gravel in borehole 20 SW 14. The fines content varies from 5 per cent in borehole 20 SE 18 to 25 per cent in borehole 30 SW 5. The sand content varies from 27 per cent in borehole 20 SW 10 to 60 per cent in boreholes 30 NW 3 and 20 SE 8. The gravel content varies from 24 per cent in borehole 30 SW 5 to 62 per cent in borehole 20 SW 10. The mean grading for the resource block is fines 10 per cent, sand 50 per cent and gravel 40 per cent. The estimated volume of mineral is 15.7 million m³ †32 per cent.

Table 10. Mineral Assessment Unit data for resource block H.

MAU Borehole	Thickness (m)			Mean grading (% by weight)			Descriptive category
	Overburden	Sand and gravel	Geological classification	Fines -1/16 mm	Sand -4+1/16 mm	Gravel +4 mm	
30 NE 8	1.7	0	? Head	-	-	-	Waste
30 SW 13	3.3	0	Alluvium	-	-	-	Waste
20 SW 6	1.4	0	Alluvium	-	-	-	Waste
20 NE 29	0.3	1.7	First Terrace	9	53	38	Sandy gravel
30 NW 1	0.2	1.0	First Terrace	24	34	42	'Clayey' sandy gravel
30 SW 1	1.2	0.7	Alluvium/First Terrace	-	-	-	Waste
20 SW 5	0.8	1.7	Second Terrace	14	47	39	'Clayey' sandy gravel
20 SW 8	1.5	0	Second Terrace	-	-	-	Waste
20 SW 10	1.0	0.4	Second Terrace	11	27	62	'Clayey' gravel
20 SW 14	0.9	2.1	Second Terrace	8	39	53	Gravel
20 SW 7	0.7	1.4	Third Terrace	5	38	57	Gravel
20 SW 15	0.7	1.1	Third Terrace	15	42	43	'Clayey' gravel
20 SE 5	1.4	0.5	Third Terrace	20	36	44	'Very clayey' gravel
20 SE 8	0.9	2.1	Third Terrace	7	60	33	Sandy gravel
20 SE 18	0.6	3.0	Third Terrace	5	58	37	Sandy gravel
30 SW 5	1.4	1.2	Third Terrace	25	51	24	'Very clayey' sandy gravel
30 NW 2	0.5	1.0	Fourth Terrace	12	53	35	'Clayey' sandy gravel
30 NW 3	2.0	1.4	Fourth Terrace	10	60	30	'Clayey' sandy gravel
30 NE 7	1.0	1.1	Fourth Terrace	11	45	44	'Clayey' sandy gravel

Appendix A: Field and Laboratory Procedures

Trial and error during initial studies of the complex and variable glacial deposits of East Anglia and Essex showed that an absolute minimum of five sample points evenly distributed across the sand and gravel are needed to provide a worthwhile statistical assessment, but that, where possible, there should be not less than ten. Sample points are any points for which adequate information exists about the nature and thickness of the deposit and may include boreholes other than those drilled during the survey and exposures. In particular, the cooperation of sand and gravel operators ensures that boreholes are not drilled where reliable information is already available; although this may be used in the calculations, it is held confidentially by the Institute and cannot be disclosed.

The mineral shown on each 1:25 000 sheet is divided into resource blocks. The arbitrary size selected, 10 km², is a compromise to meet the aims of the survey by providing sufficient sample points in each block. As far as possible the block boundaries are determined by geological boundaries so that, for example, glacial and river terrace gravels are separated. Otherwise division is by arbitrary lines, which may bear no relationship to the geology. The blocks are drawn provisionally before drilling begins.

A reconnaissance of the ground is carried out to record any exposures and inquiries are made to ascertain what borehole information is available. Borehole sites are then selected to provide an even pattern of sample points at a density of approximately one per square kilometre. However, because broad trends are independently overlain by smaller scale characteristically random variations, it is unnecessary to adhere to a square grid pattern. Thus such factors as ease of access and the need to minimise disturbance to land and the public are taken into account in siting the holes; at the same time it is necessary to guard against the possibility that ease of access (that is, the positions of roads and farms) may reflect particular geological conditions, which may bias the drilling results.

The drilling machine employed should be capable of providing a continuous sample representative of all unconsolidated deposits, so that the in-situ grading can be determined, if necessary, to a depth of 30 m (100 ft) at a diameter of about 200 mm (8 in), beneath different types of overburden. It should be reliable, quiet, mobile and relatively small (so that it can be moved to sites of difficult

access). Shell and auger rigs have proved to be almost ideal.

The rigs are modified to enable deposits above the water table to be drilled 'dry', instead of with water added to facilitate the drilling, to minimise the amount of material drawn in from outside the limits of the hole. The samples thus obtained are representative of the in-situ grading, and satisfy one of the most important aims of the survey. Below the water-table the rigs are used conventionally, although this may result in the loss of some of the fines fraction and the pumping action of the bailer tends to draw unwanted material into the hole from the sides or the bottom.

A continuous series of bulk samples is taken throughout the sand and gravel. Ideally samples are composed exclusively of the whole of the material encountered in the borehole between stated depths. However, care is taken to discard, as far as possible, material which has caved or has been pumped from the bottom of the hole. A new sample is commenced whenever there is an appreciable lithological change within the sand and gravel, or at every 1 m (3.3 ft) depth. The samples each weighing between 25 and 45 kg (55 and 100 lb), are despatched in heavy duty polythene bags to a laboratory for grading. The grading procedure is based on British Standard 1377 (Anon., 1967). Random checks on the accuracy of the grading are made in the laboratories of the Institute's Geochemical Division.

All data, including mean grading analysis figures calculated for the total thickness of the mineral, are entered on standard record sheets, abbreviated copies of which are reproduced in Appendix F.

Detailed records may be consulted at the appropriate offices of the Institute, upon application to the Head, Mineral Assessment Unit.

Appendix B: Statistical Procedure

STATISTICAL ASSESSMENT

1. A statistical assessment is made of an area of mineral greater than 2 km², if there is a minimum of five evenly spaced boreholes in the resource block (for smaller areas see para. 12 below).
2. The simple methods used in the calculations are consistent with the amount of data provided by the survey. Conventional symmetrical confidence limits are calculated for the 95 per cent probability level. That is there is a 5 per cent or one in twenty

chance of a result falling outside the stated limits.

- The volume estimate (V) for the mineral in a given block is the product of the two variables, the sampled areas (A) and the mean thickness (\bar{l}_m) calculated from the individual thicknesses at the sample points. The standard deviations for these variables are related such that

$$S_V = \sqrt{S_A^2 + S_{\bar{l}_m}^2} \dots\dots(1)$$

- The above relationship may be transposed such that

$$S_V = S_{\bar{l}_m} \sqrt{1 + \frac{S_A^2}{S_{\bar{l}_m}^2}} \dots\dots(2)$$

From this it can be seen that as $\frac{S_A^2}{S_{\bar{l}_m}^2}$ tends to 0, S_V tends to $S_{\bar{l}_m}$.

If, therefore, the standard deviation for area is small with respect to that for mean thickness, the standard deviation for volume approximates to that for mean thickness.

- Given that the number of approximately evenly spaced sample points in the sampled area is n, with mineral thickness measurements $l_{m_1}, l_{m_2}, \dots, l_{m_n}$, then the best

estimate of mean thickness, $\bar{l}_m =$

$$\frac{\sum (l_{m_1} + l_{m_2} \dots\dots l_{m_n})}{n}$$

For groups of closely spaced boreholes a discretionary weighting factor may be applied to avoid bias (see note on weighting below). The standard deviation for mean thickness, $S_{\bar{l}_m}$ expressed as a proportion of the mean thickness is given by

$$S_{\bar{l}_m} = \frac{1}{\bar{l}_m} \sqrt{\frac{(l_m - \bar{l}_m)^2}{(n - 1)}}$$

where l_m is any value in the series l_{m_1} to l_{m_n} .

- The sampled area in each resource block is coloured pink on the map. Wherever possible, calculations relate to the mineral within mapped geological boundaries (which may not necessarily correspond to the

limits of a deposit). Where the area is not defined by a mapped boundary, that is, where the boundary is inferred, a distinctive symbol is used. Experience suggests that the errors in determining area are small relative to those in thickness.

The relationship

$$\frac{S_A}{S_{\bar{l}_m}} \leq 1/3 \text{ is assumed in all cases}$$

It follows from equation (2) that

$$S_{\bar{l}_m} \leq S_V \leq 1.05 S_{\bar{l}_m} \dots\dots(3)$$

- The limits on the estimate of mean thickness of mineral, $L_{\bar{l}_m}$, may be expressed in absolute units

$$\pm \frac{t}{\sqrt{n}} \times S_{\bar{l}_m}$$

or as a percentage

$$\pm \frac{t}{\sqrt{n}} \times S_{\bar{l}_m} \times \frac{100}{\bar{l}_m} \text{ per cent}$$

where t is Student's t at the 95 per cent probability level for (n - 1) degrees of freedom, evaluated by reference to statistical tables. (In applying Student's t it is assumed that the measurements are distributed normally).

- Values of t at the 95 per cent probability level for values of n up to 20 are as follows:

n	t	n	t
1	∞	11	2.228
2	12.706	12	2.201
3	4.303	13	2.179
4	3.182	14	2.160
5	2.776	15	2.145
6	2.571	16	2.131
7	2.447	17	2.120
8	2.365	18	2.110
9	2.306	19	2.101
10	2.262	20	2.093

(from Table 12, Biometrika Tables for Statisticians, Volume 1, Second Ed. Cambridge University Press, 1962). When n is greater than 20, 1.96 is used (the value of t when n is infinity).

- In calculating confidence limits for volume, L_V , the following inequality corresponding to equation (3) is applied:

$$L_{\bar{l}_m} \leq L_V \leq 1.05 L_{\bar{l}_m}$$

10. In summary, for values of n between 5 and 20, L_V is calculated as

$$\frac{1.05 \times t}{\bar{l}_m} \times \sqrt{\frac{\sum(l_m - \bar{l}_m)^2}{n(n-1)}} \times 100 \text{ per cent}$$

and when n is greater than 20, as

$$\frac{1.05 \times 1.96}{\bar{l}_m} \times \sqrt{\frac{\sum(l_m - \bar{l}_m)^2}{n(n-1)}} \times 100 \text{ per cent}$$

11. The application of this procedure to a fictitious area is illustrated in Figs. 9 and 10.

INFERRED ASSESSMENT

12. If the sampled area of mineral in a resource block is between 0.25 km^2 and 2 km^2 an assessment is inferred, based on geological and topographical information usually supported by the data from one or two boreholes. The volume of mineral is calculated as the product of the area, measured from field data, and the estimated thickness. Confidence limits are not calculated.

13. In some cases a resource block may include an area left uncoloured on the map, within which mineral (as defined) is interpreted to be generally absent. If there is reason to believe that some mineral may be present, an inferred assessment may be made.

14. No assessment is attempted for an isolated area of mineral less than 0.25 km^2 .

15. Note on Weighting

The thickness of a deposit at any point may be governed solely by the position of the point in relation to a broad trend. However, most sand and gravel deposits also exhibit a random pattern of local, and sometimes considerable, variation in thickness. Thus the distribution of sample points need be only approximately regular and in estimating the mean thickness only simple weighting is necessary. In practice, equal weighting can often be applied to thicknesses at all sample points. If, however, there is a distinctly unequal distribution of points, bias is avoided by dividing the sampled area into broad zones, to each of which a value roughly proportional to its area is assigned. This value is then shared between the data points within the zone as the weighting factor.

Appendix C: Classification and Description of Sand and Gravel

For the purposes of assessing resources of

sand and gravel a classification should take account of economically important characteristics of the deposit, in particular the absolute content of fines and the ratio of sand to gravel.

The terminology commonly used by geologists when describing sedimentary rocks (Wentworth, 1922) is not entirely satisfactory for this purpose. For example, Wentworth proposed that a deposit should be described as a 'gravelly sand' when it contains more sand than gravel and there is at least 10 per cent of gravel, provided that there is less than 10 per cent of material finer than sand (less than $1/16 \text{ mm}$) and coarser than pebbles (more than 64 mm diameter). Because deposits containing more than 10 per cent fines are not embraced by this system a modified binary classification based on Willman (1942) has been adopted.

When the fines content exceeds 40 per cent the material is not considered to be potentially workable and falls outside the definition of mineral. Deposits which contain 40 per cent fines or less are classified primarily on the ratio of sand to gravel but qualified in the light of the fines content, as follows: less than 10 per cent fines - no qualification; 10 per cent or more but less than 20 per cent fines - 'clayey'; 20 to 40 per cent fines - 'very clayey'.

The term 'clay' (as written, with single quote marks) is used to describe all material passing $1/16 \text{ mm}$. Thus it has no mineralogical significance and includes particles falling within the size range of silt. The normal meaning applies to the term clay where it does not appear in single quotation marks.

The ratio of sand to gravel defines the boundaries between sand, pebbly sand, sandy gravel and gravel (at 19:1, 3:1 and 1:1).

Thus it is possible to classify the mineral into one of twelve descriptive categories (see Fig. 11). The procedure is as follows:

1. Classify according to ratio of sand to gravel;
2. Describe fines.

For example, a deposit grading 11 per cent gravel, 70 per cent sand and 19 per cent fines is classified as 'clayey' pebbly sand. This short description is included in the borehole log (see Note 11, p. 30).

Many differing proposals exist for the classification of the grain size of sediments (Atterberg, 1905; Udden, 1914; Wentworth, 1922; Wentworth, 1935; Allen, 1936; Twenhofel, 1937; Lane and others, 1947). As Archer (1970a, b) has emphasised, there is a

pressing need for a simple metric scale acceptable to both scientific and engineering interests, for which the class limit sizes correspond closely with certain marked changes in the natural properties of mineral particles. For example, there is an important change in the degree of cohesion between particles at about the 1/16 mm size, which approximates to the generally accepted boundary between silt and sand. These and other requirements are met by a system based on Udden's geometric scale and a simplified form of Wentworth's terminology (Table 11), which is used in this Report.

The fairly wide intervals in the scale are consistent with the general level of accuracy of the qualitative assessments of the resource blocks. Three sizes of sand are recognised, fine ($-\frac{1}{4}$ +1/16 mm), medium (-1 + $\frac{1}{4}$ mm) and coarse (-4 +1 mm). The boundary at 16 mm distinguishes a range of finer gravel (-16 +4 mm), often characterised by abundance of worn tough pebbles of vein quartz, from larger pebbles often of notably different materials. The boundary at 64 mm, distinguishes pebbles from cobbles. The term 'gravel' is used loosely to denote both pebble-sized and cobble-sized material.

The size distribution of borehole samples is determined by sieve analysis, which is presented by the laboratory as logarithmic cumulative curves (see, for example, British Standard 1377 (Anon., 1967). In this report the grading is tabulated on the borehole record sheets (Appendix F), the intercepts corresponding with the simple geometric scale 1/16 mm, $\frac{1}{4}$ mm, 1 mm, 4 mm, 16 mm and so on as required. Original sample grading curves are available for reference at the appropriate office of the Institute.

Each bulk sample is described, subjectively, by a geologist at the borehole site. Being based on visual examination, the description of the grading is inexact, the accuracy depending on the experience of the observer. The descriptions recorded are modified, as necessary, when the laboratory results become available.

The relative proportions of the rock types present in the gravel fraction are indicated by the use of the words 'and' or 'with'. For example, 'flint and quartz' indicates very approximate equal proportions with neither constituent accounting for less than about 25 per cent of the whole; 'flint with quartz' indicates that flint is dominant and quartz, the principal accessory rock type, comprises 5 to 25 per cent of the whole. Where the accessory material accounts for less than 5 per cent of the whole, but is still readily apparent, the phrase 'with some' has been used. Rare constituents are referred to as

'trace'.

The terms used in the field to describe the degree of rounding of particles, which is concerned with the sharpness of the edges and corners of a clastic fragment and not the shape (after Pettijohn, 1957), are as follows.

Angular: showing little or no evidence of wear; sharp edges and corners.

Subangular: showing definite effects of wear. Fragments still have their original form but edges and corners begin to be rounded off.

Subrounded: showing considerable wear. The edges and corners are rounded off to smooth curves. Original grain shape is still distinct.

Rounded: original faces almost completely destroyed, but some comparatively flat surfaces may still remain. All original edges and corners have been smoothed off to rather broad curves. Original shape is still apparent.

Well-rounded: no original faces, edges or corners left. The entire surface consists of broad curves; flat areas are absent. The original shape is suggested by the present form of the grain.

Table 11. Classification of gravel, sand and fines

Size limits	Grain size description	Qualification	Primary classification
64 mm	Cobble		Gravel
16 mm	Pebble	Coarse	
4 mm		Fine	
1 mm	Sand	Coarse	Sand
$\frac{1}{4}$ mm		Medium	
1/16 mm		Fine	
	Fines (silt and clay)		Fines

Block Calculation 1:25 000 } Fictitious
 Block }

Area Block: 11.08 km² Volume Overburden: 21 million m³
 Mineral: 8.32 km² Mineral: 54 million m³

Mean Thickness Confidence limits of the estimate of mineral volume
 Overburden: 2.5 m at the 95 per cent probability level: ± 20 per cent
 Mineral: 6.5 m That is, the volume of mineral (with 95 per cent
 probability): 54 ± 11 million m³

Thickness estimate: measurements in metres
 l_o = overburden thickness l_m = mineral thickness

Sample point	Weighting w	Overburden		Mineral		Remarks	
		l_o	wl_o	l_m	wl_m		
SE 14	1	1.5	1.5	9.4	9.4	} MAU boreholes	
SE 18	1	3.3	3.3	5.8	5.8		
SE 20	1	nil	-	6.9	6.9		
SE 22	1	0.7	0.7	6.4	6.4		
SE 23	1	6.2	6.2	4.1	4.1		
SE 24	1	4.3	4.3	6.4	6.4		
SE 17	$\frac{1}{2}$	1.2	1.6	9.8	7.2		} Hydrogeological Dept record
123/45	$\frac{1}{2}$	2.0		4.6			
1	$\frac{1}{4}$	2.7	2.5	7.3	5.8	} Close group of four boreholes (commercial)	
2	$\frac{1}{4}$	4.5		3.2			
3	$\frac{1}{4}$	0.4		6.8			
4	$\frac{1}{4}$	2.8		5.9			
Totals	$\Sigma w = 8$	$\Sigma wl_o = 20.1$		$\Sigma wl_m = 52.0$			
Means		$\bar{l}_o = 2.5$		$\bar{l}_m = 6.5$			

Calculation of confidence limits

l_m	$(l_m - \bar{l}_m)$	$(l_m - \bar{l}_m)^2$
9.4	2.9	8.41
5.8	0.7	0.49
6.9	0.4	0.16
6.4	0.1	0.01
4.1	2.4	5.76
6.4	0.1	0.01
7.2	0.7	0.49
5.8	0.7	0.49

$$\Sigma(l_m - \bar{l}_m)^2 = 15.82$$

$$n = 8$$

$$t = 2.365$$

L_V is calculated as

$$1.05 \times \frac{t}{\bar{l}_m} \sqrt{\frac{\Sigma(l_m - \bar{l}_m)^2}{n(n-1)}} \times 100$$

$$= 1.05 \times \frac{2.365}{6.5} \sqrt{\frac{15.82}{8 \times 7}} \times 100$$

$$= 20.3$$

$$\approx 20 \text{ per cent}$$

Fig. 9. Example of resource block assessment: statement and calculation

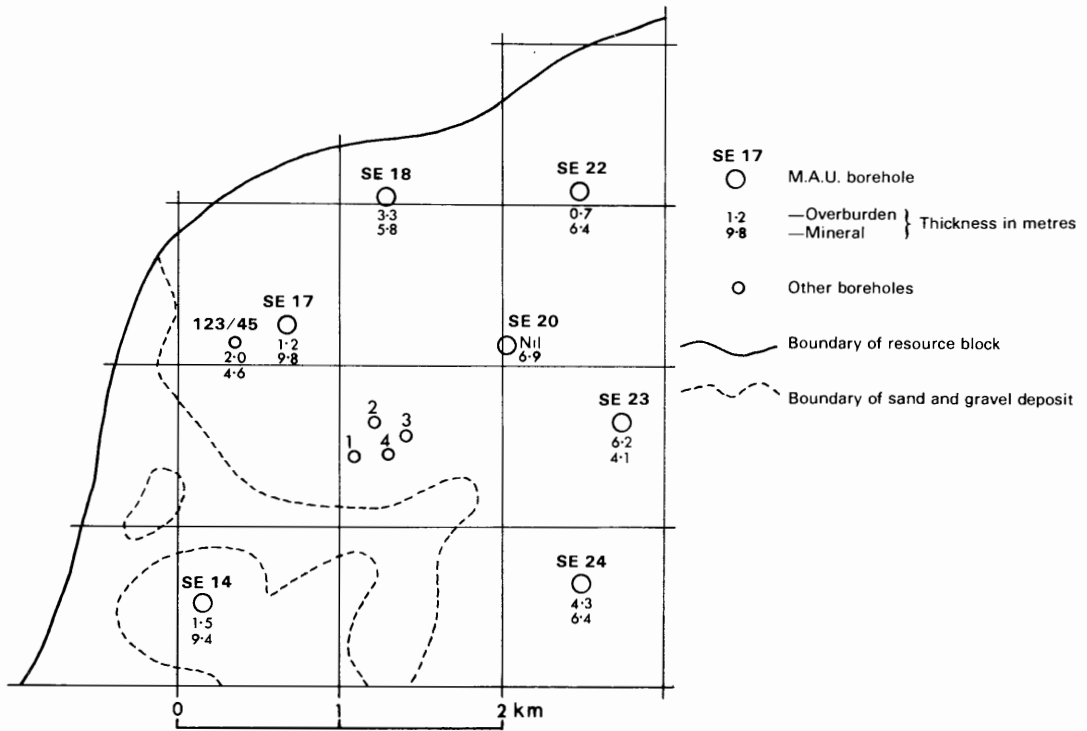


Fig. 10. Example of resource block assessment: map of a fictitious block

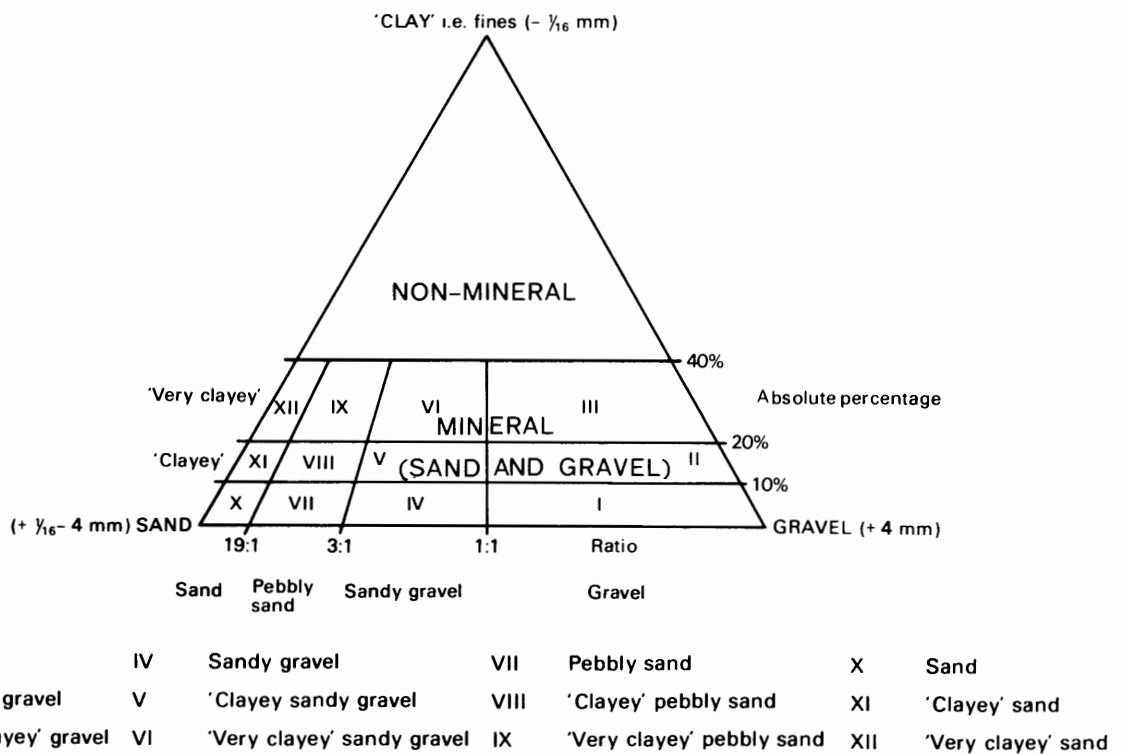


Fig. 11. Diagram to show the descriptive categories used in the classification of sand and gravel

Appendix D: Explanation of the Borehole Records

ANNOTATED EXAMPLE

SP 20 SE 4¹ 2557 0008² Parson's Barn,³ Kelmscott Block F

Surface level (+69.5 m) +228 ft⁴ ⁷Overburden 0.5 m (1.5 ft)
 Water struck at (+68.0 m)⁵ Mineral 2.1 m (7.0 ft)
 Shell and auger (modified) 152 mm (6 in) diameter⁶ Waste 0.2 m (0.5 ft)
 June 1971 Bedrock 0.5 m+ (1.5 ft+)⁹

LOG

		Thickness	Depth ⁸
		m	m
		(ft)	(ft)
	Soil	0.3	0.3
		(1.0)	(1.0)
¹⁰ First Terrace Deposits	¹¹ Clay, silty, brown	0.2	0.5
		(0.5)	(1.5)
	Sandy gravel	2.1	2.6
		(7.0)	(8.5)
	Gravel: fine with a trace of coarse to 1.5 m, passing into fine with coarse. Subrounded limestone, with some subangular flint, a trace of well rounded quartz, and a few shells		
	Sand: medium and coarse with some fine, slightly silty, yellowish-brown		
	Silt, sandy, blue	0.2	2.8
		(0.5)	(9.0)
Oxford Clay	Clay, stiff, bluish-grey with a few shells	0.5+	3.3
		(1.5+)	(11.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	¹³ Percentages			
				Fines	Sand	Gravel	
¹⁴ Gravel	39	+16	¹² 0.5 - 1.5	7	62	31	
		-16+4		33	4	50	46
Sand	56	-4+1					
		-1+ $\frac{1}{4}$		24			
		- $\frac{1}{4}$ +1/16		8			
Fines	5	-1/16					

The numbered paragraphs below correspond with the annotations given on the specimen record above.

1. Borehole Registration Number

Each Mineral Assessment Unit (MAU) borehole is identified by a Registration Number. This consists of two statements.

1. The number of the 1:25 000 sheet on which the borehole lies, for example SP 20.
2. The quarter of the 1:25 000 sheet on which the borehole lies and its number in a series for that quarter; for example SE 4.

Thus the full Registration Number is SP 20 SE 4. Usually this is abbreviated to 20 SE 4 in the text.

2. The National Grid Reference

All National Grid references in this publication lie within the 100 km squares SU and SP unless otherwise stated. Grid references are given to eight figures, accurate to within 10 m for borehole locations. (In the text, six-figure grid references are used for more approximate locations, for example, for farms).

3. Location

The position of the borehole is generally referred to the nearest named locality on the 1:25 000 base map and the resource block in which it lies is stated.

4. Surface Level

The surface level at the borehole site is given in metres and feet above Ordnance Datum. All measurements were made in metres; approximate conversions to feet are given in brackets.

5. Groundwater Conditions

If groundwater was present the level at which it was encountered is normally given (in metres and feet above Ordnance Datum).

6. Type of Drill and Date of Drilling

Modified shell and auger rigs were used in this survey. The type of machine, the external diameter of the casing used, and the month and year of completion of the borehole are stated.

7. Overburden, Mineral, Waste and Bedrock

Mineral is sand and gravel which, as part of a deposit, falls within the arbitrary definition of potentially workable material (see p. 1). Bedrock is the 'formation', 'country rock' or 'rock head' below which potentially workable sand and gravel will not be found. Waste is any material other than bedrock or mineral. Where waste occurs between the surface and mineral it is classified as overburden.

8. Thickness and Depth

All measurements were made in metres. Imperial conversions appear in brackets. Imperial conversions of measurements of the thicknesses of beds and the depth from the surface of their bases have been rounded off to the nearest 0.5 ft because a more detailed quotation would imply a higher order of accuracy than could be justified by the original figures. Where figures have been rounded in this way there may be a discrepancy between the sum of the thicknesses and the recorded depths.

9. The plus sign (+) indicates that the base of the deposit was not reached during drilling.

10. Geological Classification

The geological classification (p. 2) is given whenever possible.

11. Lithological Description

When sand and gravel is recorded a general description based on the mean grading characteristics (for details see Appendix C) is followed by more detailed particulars. The description of other rocks is based on visual examination, in the field.

12. Sampling

A continuous series of bulk samples is taken throughout the thickness of sand and gravel. A new sample is commenced whenever there is an appreciable lithological change within the sand and gravel or at every 1 m of depth.

13. Grading Results

The limits are as follows: gravel, +4 mm; sand, -4+1/16 mm; fines, -1/16 mm.

14. Mean Grading

The grading of the full thickness of the mineral horizon identified in the log is the mean of the individual sample gradings weighted by the thicknesses represented, if these vary. The classification used is shown in Table 12.

Fully representative sampling of sand and gravel is difficult to achieve particularly where groundwater levels are high. Comparison between boreholes and adjacent exposures suggests that in borehole samples the proportion of sand may be higher and the proportions of fines and coarse gravel (+16 mm) may be lower.

Appendix E: List of Boreholes Used in the Assessment of Resources

MINERAL ASSESSMENT UNIT BOREHOLES

Borehole No. by sheet quadrant	Grid references (all fall in 100 km square SP)	Borehole No. by sheet quadrant	Grid references (all fall in 100 km squares SP or SU)
SP 20 SW 3	2114 0042	16	3472 0137
(pp.33-46) 4	2164 0207	17	3465 0040
5	2135 0100	18	3415 0234
6	2205 0263	SP 30 NE 1	3507 0844
7	2261 0146	(pp.90-98) 2	3603 0830
8	2341 0350	3	3659 0749
9	2348 0054	4	3771 0702
10	2421 0271	5	3773 0591
11	2417 0184	6	3828 0763
12	2481 0104	7	3918 0719
13	2076 0296	8	3999 0608
14	2396 0302	9	3701 0813
15	2466 0259	SP 30 SE 1	3567 0416
16	2372 0064	(pp.99-113) 2	3546 0319
SP 20 NE 29 (p.47)	2940 0517	3	3501 0247
SP 20 SE 2	2522 0209	4	3558 0140
(pp.48-68) 3	2599 0111	5	3539 0049
4	2557 0008	6	3671 0402
5	2654 0373	7	3618 0221
6	2602 0250	8	3627 0138
7	2699 0046	9	3660 0053
8	2781 0425	10	3740 0435
9	2712 0215	11	3704 0316
10	2759 0169	12	3751 0185
11	2785 0081	13	3850 0332
12	2819 0328	14	3842 0178
13	2862 0022	15	3504 0412
14	2921 0355	SU 29 NW 4	2098 9898
15	2991 0295	(pp.114-124) 5	2023 9813
16	2913 0151	6	2113 9993
17	2963 0048	7	2168 9783
18	2652 0325	8	2261 9951
19	2743 0291	9	2209 9876
20	2809 0443	10	2342 9934
21	2874 0289	11	2338 9873
22	2830 0103	12	2316 9805
SP 30 NW 1	3062 0653	13	2453 9941
(pp.69-71) 2	3250 0502	14	2474 9850
3	3495 0685	SU 29 NE 5	2573 9955
SP 30 SW 1	3073 0490	(pp.125-132) 6	2641 9957
(pp.72-89) 2	3040 0379	7	2706 9925
3	3060 0055	8	2832 9979
4	3182 0259	9	2848 9906
5	3111 0205	10	2864 9708
6	3139 0057	11	2963 9948
7	3219 0347	12	2959 9859
8	3324 0240	SU 39 NW 5	3057 9899
9	3208 0153	(pp.133-135) 6	3151 9952
10	3256 0015	7	3264 9934
11	3346 0152	SU 39 NE 10	3544 9980
12	3349 0046	(pp.136-138) 11	3604 9932
13	3455 0446	12	3670 9984
14	3468 0351		
15	3413 0285		

OTHER BOREHOLES

Hydrogeological Department records: 235/75, 277; 236/43, 253, 182, 249b, 168a, 248, 255b, 19, 187a, 230, 208; 253/178; 252/74, 122, 201.

Confidential records: many records made available by the sand and gravel industry are held in confidence.

Appendix F: Mineral Assessment Unit Borehole Records

SP 20 SW 3

2114 0042

Stud Farm, Lechlade

Block A

Surface level (+77.7 m) +255 ft

Water struck at (+74.2 m)

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Overburden 0.6 m (2.0 ft)

Mineral 6.9 m (22.5 ft)

Bedrock 0.5 m (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Made ground	Ash and soil	0.2	(0.5)	0.2	(0.5)
Second Terrace Deposits	Clay, silty, with scattered pebbles, brown	0.4	(1.5)	0.6	(2.0)
	Gravel, silty to 3.3 m, with clay layers from 3.3 m to 3.5 m (soft, silty, blue mottled brown), from 4.1 m to 4.6 m (very silty, brown mottled pale green with thin brown silty sand bands), and as thin beds below 5.6 m	6.9	(22.5)	7.5	(24.5)
	Gravel: fine with some coarse to 4.1 m; fine with coarse below 4.6 m. Subrounded, tabular buff limestone (ironstained below 3.5 m) with a trace of rounded quartz and quartzite. Rare flint cobbles and a few shell and belemnite fragments in the lower part				
	Sand: coarse with medium and a little fine				
Oxford Clay	Clay, firm to stiff, locally very silty, brown passing into dark bluish-grey	0.5+	(1.5+)	8.0	(26.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel	47	+16	0.6 - 1.6	12	49	39
		-16+4	1.6 - 2.6	7	43	50
			2.6 - 3.3	12	60	28
Sand	46	-4+1	3.3 - 3.5		Clay	
		-1+ $\frac{1}{4}$	3.5 - 4.1	7	57	36
		- $\frac{1}{4}$ +1/16	4.1 - 4.6		Clay	
Fines	7	-1/16	4.6 - 5.6	3	41	56
			5.6 - 6.6	3	37	60
			6.6 - 7.5	3	42	55

SP 20 SW 4

2164 0207

North-west of Little Faringdon

Block A

Surface level (+80.8 m) +265 ft

Overburden 0.5 m (1.5 ft)

Water struck at (+80.2 m)

Mineral 3.4 m (11.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

June 1971

LOG

		Thickness	Depth	
		m	m	(ft)
		(ft)		
	Soil, dark brown	0.2	0.2	(0.5)
Alluvium	Clay, silty, light brown	0.3	0.5	(1.0)
First Terrace Deposits	Gravel Gravel: fine with coarse tabular, subrounded, grey locally iron-stained limestone with rare cobbles Sand: coarse with medium and a little fine, slightly silty	3.4	3.9	(11.0)
?Kellaways Sand	Clay, stiff, grey with fragile shells	0.5+	4.4	(1.5+)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 59	+16	13	0.5 - 1.5	5	41	54
	-16+4	46	1.5 - 2.5	3	36	61
			2.5 - 3.5	5	37	58
Sand 37	-4+1	22	3.5 - 3.9	4	30	66
	-1+ $\frac{1}{4}$	12				
	- $\frac{1}{4}$ +1/16	3				
Fines 4	-1/16	4				

SP 20 SW 5

2135 0100

Roughground Farm, Lechlade

Block H

Surface level (+79.6 m) +261 ft
 Water struck at (+77.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.8 m (2.5 ft)
 Mineral 1.7 m (5.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.1	(0.5)	0.1	(0.5)
Made Ground	Stony clay	0.1	(0.5)	0.2	(0.5)
Second Terrace Deposits	Clay, silty, firm, with scattered pebbles	0.6	(2.0)	0.8	(2.5)
	'Clayey' sandy gravel, clayey at top and base, thin sand layers in the centre	1.7	(5.5)	2.5	(8.0)
	Gravel: fine with some coarse, tabular, subrounded limestone				
	Sand: medium and coarse with fine, very silty, grey passing into yellowish-brown				
Oxford Clay	Clay, firm, dark grey with a few fragile shells	0.5+	(1.5+)	3.0	(10.0)

GRADING

Mean for Deposit				Bulk Samples		
	%	mm	%	Depth below surface (m)	Fines	Percentages Sand Gravel
Gravel	39	+16	5	0.8 - 1.8	13	52 35
		-16+4	34	1.8 - 2.5	16	39 45
Sand	47	-4+1	18			
		-1+ $\frac{1}{4}$	19			
		- $\frac{1}{4}$ +1/16	10			
Fines	14	-1/16	14			

SP 20 SW 6

2205 0263

Common Barn, Little Faringdon

Block H

Surface level (+81.4 m) +267 ft

Water not struck

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Waste 1.4 m (4.5 ft)

Bedrock 1.3 m+ (4.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, light brown	1.1	(3.5)	1.3	(4.5)
	Clay, pebbly, light brown	0.1	(0.5)	1.4	(4.5)
Oxford Clay	Clay, firm to stiff with a few thin carbonaceous layers, light brownish-grey	0.3	(1.0)	1.7	(5.5)
	Clay, with selenite crystals, dark chocolate brown	0.6	(2.0)	2.3	(7.5)
	Clay, with fragile shells, yellowish-brown passing into grey	0.4+	(1.5+)	2.7	(9.0)

SP 20 SW 7

2261 0146

Little Faringdon

Block H

Surface level (+82.3 m) +270 ft

Water struck at (+81.1 m)

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Overburden 0.7 m (2.5 ft)

Mineral 1.4 m (4.5 ft)

Bedrock 0.6 m+ (2.0 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
Made Ground	Ash and soil	0.3	(1.0)	0.3	(1.0)
	Soil, pebbly near the base, dark brown	0.4	(1.5)	0.7	(2.5)
Third Terrace Deposits	Gravel, with stiff calcareous matrix in in the upper part, clayey at the base Gravel: fine with coarse, platy, tabular, subrounded, brown and grey limestone with some ironstone Sand: coarse with medium and a little fine	1.4	(4.5)	2.1	(7.0)
Oxford Clay	Clay, stiff, brown passing into dark grey	0.6+	(2.0+)	2.7	(9.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 57	+16	11	0.7 - 1.7	2	36	62
	-16+4	46	1.7 - 2.1	13	41	46
Sand 38	-4+1	20				
	-1+ $\frac{1}{4}$	14				
	- $\frac{1}{4}$ +1/16	4				
Fines 5	-1/16	5				

SP 20 SW 8

2341 0350

Broughton Poggs

Block H

Surface level (+82.0m) +269 ft

Water not struck

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Waste 1.5 m (5.0 ft)

Bedrock 1.5 m+ (5.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.1	(0.5)	0.1	(0.5)
Second Terrace Deposits	Clay, silty, slightly pebbly, brown	1.4	(4.5)	1.5	(5.0)
Kellaways Sand	Clay, firm, greyish-blue mottled yellowish-brown	0.8	(2.5)	2.3	(7.5)
	Clay, firm, grey mottled yellowish-brown, silty and speckled white in the lower part	0.2	(0.5)	2.5	(8.0)
	Clay, firm, dark grey, passing into very silty, bluish-grey, with shells, shaly and hard at the base	0.5+	(1.5+)	3.0	(10.0)

SP 20 SW 9 2348 0054 Disused railway track, Little Faringdon Block A

Surface level (+76.2 m) +250 ft Overburden 1.2 m (4.0 ft)
 Water struck at (+74.2 m) Mineral 1.7 m (5.5 ft)
 Shell and auger (modified) 152 mm (6 in) diameter Bedrock 0.5 m+ (1.5 ft+)
 June 1971

LOG

		Thickness m	(ft)	Depth m	(ft)
Made Ground	Clinker and ash	0.6	(2.0)	0.6	(2.0)
Second Terrace Deposits	Clay, stiff, silty, with common limestone pebbles	0.6	(2.0)	1.2	(2.0)
	'Clayey' sandy gravel Gravel: fine with coarse to 2.2 m passing into fine with a trace of coarse. Tabular subrounded brownish-buff limestone Sand: medium and coarse with fine, very silty	1.7	(5.5)	2.9	(9.5)
Oxford Clay	Clay, stiff, dark grey, with a trace of fragile shells, shaly in the lower part	0.5+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 37	+16	7	1.2 - 2.2	13	52	35
	-16+4	30	2.2 - 2.9	10	50	40
Sand 51	-4+1	19				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	10				
Fines 12	-1/16	12				

SP 20 SW 10

2421 0271

West of Langford

Block H

Surface level (+79.9 m) +262 ft

Water struck at (+78.9 m)

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Waste 1.4 m (4.5 ft)

Bedrock 2.1 m+ (7.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Made Ground	Soil, ash and stones	0.4	(1.5)	0.4	(1.5)
Second Terrace Deposits	Clay, silty, sandy, pebbly, stiff, brown	0.6	(2.0)	1.0	(3.5)
	'Clayey' gravel Gravel: fine with coarse. Tabular, subrounded, yellowish brown limestone Sand: coarse with medium and a little fine, silty and locally clayey	0.4	(1.5)	1.4	(4.5)
Oxford Clay	Clay, silty, firm to soft, ochreous-brown mottled pale blue	1.3	(4.5)	2.7	(9.0)
	Clay, firm, dark chocolate brown, with selenite crystals	0.4	(1.5)	3.1	(10.0)
	Clay, firm, greyish-blue, with fragile shells	0.4+	(1.5+)	3.5	(11.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 62	+16	22	1.0 - 1.4	11	27	62
	-16+4	40				
Sand 27	-4+1	14				
	-1+ $\frac{1}{4}$	10				
	- $\frac{1}{4}$ +1/16	3				
Fines 11	-1/16	11				

SP 20 SW 11

2417 0184

Tillingtons, Langford

Block A

Surface level (+75.3 m) +247 ft
 Water struck at (+74.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.7 m (2.5 ft)
 Mineral 2.0 m (6.5 ft)
 Waste 3.5 m (11.5 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, brown	0.1	(0.5)	0.1	(0.5)
Second Terrace Deposits	Clay, silty, light ochreous-brown	0.6	(2.0)	0.7	(2.5)
	'Clayey' sandy gravel with thin 100 mm pebbly clay layers below 1.4 m Gravel: fine with a trace of coarse. Tabular, subrounded, yellow, grey and brown limestone Sand: coarse and medium with fine, very silty, and clayey	2.0	(6.5)	2.7	(9.0)
	Silt, clayey, soft, yellow	0.3	(1.0)	3.0	(10.0)
	Silt, sandy, unconsolidated, yellow	2.3	(7.5)	5.3	(17.5)
	Gravel, sandy, fine to coarse, subrounded, tabular, brown, limestone, with belemnite fragments, and a few tabular limestone and irregular flint cobbles	0.2	(0.5)	5.5	(18.0)
	Clay, pebbly, chocolate brown mottled light grey	0.4	(1.5)	5.9	(19.5)
	Gravel, sandy, silty, fine to medium, limestone, brown passing into grey	0.3	(1.0)	6.2	(20.5)
Oxford Clay	Clay, firm, greyish-blue, with fragile shells	0.3+	(1.0+)	6.5	(21.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 26	+16	1	0.7 - 1.7	22	56	22
	-16+4	25	1.7 - 2.7	17	54	29
Sand 55	-4+1	20				
	-1+ $\frac{1}{4}$	20				
	- $\frac{1}{4}$ +1/16	15				
Fines 19	-1/16	19				

Surface level (+75.6 m) +248 ft
 Water struck at (+72.7 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 1.1 m (3.5 ft)
 Mineral 5.0 m (16.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Second Terrace Deposits	Clay, silty, slightly sandy, with limestone and chert pebbles	0.8	(2.5)	1.1	(3.5)
	Sandy gravel, with a 100 mm sandy silt layer near the base	5.0	(16.5)	6.1	(20.0)
	Gravel: fine with a little coarse, coarser at the base. Subrounded limestone with some subangular flint				
	Sand: medium and coarse with fine, silty at the top, whitish brown				
Oxford Clay	Mudstone, hard, black, fossiliferous, passing into clay, light bluish-grey	0.5+	(1.5+)	6.6	(21.5)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	37	+16	5	1.1 - 2.1	9	61	30
		-16+4	32	2.1 - 3.1	8	56	36
				3.1 - 4.1	5	56	39
Sand	57	-4+1	23	4.1 - 5.1	5	56	39
		-1+ $\frac{1}{4}$	24	5.1 - 6.1	2	56	42
		- $\frac{1}{4}$ +1/16	10				
Fines	6	-1/16	6				

SP 20 SW 13

2076 0296

South-east of Fyfield

Block A

Surface level +83.8 m (+275 ft)

Overburden 0.4 m (1.5 ft)

Water struck at +83.2 m

Mineral 4.0 m (13.0 ft)

Shell and auger(modified) 152 mm (6 in) diameter

Bedrock 1.0 m+ (3.5 ft+)

February 1974

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil, peaty	0.4	1.5	0.4	1.5
First Terrace Deposits	Gravel Gravel: fine with coarse, subangular to subrounded, tabular with some platy limestone. A few limestone cobbles at base Sand: coarse with medium and a little fine	4.0	(13.0)	4.4	(14.5)
Forest Marble	Sand, silty, grey, passing into sandy, silty clay	1.0+	(3.5+)	5.4	(18.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages Sand Gravel	
Gravel 51	+16	14	0.4 - 0.6	11	45	44
	-16+4	37	0.6 - 1.6	3	40	57
Sand 45	-4+1	26	1.6 - 2.6	4	48	48
	-1+ $\frac{1}{4}$	15	2.6 - 3.6	4	50	46
	- $\frac{1}{4}$ +1/16	4	3.6 - 4.4	1	41	58
Fines 4	-1/16	4				

Surface level +79.9 m (+262 ft)
 Water struck at +79.3 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.9 m (3.0 ft)
 Mineral 2.1 m (7.0 ft)
 Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness	Depth		
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Second Terrace Deposits	Clay, brown	0.6	(2.0)	0.9	(3.0)
	Gravel	2.1	(7.0)	3.0	(10.0)
	Gravel: fine with coarse flint and quartz with limestone				
	Sand: coarse and medium with some fine, silty at top				
Oxford Clay	Clay, silty and sandy, blue	1.0+	(3.5+)	4.0	(13.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 53	+16	11	0.9 - 1.9	10	40	50
	-16+4	42	1.9 - 3.0	5	39	56
Sand 39	-4+1	18				
	-1+ $\frac{1}{2}$	17				
	- $\frac{1}{4}$ +1/16	4				
Fines 8	-1/16	8				

SP 20 SW 15

2466 0259

Langford

Block H

Surface level +79.2 m (+260 ft)
Water struck at +77.8 m
Shell and auger (modified) 152 mm (6 in) diameter
February 1974

Overburden 0.7 m (2.5 ft)
Mineral 1.1 m (3.5 ft)
Bedrock 1.6 m+ (5.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Third Terrace Deposits	Clay	0.4	(1.5)	0.7	(2.5)
	'Clayey' gravel, sandy at the base Gravel: fine with coarse, subrounded limestone Sand: coarse and medium with a little fine, silty and clayey	1.1	(3.5)	1.8	(6.0)
Oxford Clay	Clay	1.6+	(5.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 43	+16	7	0.7 - 1.4	13	37	50
	-16+4	36	1.4 - 1.8	18	50	32
Sand 42	-4+1	21				
	-1+ $\frac{1}{4}$	17				
	- $\frac{1}{4}$ +1/16	4				
Fines 15	-1/16	15				

SP 20 SW 16

2372 0064

South-east of Little Faringdon

Block A

Surface level +75.6 m (+248 ft)
 Water struck at +72.7 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 1.0 m (3.5 ft)
 Mineral 2.5 m (8.0 ft)
 Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, peaty, black	0.1	(0.5)	0.1	(0.5)
	Made ground, gravel	0.3	(1.0)	0.4	(1.5)
Second Terrace Deposits	Clay, silty, orange-brown	0.6	(2.0)	1.0	(3.5)
	Sandy gravel	2.5	(8.0)	3.5	(11.5)
	Gravel: fine with some coarse, subangular to subrounded limestone and flint				
	Sand: coarse and medium with fine				
Oxford Clay	Clay, brown, mottled orange, passing into blue, mottled brown	0.2	(0.5)	3.7	(12.0)
	Clay, blue	0.8+	(2.5+)	4.5	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 38	+16	5	1.0 - 2.0	7	51	42
	-16+4	33	2.0 - 3.0	4	62	34
			3.0 - 3.5	4	61	35
Sand 57	-4+1	25				
	-1+ $\frac{1}{4}$	24				
	- $\frac{1}{4}$ +1/16	8				
Fines 5	-1/16	5				

SP 20 NE 29

2940 0517

North-east of Black Bourton

Block H

Surface level +76.8 m (+252 ft)
 Water struck at +75.6 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.3 m (1.0 ft)
 Mineral 1.7 m (5.5 ft)
 Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness m (ft)	Depth m (ft)
	Soil	0.1 (0.5)	0.1 (0.5)
	Made ground	0.2 (0.5)	0.3 (1.0)
First Terrace Deposits	Sandy gravel Gravel: fine with coarse, subangular to subrounded limestone Sand: coarse and medium with fine, silty	1.7 (5.5)	2.0 (6.5)
Kellaways Clay	Clay, silty and sandy, bluish grey	1.0 (3.5)	3.0 (10.0)
?Cornbrash	Rock, hard, not penetrated		

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 38	+16	7	0.3 - 1.2	10	53	37
	-16+4	31	1.2 - 2.0	7	52	41
Sand 53	-4+1	24				
	-1+ $\frac{1}{4}$	21				
	- $\frac{1}{4}$ +1/16	8				
Fines 9	-1/16	9				

Surface level (+75.0 m) +246 ft
 Water struck at (+73.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.6 m (2.0 ft)
 Mineral 5.6 m (18.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Second Terrace Deposits	Clay, silty with common limestone and flint pebbles, and a few limestone cobbles	0.3	(1.0)	0.6	(2.0)
	Sandy gravel Gravel: fine with coarse, coarser between 3 and 4.0 m. Subrounded limestone with some subangular flint and a little well-rounded quartzite Sand: coarse with medium and a little fine, silty in the upper part, brown	5.6	(18.5)	6.2	(20.5)
Oxford Clay	Clay, bluish-grey	0.5+	(1.5+)	6.7	(22.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	45	+16	8	0.6 - 1.6	8	48	44
		-16+4	37	1.6 - 3.0	9	51	40
				3.0 - 4.0	4	51	45
Sand	50	-4+1	24	4.0 - 5.0	2	58	40
		-1+ $\frac{1}{4}$	21	5.0 - 6.0	2	44	54
		- $\frac{1}{4}$ +1/16	5	6.0 - 6.2	3	53	45
Fines	5	-1/16	5				

SP 20 SE 3

2599 0111

North-west of Grafton

Block A

Surface level (+72.9 m) 239 ft
 Water struck at (+72.1 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.6 m (2.0 ft)
 Mineral 1.9 m (6.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Second Terrace Deposits	Clay, silty, brown	0.4	(1.5)	0.6	(2.0)
	'Clayey' sandy gravel, with thin clay bands at 2.1 m	1.9	(6.0)	2.5	(8.0)
	Gravel: fine with coarse to 1.6 m, passing into fine with a trace of coarse. Subrounded limestone with some subangular flint				
	Sand: medium and coarse with a little fine, yellowish-brown				
Oxford Clay	Clay, slightly silty, brown passing into bluish-grey	0.5+	(1.5+)	3.0	(10.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	44 +16	5	0.6 - 1.6	8	35	57
	-16+4	39	1.6 - 2.5	17	53	30
Sand	44 -4+1	20				
	-1+ $\frac{1}{4}$	18				
	- $\frac{1}{4}$ +1/16	6				
Fines	12 -1/16	12				

Surface level (+69.5 m) +228 ft
 Water struck at (+68.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.5 m (1.5 ft)
 Mineral 2.1 m (7.0 ft)
 Waste 0.2 m (0.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, brown	0.2	(0.5)	0.5	(1.5)
	Sandy gravel	2.1	(7.0)	2.6	(8.5)
	Gravel: fine with a trace of coarse to 1.5 m passing into fine with coarse. Subrounded limestone, with some subangular flint, a trace of well-rounded quartz, and a few shells Sand: medium and coarse with some fine, slightly silty, yellowish-brown				
	Silt, sandy, blue	0.2	(0.5)	2.8	(9.0)
Oxford Clay	Clay, stiff, bluish-grey with a few shells	0.5+	(1.5+)	3.3	(11.0)

GRADING

Mean for Deposit			Bulk Samples		
%	mm	%	Depth below surface (m)	Fines	Percentages Sand Gravel
Gravel 39	+16	6	0.5 - 1.5	7	62 31
	-16+4	33	1.5 - 2.6	4	50 46
Sand 56	-4+1	24			
	-1+ $\frac{1}{4}$	24			
	- $\frac{1}{4}$ +1/16	8			
Fines 5	-1/16	5			

SP 20 SE 5

2654 0373

South-west of Alvescot

Block H

Surface level (+85.7 m) +281 ft
 Water struck at (+84.3 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Waste 3.4 m (11.0 ft)
 Bedrock 0.6 m+ (2.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Third Terrace Deposits	Clay, silty, light brown	1.1	(3.5)	1.4	(4.5)
	'Very clayey' gravel	0.5	(1.5)	1.9	(6.0)
	Gravel: fine with coarse. Subrounded limestone and subangular flint				
	Sand: medium and coarse with fine, very silty and clayey, brown				
	Clay, silty, brown, with scattered flint pebbles, and a few patches of fine sand, yellowish-brown to orange	0.4	(1.5)	2.3	(7.5)
?Oxford Clay	Silt, with some fine sand, bluish-grey locally mottled yellowish-white, fossil remains in the lower part	1.1	(3.5)	3.4	(11.0)
Oxford Clay	Clay, silty, shelly, with nodules of stone, bluish-grey	0.6+	(2.0+)	4.0	(13.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	44	+16	1.4 - 1.9	20	36	44
		-16+4				
Sand	36	-4+1				
		-1+ $\frac{1}{4}$				
		- $\frac{1}{4}$ +1/16				
Fines	20	-1/16				

SP 20 SE 6

2602 0250

East of Langford

Block A

Surface level (+73.8 m) +242 ft
 Water struck at (+72.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 1.2 m (4.0 ft)
 Mineral 1.0 m (3.5 ft)
 Bedrock 0.7 m+ (2.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, slightly sandy, light brown	0.9	(3.0)	1.2	(4.0)
	Sandy gravel Gravel: fine with a trace of coarse. Subrounded limestone with some sub-angular flint and a little mudstone Sand: coarse and medium with fine, slightly silty, brown passing into grey	1.0	(3.5)	2.2	(7.0)
Oxford Clay	Clay, stiff, bluish-grey	0.7+	(2.5+)	2.9	(9.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages Sand	Gravel
Gravel 33	+16	3	1.2 - 2.2	7	60	33
	-16+4	30				
Sand 60	-4+1	27				
	-1+ $\frac{1}{4}$	24				
	- $\frac{1}{4}$ +1/16	9				
Fines 7	-1/16	7				

SP 20 SE 7

2699 0046

Grafton

Block D

Surface level (+69.2 m) +277 ft
 Water struck at (+67.7 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.5 m (1.5 ft)
 Mineral 2.7 m (9.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, slightly sandy, brown	0.3	(1.0)	0.5	(1.5)
	Sandy gravel Gravel: fine with a trace of coarse. Subrounded limestone with some nodular flint Sand: coarse and medium with fine, silty at the top	2.7	(9.0)	3.2	(10.5)
Oxford Clay	Clay, bluish-grey, with shells	0.5+	(1.5+)	3.7	(12.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	38	+16	3	0.5 - 1.5	13	52	35
		-16+4	35	1.5 - 2.5	6	50	44
				2.5 - 3.2	5	60	35
Sand	54	-4+1	23				
		-1+ $\frac{1}{4}$	22				
		- $\frac{1}{4}$ +1/16	9				
Fines	8	-1/16	8				

Surface level (+79.6 m) +261 ft
 Water struck at (+76.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.9 m (3.0 ft)
 Mineral 2.1 m (7.0 ft)
 Waste 2.5 m (8.0 ft)
 Bedrock 0.8 m+ (2.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Third Terrace Deposits	Clay, silty, brown, with scattered limestone and quartzite pebbles	0.7	(2.5)	0.9	(3.0)
	Sandy gravel Gravel: fine with a trace of coarse. Subrounded to well-rounded limestone with a little subangular to angular flint, and a few shell fragments Sand: coarse and medium with fine, silty at the base, brown	2.1	(7.0)	3.0	(10.0)
	Clay, silty, pebbly, brown	0.2	(0.5)	3.2	(10.5)
	Silt, sandy with small limestone pebbles and shell fragments, brown passing into bluish-grey. Fragments of brownish-grey mudstone at 4.6 m	1.7	(5.5)	4.9	(16.0)
	Sandy gravel, fine with a trace of coarse, subrounded limestone with some angular flint	0.6	(2.0)	5.5	(18.0)
Kellaways Clay	Clay, stiff, grey, with band of cemented limestone at 5.8 m	0.8+	(2.5+)	6.3	(20.5)

GRADING

Mean for Deposits			Bulk Samples				
	%	mm	%	Depth below surface (m)	Percentages		
					Fines	Sand	Gravel
Gravel	33	+16	2	0.9 - 1.9	4	60	36
		-16+4	31	1.9 - 3.0	10	59	31
Sand	60	-4+1	27				
		-1+ $\frac{1}{4}$	23				
		- $\frac{1}{4}$ +1/16	10				
Fines	7	-1/16	7				

SP 20 SE 9

2712 0215

West of Clanfield

Block B

Surface level (+73.5 m) +241 ft

Water struck at (+72.2 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 0.4 m (1.5 ft)

Mineral 5.3 m (17.5 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness	Depth
		m (ft)	m (ft)
	Soil	0.2 (0.5)	0.2 (0.5)
Second Terrace Deposits	Clay, silty, pebbly, brown	0.2 (0.5)	0.4 (1.5)
	Sandy gravel, with bluish-grey silt from 5.0 - 5.2 m	5.3 (17.5)	5.7 (18.5)
	Gravel: fine with coarse. Subrounded brown limestone with some sub-angular chert, a little shell debris and in the lower part a few flint cobbles, belemnite fragments, and quartz pebbles		
	Sand: medium and coarse with fine, slightly silty, brown		
Oxford Clay	Clay, stiff, bluish-grey	0.4+ (1.5+)	6.1 (20.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages Sand	Gravel
Gravel	41 +16	6	0.4 - 1.3	4	52	44
	-16+4	35	1.3 - 2.3	4	54	42
			2.3 - 3.3	2	50	48
Sand	55 -4+1	24	3.3 - 4.3	4	44	52
	-1+1/4	25	4.3 - 5.0	4	63	33
	-1/4+1/16	6	5.0 - 5.2		Silt	
			5.2 - 5.7	5	85	10
Fines	4 -1/16	4				

Surface level (+73.2 m) +240 ft
 Water struck at (+72.1 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.5 m (1.5 ft)
 Mineral 2.3 m (7.5 ft)
 Waste 0.2 m (0.5 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Second Terrace Deposits	Clay, silty, brown	0.4	(1.5)	0.5	(1.5)
	Sandy gravel	2.3	(7.5)	2.8	(9.0)
	Gravel: fine with coarse. Subrounded limestone with some flint, shells, and bellemnite fragments				
	Sand: medium and coarse with a little fine, silty at top and base, yellowish-brown				
	Silt, bluish-grey	0.2	(0.5)	3.0	(10.0)
Oxford Clay	Clay, stiff, bluish-grey, with shells	0.4+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 44	+16	8	0.9 - 1.4	11	54	35
	-16+4	36	1.4 - 2.4	0	45	55
			2.4 - 2.8	8	54	38
Sand 50	-4+1	24				
	-1+ $\frac{1}{4}$	21				
	- $\frac{1}{4}$ +1/16	5				
Fines 6	-1/16	6				

SP 20 SE 11

2785 0081

South-west of Clanfield

Block D

Surface level (+70.7 m) +232 ft
 Water struck at (+68.2 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 September 1971

Overburden 1.1 m (3.5 ft)
 Mineral 2.9 m (9.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.2	(0.5)	0.2	(0.5)
Second Terrace Deposits	Clay, silty, stiff, with scattered pebbles, light brown	0.4	(1.5)	0.6	(2.0)
	Sand, silty, very clayey, brown	0.5	(1.5)	1.1	(3.5)
	Gravel, with silty clay from 1.3 to 1.5 m, and thin silt bands in the lower part Gravel: fine with coarse. Subrounded to rounded buff and brown limestone, with some subangular flint and a little ironstone Sand: medium and coarse with fine, silty, coarser in the lower part, brown	2.9	(9.5)	4.0	(13.0)
Oxford Clay	Clay, stiff, shaly, brownish-grey, with shells	0.5+	(1.5+)	4.5	(15.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel	
Gravel	53	+16	7	1.1 - 1.3	10	49	41
		-16+4	46	1.3 - 1.5		Clay	
				1.5 - 2.5	7	54	39
Sand	42	-4+1	20	2.5 - 3.5	3	35	62
		-1+1/4	17	3.5 - 4.0	2	29	69
		-1/4+1/16	5				
Fines	5	-1/16	5				

Surface level (+75.0 m) +246 ft
 Water struck at (+73.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 0.3 m (1.0 ft)
 Mineral 7.5 m (24.5 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Second Terrace Deposits	Gravel, with thin silt bands from 1.3 to 2.3 m, thin silty clay bands from 3.3 to 4.3 m, and from 6.3 to 7.3 m Gravel: fine with a trace of coarse . 3.3 m, passing into fine with coarse . Subrounded, tabular, limestone with some subangular flint Sand: coarse and medium with fine, silty, greyish-yellow	7.5	(24.5)	7.8	(25.5)
Oxford Clay	Clay, sandy, brown, passing into silty, blue, with shells	0.3+	(1.0+)	8.1	(26.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 50	+16	8	0.3 - 1.3	8	46	46
	-16+4	42	1.3 - 2.3	10	49	41
			2.3 - 3.3	7	45	48
Sand 44	-4+1	18	3.3 - 4.3	4	38	58
	-1+ $\frac{1}{4}$	19	4.3 - 5.3	1	33	66
	- $\frac{1}{4}$ +1/16	7	5.3 - 6.3	2	37	61
Fines 6			6.3 - 7.3	8	58	34
	-1/16	6	7.3 - 7.8	1	55	44

SP 20 SE 13

2862 0022

South of Friar's Court, Clanfield

Block D

Surface level (+68.0 m) +223 ft
 Water struck at (+66.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.9 m (3.0 ft)
 Mineral 2.0 m (6.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, brown	0.6	(2.0)	0.9	(3.0)
First Terrace Deposits	Gravel Gravel: fine and coarse to 1.9 m passing into fine with coarse. Subrounded limestone, with some subangular flint and a few shell and coral fragments Sand: coarse and medium with a little fine, silty in the upper part, brown passing into grey	2.0	(6.5)	2.9	(9.5)
Oxford Clay	Clay, brownish-grey with shells	0.5+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 52	+16	18	0.9 - 1.9	9	36	55
	-16+4	34	1.9 - 2.9	3	48	49
Sand 42	-4+1	23				
	-1+ $\frac{1}{4}$	15				
	- $\frac{1}{4}$ +1/16	4				
Fines 6	-1/16	6				

Surface level (+74.1 m) +243 ft
 Water struck at (+73.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 1.1 m (3.5 ft)
 Mineral 1.8 m (6.0 ft)
 Waste 2.1 m (7.0 ft)
 Mineral 2.5 m (8.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, firm, light brown	0.8	(2.5)	1.1	(3.5)
	Sandy gravel, with a few 20 mm clay bands Gravel: fine with a trace of coarse. Subrounded limestone with a little rounded quartzite Sand: coarse and medium with fine, silty in the upper part, brownish-yellow	1.8	(6.0)	2.9	(5.9)
	Silt, clayey, soft, yellowish-brown	2.1	(7.0)	5.0	(16.5)
	Pebbly sand Gravel: fine with a trace of coarse. Subrounded limestone with some rounded quartzite and subangular flint Sand: medium and coarse with fine, silty, yellowish-brown	2.5	(8.0)	7.5	(24.5)
Oxford Clay	Clay, firm, bluish-grey, passing into dark grey, silty	0.5+	(1.5+)	8.0	(26.0)

GRADING

Mean for Deposit				Bulk Samples			
	%	mm	%	Depth below surface (m)	Percentages		
					Fines	Sand	Gravel
(a) Gravel	41	+16	2	(a) 1.1 - 2.1	13	48	39
		-16+4	39		2.1 - 2.9	5	51
Sand	50	-4+1	22	2.9 - 5.0	Silt		
		-1+ $\frac{1}{4}$	17				
		- $\frac{1}{4}$ +1/16	11				
Fines	9	-1/16	9				
(b) Gravel	21	+16	2	(b) 5.0 - 6.0	6	68	26
		-16+4	19		6.0 - 7.5	8	74
Sand	72	-4+1	25				
		-1+ $\frac{1}{4}$	31				
		- $\frac{1}{4}$ +1/16	16				
Fines	7	-1/16	7				

SP 20 SE 15

2991 0295

North-east of Clanfield

Block B

Surface level (+72.9 m) +239 ft

Water struck at (+71.4 m)

Shell and auger (modified) 152 mm (6 in) diameter

March 1971

Overburden 0.4 m (1.5 ft)

Mineral 5.3 m (17.5 ft)

Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, passing into clay, silty, pebbly brown	0.4	(1.5)	0.4	(1.5)
Second Terrace Deposits	Sandy gravel Gravel: fine with a trace of coarse to 3.4 m, passing into fine with some coarse. Subrounded limestone with some rounded quartz. Trace of subangular flint in the upper part, more common below, shell fragments near the base Sand: coarse with medium and some fine, silty in the upper part, light brown	5.3	(17.5)	5.7	(18.5)
Oxford Clay	Clay, grey, with shells	0.3+	(1.0+)	6.0	(19.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 33	+16	3	0.4 - 1.4	9	60	31
	-16+4	30	1.4 - 2.4	7	67	26
			2.4 - 3.4	3	62	35
Sand 62	-4+1	29	3.4 - 4.4	2	57	41
	-1+ $\frac{1}{4}$	24	4.4 - 5.7	3	64	33
	- $\frac{1}{4}$ +1/16	9				
Fines 5	-1/16	5				

SP 20 SE 16

2913 0151

East of Clanfield

Block B

Surface level (+70.4 m) +231 ft

Waste 1.7 m (5.5 ft)

Water struck at (+68.9 m)

Bedrock 1.3 m+ (4.5 ft+)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	1.0	(0.5)	1.0	(0.5)
First Terrace Deposits	Clay, silty, pebbly in the lower part, brown	1.2	(4.0)	1.3	(4.5)
	'Very clayey' sandy gravel Gravel: fine with a little coarse. Limestone with some quartz and flint Sand: coarse and medium with fine, brown, with light grey silty clay matrix in the lower part	0.4	(1.5)	1.7	(5.5)
Oxford Clay	Clay, silty, soft, pebbly, chocolate brown, passing into brown streaked blue, with pyrite and shells	1.3+	(4.5+)	3.0	(10.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 32	+16	3	1.3 - 1.7	27	41	32
	-16+4	29				
Sand 41	-4+1	19				
	-1+ $\frac{1}{4}$	16				
	- $\frac{1}{4}$ +1/16	6				
Fines 27	-1/16	27				

SP 20 SE 17

2963 0048

South-east of Clanfield

Block D

Surface level (+67.1 m) +220 ft
 Water struck at (+66.3 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.8 m (2.5 ft)
 Mineral 2.4 m (8.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown	0.6	(2.0)	0.8	(2.5)
First Terrace Deposits	Gravel Gravel: fine with coarse. Subrounded limestone with some subangular flint, a little quartz, and a few belemnite fragments Sand: coarse with medium and a little fine	2.4	(8.0)	3.2	(10.5)
Oxford Clay	Clay, bluish-grey	0.5+	(1.5+)	3.7	(12.0)

GRADING

Mean for Deposit			Bulk Samples				
	%	mm	%	Depth below surface (m)	Percentages		
					Fines	Sand	Gravel
Gravel	57	+16	7	0.8 - 1.8	3	42	55
		-16+4	50	1.8 - 2.8	4	39	57
				2.8 - 3.2	3	41	56
Sand	40	-4+1	25				
		-1+ $\frac{1}{4}$	12				
		- $\frac{1}{4}$ +1/16	3				
Fines	3	-1/16	3				

SP 20 SE 18

2652 0325

Lower Rookshill Farm, Alvescot

Block H

Surface level +79.9 m (+262 ft)

Water struck at +78.1 m

Shell and auger (modified) 152 mm (6 in) diameter
February 1974

Overburden 0.6 m (2.0 ft)

Mineral 3.0 m (10.0 ft)

Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, stony, reddish brown	0.6	(2.0)	0.6	(2.0)
Third Terrace Deposits	Sandy gravel Gravel: fine with coarse, subangular to subrounded flint with some limestone; orange grey to 1.6 m, passing into grey Sand: medium and coarse with some fine	3.0	(10.0)	3.6	(12.0)
Oxford Clay	Clay, silty, dark bluish-grey	1.0+	(3.5+)	4.6	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 37	+16	6	0.6 - 1.6	6	52	42
	-16+4	31	1.6 - 2.6	4	64	32
			2.6 - 3.6	5	59	36
Sand 58	-4+1	26				
	-1+ $\frac{1}{4}$	28				
	- $\frac{1}{4}$ +1/16	4				
Fines 5	-1/16	5				

SP 20 SE 19

2743 0291

North-west of Clanfield

Block B

Surface level +73.1 m (+240 ft)
 Water struck at +72.1 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.7 m (2.5 ft)
 Mineral 3.6 m (12.0 ft)
 Bedrock 1.1 m+ (3.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Second Terrace Deposits	Clay, fawn, mottled orange	0.6	(2.0)	0.7	(2.5)
	Sandy gravel	3.6	(12.0)	4.3	(14.0)
	Gravel: fine with coarse, subangular to subrounded flint with subrounded limestone and quartz				
	Sand: coarse and medium with fine, silty at top				
Oxford Clay	Clay, silty, stiff, blue	1.1+	(3.5+)	5.4	(18.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 39	+16	7	0.7 - 1.7	9	52	39
	-16+4	32	1.7 - 2.7	4	53	43
			2.7 - 3.7	5	60	35
Sand 55	-4+1	26	3.7 - 4.3	4	56	40
	-1+ $\frac{1}{4}$	23				
	- $\frac{1}{4}$ +1/16	6				
Fines 6	-1/16	6				

SP 20 SE 20

2809 0443

North of Black Bourton

Block B

Surface level +78.0 m (+256 ft)

Water struck at +76.5 m

Shell and auger (modified) 152 mm (6 in) diameter

February 1974

Overburden 0.9 m (3.0 ft)

Mineral 4.8 m (16.0 ft)

Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, stony, brown	0.7	(2.5)	0.9	(3.0)
	Gravel, with brown silty clay from 3.5 to 3.6 m	4.8	(16.0)	5.7	(18.5)
	Gravel: fine with coarse, subrounded limestone with subangular and platy coarse limestone at base				
	Sand: coarse with medium and a little fine, subrounded limestone, silty at top				
Kellaways Sand	Sand, clayey, blue	0.3+	(1.0+)	6.0	(19.5)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel	
Gravel	49	+16	13	0.9 - 1.5	12	45	43
		-16+4	36	1.5 - 2.5	3	50	47
				2.5 - 3.5	1	48	51
Sand	47	-4+1	28	3.5 - 3.6		Clay	
		-1+ $\frac{1}{4}$	15	3.6 - 4.6	4	48	48
		- $\frac{1}{4}$ +1/16	4	4.6 - 5.7	4	43	53
Fines	4	-1/16	4				

SP 20 SE 21

2874 0289

North of Clanfield

Block B

Surface level +73.1 m (+240 ft)
 Water struck at +72.3 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.2 m (0.5 ft)
 Mineral 6.1 m (20.0 ft)
 Bedrock 2.0 m+ (6.5 ft+)

LOG

		Thickness	Depth		
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Sandy gravel, silty and clayey in the upper part, with 50 mm of blue silty clay at 1.2 m Gravel: fine with coarse flint, limestone and some quartz Sand: coarse and medium with fine	6.1	(20.0)	6.3	(20.5)
Oxford Clay	Clay, stiff, blue	2.0+	(6.5+)	8.3	(27.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 42	+16	9	0.2 - 1.2	15	43	42
	-16+4	33	1.2 - 2.2	5	48	47
			2.2 - 3.2	5	61	34
Sand 53	-4+1	25	3.2 - 4.2	2	59	39
	-1+ $\frac{1}{4}$	22	4.2 - 5.2	3	53	44
	- $\frac{1}{4}$ +1/16	6	5.2 - 6.3	2	54	44
Fines 5	-1/16	5				

SP 20 SE 22

2830 0103

South of Clanfield

Block D

Surface level +68.9 m (+226 ft)
 Water struck at +67.6 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.7 m (2.5 ft)
 Mineral 3.0 m (10.0 ft)
 Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, sandy, pale yellow	0.6	(2.0)	0.7	(2.5)
First Terrace Deposits	Sandy gravel Gravel: fine with coarse subrounded platy limestone with some subangular to subrounded flint and a little shell debris Sand: coarse and medium with fine quartz and shell debris, orange-yellow	3.0	(10.0)	3.7	(12.0)
Oxford Clay	Clay	1.0+	(3.5+)	4.7	(15.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	37	+16	0.7 - 1.3	13	49	38
		-16+4	1.3 - 2.3	8	62	30
			2.3 - 3.7	2	57	41
Sand	57	-4+1				
		-1+ $\frac{1}{4}$				
		- $\frac{1}{4}$ +1/16				
Fines	6	-1/16				

SP 30 NW 1

3062 0653

Near Marsh Haddon Farm

Block H

Surface level (+74.4 m) +244 ft
 Water struck at (+73.2 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 0.2 m (0.5 ft)
 Mineral 1.0 m (3.5 ft)
 Bedrock 4.3 m+ (14.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(1.0)	0.2	(1.0)
First Terrace Deposits	'Very clayey' gravel Gravel: fine with coarse, subrounded limestone with a trace of subangular flint Sand: coarse, medium and fine, very silty and clayey, yellowish brown	1.0	(3.5)	1.2	(4.0)
Kellaways Sand	Silty, soft, light brown	0.4	(1.5)	1.6	(5.5)
	Silt, slightly sandy, blue passing into grey	3.6	(12.0)	5.2	(17.0)
Kellaways Clay	Clay, stiff, blue	0.3+	(1.0+)	5.5	(18.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	42	+16 -16+4	5 37	0.2 - 1.2	24	34	42
Sand	34	-4+1 -1+ $\frac{1}{4}$ - $\frac{1}{4}$ +1/16	13 10 11				
Fines	24	-1/16	24				

SP 30 NW 2

3250 0502

Mount Owen Farm

Block H

Surface level (+89.0 m) +292 ft
 Water struck at (+87.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 0.5 m (1.5 ft)
 Mineral 1.0 m (3.5 ft)
 Waste 0.7 m (2.5 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil, passing into silty, pebbly clay, brown	0.5	(1.5)	0.5	(1.5)
Fourth Terrace Deposits	'Clayey' sandy gravel Gravel: fine with a trace of coarse limestone with some flint Sand: medium with coarse and a little fine, silty and clayey, light brown	1.0	(3.5)	1.5	(5.0)
	Clay, silty, soft, light brown, with scattered limestone pebbles	0.7	(2.5)	2.2	(7.0)
Oxford Clay	Clay, stiff, bluish grey, shells	0.3+	(1.0+)	2.5	(8.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	35	+16 -16+4	2 33	0.5 - 1.5	12	53	35
Sand	53	-4+1 -1+ $\frac{1}{4}$ - $\frac{1}{4}$ +1/16	19 25 9				
Fines	12	-1/16	12				

SP 30 NW 3

3495 0685

Barleypark Farm, Ducklington

Block H

Surface level (+98.5 m) +323 ft

Overburden 2.0 m (6.5 ft)

Water struck at (+96.3 m)

Mineral 1.4 m (4.5 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.6 m+ (2.0 ft+)

April 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Fourth Terrace Deposits	Clay, very sandy, pebbly in lower part	1.6	(5.5)	2.0	(6.5)
	Sandy gravel	1.4	(4.5)	3.4	(11.0)
	Gravel: fine with some coarse, subangular to subrounded limestone and angular flint with trace of rounded quartzite. Scattered cobbles and shell fragments in lower part				
	Sand: coarse with medium and fine, silty				
Oxford Clay	Clay, brown, passing into blue	0.6+	(2.0+)	4.0	(13.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 30	+16	4	2.0 - 3.0	11	58	31
	-16+4	26	3.0 - 3.4	6	68	26
Sand 60	-4+1	18				
	-1+ $\frac{1}{4}$	33				
	- $\frac{1}{4}$ +1/16	9				
Fines 10	-1/16	10				

SP 30 SW 1

3073 0490

North of Bampton

Block H

Surface level (+70.7 m) +232 ft

Waste 1.9 m (6.0 ft)

Water struck at (+69.3 m)

Bedrock 0.6 m+ (2.0 ft+)

Shell and auger (modified) 152 mm (6 in) diameter
October 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, with scattered limestone and flint pebbles	0.4	(1.5)	0.4	(1.5)
Alluvium	Clay, silty, firm to soft, light grey mottled reddish brown, scattered limestone and flint pebbles	0.4	(1.5)	0.8	(2.5)
	Clay, sandy, very pebbly, soft, yellow	0.3	(1.0)	1.1	(3.5)
First Terrace Deposits	Gravel, sandy and very clayey, mainly subrounded limestone with subangular to subrounded flint, rounded reddish brown quartzite and yellow quartz	0.7	(2.5)	1.8	(6.0)
	Clay, very pebbly, firm, dark brown and bluish grey	0.1	(0.5)	1.9	(6.0)
Oxford Clay	Clay, stiff, bluish grey	0.6+	(2.0+)	2.5	(8.0)

SP 30 SW 2

3040 0379

North-west of Bampton

Block B

Surface level (+73.5 m) +241 ft
 Water struck at (+72.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 0.4 m (1.5 ft)
 Mineral 5.0 m (16.5 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil and subsoil	0.4	(1.5)	0.4	(1.5)
Second Terrace Deposits	Sandy gravel, with grey silty clay from 3.6 to 4.2 m Gravel: fine with some coarse sub-rounded limestone with subangular flint and well rounded quartzite. Trace of shell fragments. Scattered limestone and flint cobbles below 4.2 m Sand: coarse and medium with fine, very silty at top	5.0	(16.5)	5.4	(18.0)
Oxford Clay	Clay, bluish grey	0.3+	(1.0+)	5.7	(18.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 39	+16	5	0.4 - 1.4	14	56	30
	-16+4	34	1.4 - 2.4	8	58	34
			2.4 - 3.6	6	48	46
Sand 53	-4+1	22	3.6 - 4.2		Clay	
	-1+ $\frac{1}{4}$	22	4.2 - 5.4	6	51	42
	- $\frac{1}{4}$ +1/16	9				
Fines 8	-1/16	8				

SP 30 SW 3

3060 0055

Sharney Brook, South of Bampton

Block G

Surface level (+66.8 m) +219 ft

Water struck at (+65.1 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 1.7 m (5.5 ft)

Mineral 1.6 m (5.5 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown, peaty, scattered gastropod shells and a few limestone pebbles	1.5	(5.0)	1.7	(5.5)
First Terrace Deposits	Gravel, cemented in parts Gravel: fine with some coarse sub-rounded to well rounded limestone with subangular flint Sand: coarse and medium with some fine, slightly silty	1.6	(5.5)	3.3	(11.0)
Oxford Clay	Clay, bluish grey	0.4+	(1.5+)	3.7	(12.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 50	+16	6	1.7 - 2.7	4	38	58
	-16+4	44	2.7 - 3.3	2	60	38
Sand 47	-4+1	22				
	-1+ $\frac{1}{4}$	20				
	- $\frac{1}{4}$ +1/16	5				
Fines 3	-1/16	3				

SP 30 SW 4

3182 0259

Bampton

Block B

Surface level (+67.7 m) +222 ft

Water struck at (+65.6 m)

Shell and auger (modified) 152 mm (6 in) diameter

September 1971

Overburden 0.8 m (2.5 ft)

Mineral 5.6 m (18.5 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, dark brown	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, firm to stiff, light brown	0.6	(2.0)	0.8	(2.5)
	Sandy gravel	5.6	(18.5)	6.4	(21.0)
	Gravel: fine with some coarse, mainly subrounded to rounded tabular and platy limestone with some well rounded red quartzite and white quartz. A few cobbles below 5.9 m				
	Sand: coarse and medium with fine limestone with quartz and trace of ironstone				
Oxford Clay	Clay, stiff, grey, a few shells	0.4+	(1.5+)	6.8	(22.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 40	+16	4	0.8 - 1.8	9	51	40
	-16+4	36	1.8 - 2.8	5	53	42
			2.8 - 3.8	7	57	36
Sand 55	-4+1	24	3.8 - 4.8	2	67	31
	-1+1/4	24	4.8 - 5.8	4	51	45
	-1/4+1/16	7	5.8 - 6.4	5	42	53
Fines 5	-1/16	5				

SP 30 SW 5

3111 0205

Weald, near Bampton

Block H

Surface level (+76.3 m) +252 ft
 Water struck at (+74.3 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 1.4 m (4.5 ft)
 Mineral 1.2 m (4.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Third Terrace Deposits	Clay, brown, silty	1.1	(3.5)	1.4	(4.5)
	'Very clayey' sandy gravel	1.2	(4.0)	2.6	(8.5)
	Gravel: fine with some coarse sub-rounded limestone and some angular flint with a little shell debris and a trace of well rounded pink quartzite				
	Sand: medium with coarse and some fine				
Oxford Clay	Clay, weathered brown at top, passing into blue	0.4+	(1.5+)	3.0	(10.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 24	+16	2	1.4 - 2.6	25	51	24
	-16+4	22				
Sand 51	-4+1	17				
	-1+ $\frac{1}{4}$	26				
	- $\frac{1}{4}$ +1/16	8				
Fines 25	-1/16	25				

SP 30 SW 6

3139 0057

Burroway Brook, south of Bampton

Block G

Surface level (+66.8 m) +219 ft

Water struck at (+64.4 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 2.4 m (8.0 ft)

Mineral 1.7 m (5.5 ft)

Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, silty, brown	0.3	(1.0)	0.4	(1.5)
	Silt, clayey, soft, blue mottled brown	0.6	(2.0)	1.0	(3.5)
	Silt, clayey, soft, grey	1.4	(4.5)	2.4	(8.0)
First Terrace Deposits	Gravel	1.7	(5.5)	4.1	(13.5)
	Gravel: fine with coarse subrounded to well rounded limestone with flint, quartz and shell fragments				
	Sand: coarse and medium with some fine, grey				
Oxford Clay	Clay, stiff, light bluish grey	0.3+	(1.0+)	4.4	(14.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 54	+16	6	2.4 - 3.4	1	43	56
	-16+4	48	3.4 - 4.1	2	47	51
Sand 44	-4+1	22				
	-1+ $\frac{1}{4}$	20				
	- $\frac{1}{4}$ +1/16	2				
Fines 2	-1/16	2				

SP 30 SW 7

3219 0347

Bampton

Block B

Surface level (+68.6 m) +225 ft
 Water struck at (+66.8 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 4.2 m (14.0 ft)
 Mineral 1.6 m (5.5 ft)
 Bedrock 0.2 m+ (0.5 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Alluvium	Clay, silty and sandy, with scattered limestone pebbles, brown	1.4	(4.5)	1.8	(6.0)
	Gravel, fine, sandy, limestone and flint pebbles	0.1	(0.5)	1.9	(6.0)
	Silt, clayey, pebbly	2.3	(7.5)	4.2	(14.0)
First Terrace Deposits	'Clayey' sandy gravel Gravel: fine with some coarse sub-rounded to rounded white tabular limestone with some angular flint and a trace of rounded quartz and shell fragments Sand: coarse with medium and some fine	1.6	(5.5)	5.8	(19.0)
Oxford Clay	Clay, brown	0.2+	(0.5+)	6.0	(19.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 47	+16	3	4.2 - 5.2	13	34	53
	-16+4	44	5.2 - 5.8	7	55	38
Sand 52	-4+1	22				
	-1+ $\frac{1}{4}$	14				
	- $\frac{1}{4}$ +1/16	6				
Fines 11	-1/16	11				

SP 30 SW 8

3324 0240

South-east of Bampton

Block B

Surface level (+65.5 m) +215 ft
 Water struck at (+63.7 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 0.8 m (2.5 ft)
 Mineral 4.8 m (16.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, slightly sandy, with scattered limestone and flint pebbles	0.6	(2.0)	0.8	(2.5)
First Terrace Deposits	Sandy gravel Gravel: fine with some coarse and scattered cobbles, subrounded to rounded limestone with flint and quartzite Sand: coarse and medium with fine	4.8	(16.0)	5.6	(18.5)
Oxford Clay	Clay, light bluish grey, pyrite concretions	0.5+	(1.5+)	6.1	(20.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 34	+16	3	0.8 - 1.8	11	66	23
	-16+4	31	1.8 - 2.8	5	54	41
			2.8 - 3.8	1	42	57
Sand 60	-4+1	26	3.8 - 4.8	7	65	28
	-1+ $\frac{1}{4}$	24	4.8 - 5.6	7	78	15
	- $\frac{1}{4}$ +1/16	10				
Fines 6	-1/16	6				

SP 30 SW 9

3208 0153

South of Bampton

Block C

Surface level (+66.1 m) +217 ft

Water struck at (+64.9 m)

Shell and auger (modified) 152 mm (6 in) diameter

March 1971

Overburden 0.5 m (1.5 ft)

Mineral 3.4 m (11.0 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness	Depth
		m (ft)	m (ft)
	Soil	0.2 (0.5)	0.2 (0.5)
Alluvium	Clay, silty, brown	0.3 (1.0)	0.5 (1.5)
First Terrace Deposits	'Clayey' sandy gravel Gravel: fine with a trace of coarse limestone with some flint and worn shells Sand: coarse and medium with fine	3.4 (11.0)	3.9 (13.0)
Oxford Clay	Clay, firm to soft, light blue	0.4+ (1.5+)	4.3 (14.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 24	+16	3	0.5 - 1.5	19	59	22
	-16+4	21	1.5 - 2.5	7	72	21
			2.5 - 3.9	4	60	36
Sand 64	-4+1	25				
	-1+ $\frac{1}{4}$	27				
	- $\frac{1}{4}$ +1/16	12				
Fines 12	-1/16	12				

SP 30 SW 10

3256 0015

Rushy Weir, south of Bampton

Block C

Surface level (+66.8 m) +219 ft

Water struck at (+64.3 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 2.5 m (8.0 ft)

Mineral 1.9 m (6.0 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, limestone pebbles at top, bluish brown	2.2	(7.0)	2.5	(8.0)
First Terrace Deposits	Gravel: fine with some coarse limestone with flint and a little quartz and shell fragments Sand: coarse and medium with a little fine	1.9	(6.0)	4.4	(14.5)
Oxford Clay	Clay, stiff, grey	0.4+	(1.5+)	4.8	(16.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 51	+16	5	2.5 - 3.5	2	42	56
	-16+4	46	3.5 - 4.4	3	51	46
Sand 46	-4+1	23				
	-1+ $\frac{1}{4}$	20				
	- $\frac{1}{4}$ +1/16	3				
Fines 3	-1/16	3				

SP 30 SW 11

3346 0152

Meadow Farm, south-west of Aston

Block E

Surface level (+65.5 m) +215 ft

Water struck at (+63.9 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 0.8 m (2.5 ft)

Mineral 3.4 m (11.0 ft)

Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, sandy at base, brown	0.6	(2.0)	0.8	(2.5)
First Terrace Deposits	Sandy gravel Gravel: fine with coarse limestone with flint, mainly subangular to well rounded, trace of shell fragments Sand: coarse and medium with fine	3.4	(11.0)	4.2	(14.0)
Oxford Clay	Clay, stiff, brown at top passing into bluish-grey	1.0+	(3.5+)	5.2	(17.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 39	+16	5	0.8 - 1.8	9	58	33
	-16+4	34	1.8 - 2.8	7	51	42
			2.8 - 3.8	2	54	44
Sand 55	-4+1	23	3.8 - 4.2	3	65	32
	-1+ $\frac{1}{4}$	26				
	- $\frac{1}{4}$ +1/16	6				
Fines 6	-1/16	6				

SP 30 SW 12 3349 0046 Tadpole Bridge, north of Buckland Block G

Surface level (+65.8 m) +216 ft Overburden 2.3 m (7.5 ft)
 Water struck at (+63.5 m) Mineral 2.1 m (7.0 ft)
 Shell and auger (modified) 152 mm (6 in) diameter Bedrock 0.2 m+ (0.5 ft+)
 May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown, mottled red, sandy with limestone pebbles at base	2.1	(7.0)	2.3	(7.5)
First Terrace Deposits	Pebbly sand Gravel: fine with a trace of coarse, subrounded to well rounded limestone with flint; trace of rounded quartz and shell debris Sand: medium and coarse with fine	2.1	(7.0)	4.4	(14.5)
Oxford Clay	Clay, stiff, bluish grey	0.2+	(0.5+)	4.6	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 20	+16	1	2.3 - 3.3	5	71	24
	-16+4	19	3.3 - 4.4	4	79	17
Sand 75	-4+1	28				
	-1+ $\frac{1}{4}$	36				
	- $\frac{1}{4}$ +1/16	11				
Fines 5	-1/16	5				

SP 30 SW 13

3455 0446

North of Aston

Block H

Surface level (+66.5 m) +218 ft

Water level not recorded

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Waste 3.3 m (11.0 ft)

Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Clay, silty, yellowish brown passing into greyish-black	3.3	(11.0)	3.3	(11.0)
Oxford Clay	Clay, stiff to friable, bluish-grey	0.5+	(1.5+)	3.8	(12.5)

SP 30 SW 14

3468 0351

North-east of Aston

Block E

Surface level (+65.2 m) +214 ft

Water struck at (+63.2 m)

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Overburden 2.0 m (6.5 ft)

Mineral 3.2 m (10.5 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Clay, silty, yellowish brown, scattered pebbles below 0.8 m	2.0	(6.5)	2.0	(6.5)
First Terrace Deposits	Sandy gravel Gravel: fine with some coarse, sub-rounded to well rounded limestone with some flint and shell fragments Sand: coarse and medium with fine	3.2	(10.5)	5.2	(17.0)
Oxford Clay	Clay, stiff, bluish-grey	0.4+	(1.5+)	5.6	(18.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	28	+16	2.0 - 3.0	23	54	23
		-16+4	3.0 - 4.0	2	67	31
			4.0 - 5.2	2	69	29
Sand	64	-4+1				
		-1+ $\frac{1}{4}$				
		- $\frac{1}{4}$ +1/16				
Fines	8	-1/16				

SP 30 SW 15

3413 0285

Aston

Block E

Surface level (+69.5 m) +228 ft

Water struck at (+68.2 m)

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Waste 1.8 m (6.0 ft)

Bedrock 1.2 m+ (4.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Second Terrace Deposits	Clay, silty, yellowish brown, scattered limestone pebbles	1.3	(4.5)	1.3	(4.5)
	Sandy gravel	0.5	(1.5)	1.8	(6.0)
	Gravel: fine with some coarse, sub-rounded to well rounded limestone with subangular flint and a trace of sandstone				
	Sand: coarse with medium and a little fine				
Oxford Clay	Clay, mottled brown, passing into greyish-blue	1.2+	(4.0+)	3.0	(10.0)

GRADING

Mean for Deposit				Bulk Samples		
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 44	+16	3	1.3 - 1.8	8	48	44
	-16+4	41				
Sand 48	-4+1	28				
	-1+ $\frac{1}{4}$	17				
	- $\frac{1}{4}$ +1/16	3				
Fines 8	-1/16	8				

SP 30 SW 16

3472 0137

North-west of Chimney

Block E

Surface level (+65.2 m) +214 ft
 Water struck at (+63.1 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 1.0 m (3.5 ft)
 Mineral 3.2 m (10.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness	Depth		
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, brown	0.3	(1.0)	0.6	(2.0)
	Silt, sandy, yellowish buff	0.4	(1.5)	1.0	(3.5)
First Terrace Deposits	Sandy gravel	3.2	(10.5)	4.2	(14.0)
	Gravel: fine with some coarse, sub-rounded to well rounded limestone with some quartz, flint and shell fragments Sand: coarse with medium and a little fine				
Oxford Clay	Clay, light bluish-grey	0.5+	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 36	+16	3	1.0 - 2.0	15	64	21
	-16+4	33	2.0 - 3.0	2	54	44
			3.0 - 4.2	3	56	41
Sand 58	-4+1	31				
	-1+1/4	21				
	-1/4+1/16	6				
Fines 6	-1/16	6				

SP 30 SW 17

3465 0040

South-west of Chimney

Block E

Surface level (+64.6 m) +212 ft
 Water struck at (+64.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.6 m (2.5 ft)
 Mineral 2.4 m (8.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, grey mottled brown	0.3	(1.0)	0.6	(2.0)
First Terrace Deposits	Sandy gravel Gravel: fine with some coarse, sub-rounded limestone with a little subangular flint and shell fragments Sand: coarse and medium with fine	2.4	(8.0)	3.0	(10.0)
Oxford Clay	Clay, stiff, bluish-grey	0.4+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 30	+16	1	0.6 - 1.6	6	67	27
	-16+4	29	1.6 - 2.6	2	65	33
			2.6 - 3.0	2	67	31
Sand 66	-4+1	29				
	-1+ $\frac{1}{4}$	28				
	- $\frac{1}{4}$ +1/16	9				
Fines 4	-1/16	4				

SP 30 SW 18

3415 0234

South of Aston

Block E

Surface level +69.5 m (+228 ft)
 Water struck at +67.3 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 0.7 m (2.5 ft)
 Mineral 2.5 m (8.0 ft)
 Bedrock 1.0 m+ (3.5 ft+)

LOG

		Thickness	Depth
		m (ft)	m (ft)
	Soil	0.2 (0.5)	0.2 (0.5)
Second Terrace Deposits	Clay, brown	0.5 (1.5)	0.7 (2.5)
	Sandy gravel	2.5 (8.0)	3.2 (10.5)
	Gravel: fine with coarse subangular to subrounded flint and limestone		
	Sand: coarse and medium with fine		
Oxford Clay	Clay, blue mottled brown passing into blue	1.0+ (3.5+)	4.2 (14.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 38	+16	7	0.7 - 1.7	9	63	28
	-16+4	31	1.7 - 2.7	5	50	45
			2.7 - 3.2	2	54	44
Sand 56	-4+1	28				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	6				
Fines 6	-1/16	6				

SP 30 NE 1

3507 0844

North-west of Ducklington

Block C

Surface level (+79.3 m) +260 ft
 Water struck at (+78.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 1.3 m (4.5 ft)
 Mineral 3.0 m (10.0 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness m (ft)	Depth m (ft)
Alluvium	Soil on silty clay	1.3 (4.5)	1.3 (4.5)
First Terrace Deposits	Gravel Gravel: fine with coarse subrounded to well rounded limestone with a trace of quartzite and quartz. Scattered cobbles Sand: coarse with medium and a little fine	3.0 (10.0)	4.3 (14.0)
Oxford Clay	Clay, stiff, brown passing into blue	0.3+ (1.0+)	4.6 (15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 57	+16	16	1.3 - 2.3	2	46	52
	-16+4	41	2.3 - 3.3	1	41	58
			3.3 - 4.3	1	38	61
Sand 42	-4+1	28				
	-1+1/4	12				
	-1/4+1/16	2				
Fines 1	-1/16	1				

SP 30 NE 2

3603 0830

North of Ducklington

Block C

Surface level (+77.4 m) +254 ft
 Water struck at (+75.9 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 April 1971

Overburden 1.5 m (5.0 ft)
 Mineral 6.0 m (19.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, brown mottled grey	0.9	(3.0)	1.2	(4.0)
	Peat	0.2	(0.5)	1.4	(4.5)
	Clay, silty, greyish brown	0.1	(0.5)	1.5	(5.0)
First Terrace Deposits	Gravel Gravel: fine with coarse subangular to subrounded limestone. Scattered limestone and quartzite cobbles below 5.5 m Sand: coarse with medium and a little fine	6.0	(19.5)	7.5	(24.5)
Oxford Clay	Clay, grey	0.5+	(1.5+)	8.0	(26.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 55	+16	15	1.5 - 2.5	2	35	63
	-16+4	40	2.5 - 3.5	2	46	52
			3.5 - 4.5	2	45	53
Sand 42	-4+1	23	4.5 - 5.5	3	37	60
	-1+ $\frac{1}{4}$	15	5.5 - 6.5	4	48	48
	- $\frac{1}{4}$ +1/16	4	6.5 - 7.5	3	38	59
Fines 3	-1/16	3				

SP 30 NE 3

3659 0749

East of Ducklington

Block C

Surface level (+75.3 m) +247 ft
 Water struck at (+73.9 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 1.4 m (4.5 ft)
 Mineral 5.0 m (16.5 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Soil on soft clay	1.4	(4.5)	1.4	(4.5)
First Terrace Deposits	Gravel Gravel: fine with coarse, subangular to well rounded tabular limestone and a trace of sandstone and quartz Sand: coarse with medium and trace of fine quartz and limestone, grey	5.0	(16.5)	6.4	(21.0)
Oxford Clay	Clay, bluish-grey	0.4+	(1.5+)	6.8	(22.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 57	+16	16	1.4 - 2.4	2	39	59
	-16+4	41	2.4 - 3.4	1	45	54
			3.4 - 4.4	1	47	52
Sand 42	-4+1	24	4.4 - 5.4	1	43	56
	-1+ $\frac{1}{4}$	16	5.4 - 6.4	1	36	63
	- $\frac{1}{4}$ +1/16	2				
Fines 1	-1/16	1				

SP 30 NE 4

3771 0702

Near Gill Mill Farm, South Leigh

Block C

Surface level (+73.8 m) +242 ft
 Water struck at (+73.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 0.5 m (1.5 ft)
 Mineral 5.9 m (19.5 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, silty, brown	0.4	(1.5)	0.5	(1.5)
First Terrace Deposits	Gravel Gravel: fine with coarse limestone with a trace of quartz, generally subangular to well rounded. Trace of quartzite and coarse angular flint towards base Sand: coarse with medium and a little fine	5.9	(19.5)	6.4	(21.0)
Oxford Clay	Clay, grey passing into bluish-grey	0.4+	(1.5+)	6.8	(22.5)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	55	+16	14	0.5 - 1.5	9	44	47
		-16+4	41	1.5 - 2.5	3	41	56
				2.5 - 3.5	1	40	59
Sand	41	-4+1	23	3.5 - 4.5	2	46	52
		-1+ $\frac{1}{4}$	13	4.5 - 5.5	3	37	60
		- $\frac{1}{4}$ +1/16	5	5.5 - 6.4	4	46	55
Fines	4	-1/16	4				

SP 30 NE 5

3773 0591

Hardwick

Block C

Surface level (+78.6 m) +258 ft
 Water struck at (+78.1 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 0.5 m (1.5 ft)
 Mineral 3.6 m (12.0 ft)
 Bedrock 0.9 m+ (3.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Second Terrace Deposits	Clay, silty, brown	0.5	(1.5)	0.5	(1.5)
	Gravel	3.6	(12.0)	4.1	(13.5)
	Gravel: fine with coarse subrounded to well rounded limestone with some quartz, sandstone, ironstone and a little flint. Trace of flint cobbles below 2.5 m				
	Sand: coarse with medium and a little fine quartz and limestone				
Oxford Clay	Clay, silty, brown passing into blue	0.9+	(3.0+)	5.0	(16.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages	
					Sand	Gravel
Gravel 68	+16	21	0.5 - 1.5	1	31	68
	-16+4	47	1.5 - 2.5	1	32	67
			2.5 - 3.5	1	32	67
Sand 30	-4+1	19	3.5 - 4.1	4	26	70
	-1+1/4	9				
	-1/4+1/16	2				
Fines 2	-1/16	2				

SP 30 NE 6

3828 0763

Rushy Common, South Leigh

Block C

Surface level (+72.9 m) +239 ft

Water struck at (+71.9 m)

Shell and auger (modified) 152 mm (6 in) diameter

April 1971

Overburden 0.3 m (1.0 ft)

Mineral 2.0 m (6.5 ft)

Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil and subsoil	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Gravel Gravel: fine with coarse subrounded limestone with some flint and a trace of well rounded quartz Sand: coarse with medium and a little fine	2.0	(6.5)	2.3	(7.5)
Oxford Clay	Clay, brownish-grey	0.5+	(1.5+)	2.8	(9.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 54	+16	9	0.3 - 1.3	7	46	47
	-16+4	45	1.3 - 2.3	7	32	61
Sand 39	-4+1	21				
	-1+ $\frac{1}{4}$	14				
	- $\frac{1}{4}$ +1/16	4				
Fines 7	-1/16	7				

SP 30 NE 7

3918 0719

Near Tar Farm, South Leigh

Block H

Surface level (+87.2 m) +286 ft

Water level not recorded

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Overburden 1.0 m (3.5 ft)

Mineral 1.1 m (3.5 ft)

Bedrock 0.9 m+ (3.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Fourth Terrace Deposits	Clay, silty, with flint pebbles, brown	0.7	(2.5)	1.0	(3.5)
	'Clayey' sandy gravel	1.1	(3.5)	2.1	(7.0)
	Gravel: fine with a little coarse limestone with flint, well rounded to sub-angular				
	Sand: coarse and medium with a little fine				
Oxford Clay	Clay, greyish-blue mottled brown, selenite crystals in lower part	0.9+	(3.0+)	3.0	(10.0)

GRADING

Mean for Deposits			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 44	+16	6	1.0 - 2.1	11	45	44
	-16+4	38				
Sand 45	-4+1	21				
	-1+ $\frac{1}{4}$	20				
	- $\frac{1}{4}$ +1/16	4				
Fines 11	-1/16	11				

SP 30 NE 8

3999 0608

Near Tar Wood, Stanton Harcourt

Block H

Surface level +72.8 m (+239 ft)

Water not struck

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Waste 1.7 m (5.5 ft)

Bedrock 1.3 m+ (4.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
?Head	Clay, silty, brown, with pebbles	0.9	(3.0)	0.9	(3.0)
	Clay, bluish-grey, with scattered limestone pebbles	0.8	(2.5)	1.7	(5.5)
Oxford Clay	Clay, grey, mottled reddish-brown	1.3+	(4.5+)	3.0	(10.0)

SP 30 NE 9

3701 0813

South of High Cogges, Witney

Block C

Surface level +75.9 m (+249 ft)

Overburden 0.8 m (2.5 ft)

Water struck at +74.3 m

Mineral 4.0 m (13.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 1.0 m+ (3.5 ft+)

February 1974

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, orange-brown	0.7	(2.5)	0.8	(2.5)
	Gravel, with clay from 3.7 to 3.8 m Gravel: fine with coarse subangular to subrounded platy limestone and flint Sand: coarse with medium and a little fine	4.0	(13.0)	4.8	(16.0)
Oxford Clay	Clay, dark grey, with shell fragments	1.0+	(3.5+)	5.8	(19.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 48	+16	13	0.8 - 1.8	15	43	42
	-16+4	35	1.8 - 2.8	3	44	53
			2.8 - 3.7	2	49	49
Sand 44	-4+1	25	3.7 - 3.8	10	Clay 40	50
	-1+1/4	15	3.8 - 4.8			
	-1/4+1/16	4				
Fines 8	-1/16	8				

SP 30 SE 1

3567 0416

South of Yelford

Block E

Surface level (+64.9 m) +213 ft
 Water struck at (+64.7 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 2.2 m (7.0 ft)
 Mineral 2.4 m (8.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Clay, silty, brown passing into yellowish-brown, scattered limestone pebbles	2.2	(7.0)	2.2	(7.0)
First Terrace Deposits	Sandy gravel Gravel: fine with coarse limestone with a trace of quartz, flint and worn belemnite fragments Sand: coarse and medium with a little fine	2.4	(8.0)	4.6	(15.0)
Oxford Clay	Clay, stiff, grey	0.4+	(1.5+)	5.0	(16.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages Sand	Gravel
Gravel 43	+16	6	2.2 - 3.2	2	56	42
	-16+4	37	3.2 - 4.6	2	54	44
Sand 55	-4+1	29				
	-1+ $\frac{1}{4}$	23				
	- $\frac{1}{4}$ +1/16	3				
Fines 2	-1/16	2				

SP 30 SE 2

3546 0319

East of Cote

Block E

Surface level (+68.0 m) +223 ft
 Water struck at (+65.5 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 March 1971

Overburden 1.2 m (4.0 ft)
 Mineral 2.8 m (9.0 ft)
 Bedrock 0.2 m+ (0.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Second Terrace Deposits	Clay, silty, with limestone and flint pebbles, brown	1.0	(3.5)	1.2	(4.0)
	Sandy gravel Gravel: fine with coarse subrounded to well rounded limestone with sub-angular to subrounded flint Sand: coarse and medium with fine quartz, limestone and shell debris	2.8	(9.0)	4.0	(13.0)
Oxford Clay	Clay, light blue passing into grey	0.2+	(0.5+)	4.2	(14.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 44	+16	6	1.2 - 2.2	5	44	51
	-16+4	38	2.2 - 3.2	6	50	44
			3.2 - 4.0	6	56	38
Sand 50	-4+1	22				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	6				
Fines 6	-1/16	6				

SP 30 SE 3

3501 0247

South of Cote

Block E

Surface level (+64.6 m) +212 ft
 Water struck at (+63.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 1.0 m (3.5 ft)
 Mineral 2.4 m (8.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Clay, silty, blue mottled yellow passing into bluish-brown	1.0	(3.5)	1.0	(3.5)
First Terrace Deposits	Gravel Gravel: fine with coarse limestone with flint and quartz, subangular to well rounded Sand: coarse and medium with a little fine limestone and quartz	2.4	(8.0)	3.4	(11.0)
Oxford Clay	Clay, stiff, bluish-grey	0.4+	(1.5+)	3.8	(12.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages Sand	Gravel
Gravel 52	+16	8	1.0 - 2.0	2	51	47
	-16+4	44	2.0 - 3.4	1	43	56
Sand 47	-4+1	23				
	-1+ $\frac{1}{4}$	21				
	- $\frac{1}{4}$ +1/16	3				
Fines 1	-1/16	1				

SP 30 SE 4

3558 0140

North-west of Chimney

Block G

Surface level (+64.6 m) +212 ft
 Water struck at (+63.2 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 April 1971

Overburden 1.3 m (4.5 ft)
 Mineral 1.7 m (5.5 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness	Depth
		m (ft)	m (ft)
	Soil	0.3 (1.0)	0.3 (1.0)
Alluvium	Clay, silty, stony, light brown	1.0 (3.5)	1.3 (4.5)
First Terrace Deposits	'Clayey' gravel Gravel: fine with some coarse sub-angular to well rounded limestone with flint Sand: coarse and medium with fine	1.7 (5.5)	3.0 (10.0)
Oxford Clay	Clay, grey mottled brown, passing into bluish-grey	0.3+ (1.0+)	3.3 (11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 46	+16	3	1.3 - 2.3	11	48	41
	-16+4	43	2.3 - 3.0	8	38	54
Sand 44	-4+1	19				
	-1+ $\frac{1}{4}$	18				
	- $\frac{1}{4}$ +1/16	7				
Fines 10	-1/16	10				

SP 30 SE 5

3539 0049

South-west of Chimney

Block G

Surface level (+64.3 m) +211 ft

Water struck at (+61.0 m)

Shell and auger (modified) 152 mm (6 in) diameter

September 1971

Waste 3.6 m (12.0 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, stiff, light brown mottled light grey. Scattered fragile gastropod shells	0.3	(1.0)	0.5	(1.5)
	Clay, peaty, soft, dark brown	0.1	(0.5)	0.6	(2.0)
	Silt, peaty, soft, grey, with thin dark brown peat bands. Gastropod shells common	2.7	(9.0)	3.3	(11.0)
	Gravel, sandy and silty. Mainly sub-rounded limestone with trace of quartz and flint	0.3	(1.0)	3.6	(12.0)
Oxford Clay	Clay, stiff, light grey, with fragile shells	0.4+	(1.5+)	4.0	(13.0)

SP 30 SE 6

3671 0402

North-east of Cote

Block E

Surface level (+64.6 m) +212 ft

Overburden 1.0 m (3.5 ft)

Water struck at (+63.2 m)

Mineral 4.2 m (14.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.3 m+ (1.0 ft+)

April 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, stiff, grey mottled brown	0.8	(2.5)	1.0	(3.5)
First Terrace Deposits	Sandy gravel Gravel: fine with some coarse sub-rounded limestone and subangular flint, trace of quartzite Sand: medium and coarse with fine	4.2	(14.0)	5.2	(17.0)
Oxford Clay	Clay, stiff, brown	0.3+	(1.0+)	5.5	(18.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 36	+16	2	1.0 - 2.0	13	59	28
	-16+4	34	2.0 - 3.0	11	61	28
Sand 55	-4+1	18	3.0 - 4.0	4	43	53
	-1+ $\frac{1}{4}$	27	4.0 - 5.2	9	56	35
	- $\frac{1}{4}$ +1/16	10				
Fines 9	-1/16	9				

SP 30 SE 7

3618 0221

South-east of Cote

Block G

Surface level (+68.0 m) +223 ft

Water struck at (+67.5 m)

Shell and auger (modified) 152 mm (6 in) diameter

February 1971

Overburden 0.5 m (1.5 ft)

Mineral 2.1 m (7.0 ft)

Bedrock 0.7 m+ (2.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Second Terrace Deposits	Clay, silty	0.5	(1.5)	0.5	(1.5)
	Sandy gravel Gravel: fine with coarse, subrounded to well rounded limestone with some flint and quartz Sand: coarse and medium with a little fine	2.1	(7.0)	2.6	(8.5)
Oxford Clay	Clay	0.7+	(2.5+)	3.3	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Percentages	
					Sand	Gravel
Gravel 37	+16	5	0.5 - 1.5	3	69	28
	-16+4	32	1.5 - 2.6	2	53	45
Sand 61	-4+1	30				
	-1+ $\frac{1}{4}$	27				
	- $\frac{1}{4}$ +1/16	4				
Fines 2	-1/16	2				

SP 30 SE 8

3627 0138

North-east of Chimney

Block G

Surface level (+64.3 m) +211 ft

Waste 1.5 m (5.0 ft)

Water not struck

Bedrock 4.5 m+ (15.0 ft+)

Shell and auger (modified) 152 mm (6 in) diameter

April 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Alluvium	Clay, silty, yellowish-brown, scattered small flint and limestone pebbles	1.1	(3.5)	1.5	(5.0)
Oxford Clay	Clay, brown mottled bluish-grey, with selenite crystals	4.1	(13.5)	5.6	(18.5)
	Clay, bluish-grey, with selenite crystals and abundant pyrite	0.4+	(1.5+)	6.0	(19.5)

SP 30 SE 9

3660 0053

South-east of Chimney

Block G

Surface level (+62.8 m) +206 ft
 Water struck at (+60.9 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 April 1971

Overburden 2.1 m (7.0 ft)
 Mineral 2.1 m (7.0 ft)
 Waste 0.1 m (0.5 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, soft, blue mottled brown	1.5	(5.0)	1.8	(6.0)
	Sand, silty and pebbly	0.3	(1.0)	2.1	(7.0)
First Terrace Deposits	Sandy gravel	2.1	(7.0)	4.2	(14.0)
	Gravel: fine with a trace of coarse sub-rounded to well rounded limestone with trace of flint and shell fragments				
	Sand: coarse with medium and some fine				
	Silt, blue	0.1	(0.5)	4.3	(14.0)
Oxford Clay	Clay, stiff, pale greyish-blue	0.4+	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit			Depth below surface (m)	Percentages		
%	mm	%		Fines	Sand	Gravel
Gravel 30	+16	1	2.1 - 3.1	9	62	29
	-16+4	29	3.1 - 4.2	2	68	30
Sand 65	-4+1	36				
	-1+ $\frac{1}{4}$	23				
	- $\frac{1}{4}$ +1/16	6				
Fines 5	-1/16	5				

Surface level (+66.1 m) +217 ft
 Water struck at (+63.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 April 1971

Overburden 0.6 m (2.0 ft)
 Mineral 3.6 m (12.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, pebbly, brown	0.4	(1.5)	0.6	(2.0)
	'Clayey' sandy gravel	3.6	(12.0)	4.2	(14.0)
	Gravel: fine with some coarse sub-rounded to well rounded limestone with some quartzite, flint and shell fragments				
	Sand: medium with coarse and fine				
Oxford Clay	Clay, bluish-grey	0.4+	(1.5+)	4.6	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 25	+16	3	0.6 - 1.6	24	46	30
	-16+4	22	1.6 - 2.6	13	67	20
			2.6 - 3.6	8	66	26
Sand 60	-4+1	19	3.6 - 4.2	14	65	21
	-1+ $\frac{1}{4}$	29				
	- $\frac{1}{4}$ +1/16	12				
Fines 15	-1/16	15				

SP 30 SE 11

3704 0316

New Shifford Farm, West of Brighthampton Block G

Surface level (+66.8 m) +219 ft
 Water struck at (+65.8 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Waste 1.5 m (5.0 ft)
 Bedrock 0.8 m+ (2.5 ft+)

LOG

		Thickness m (ft)	Depth m (ft)
	Soil and subsoil	1.0 (3.5)	1.0 (3.5)
Second Terrace Deposits	Sand, with pebbles of well rounded limestone	0.5 (1.5)	1.5 (5.0)
Oxford Clay	Clay	0.8+ (2.5+)	2.3 (7.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 21	+16	1	1.0 - 1.5	6	73	21
	-16+4	21				
Sand 73	-4+1	31				
	-1+ $\frac{1}{4}$	35				
	- $\frac{1}{4}$ +1/16	7				
Fines 6	-1/16	6				

SP 30 SE 12

3751 0185

Shifford

Block G

Surface level (+64.6 m) +212 ft
 Water struck at (+63.1 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 1.5 m (5.0 ft)
 Mineral 1.4 m (4.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
Alluvium	Clay, brown, silty	1.5	(5.0)	1.5	(5.0)
First Terrace Deposits	Sandy gravel Gravel: fine with a trace of coarse, subrounded to well rounded limestone with some quartz and flint Sand: coarse with medium and a little fine quartz and limestone	1.4	(4.5)	2.9	(9.5)
Oxford Clay	Clay	0.5+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	32	+16 -16+4	1 31	1.5 - 2.9	6	62	32
Sand	62	-4+1 -1+ $\frac{1}{4}$ - $\frac{1}{4}$ +1/16	34 21 7				
Fines	6	-1/16	6				

SP 30 SE 13

3850 0332

Brighthampton

Block G

Surface level (+66.8 m) +219 ft
 Water level not recorded
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1971

Overburden 0.5 m (1.5 ft)
 Mineral 1.5 m (5.0 ft)
 Bedrock 0.3 m+ (1.0 ft+)

LOG

		Thickness m (ft)	Depth m (ft)
	Soil	0.5 (1.5)	0.5 (1.5)
First Terrace Deposits	'Clayey' sandy gravel Gravel: fine with some coarse, sub-rounded to well rounded limestone with quartzite and flint. Trace of flint cobbles Sand: coarse and medium with fine	1.5 (5.0)	2.0 (6.5)
Oxford Clay	Clay, blue mottled brown passing into grey, stiff	0.3+ (1.0+)	2.3 (7.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 31	+16	3	0.5 - 1.5	14	57	29
	-16+4	28	1.5 - 2.0	6	61	33
Sand 58	-4+1	28				
	-1+ $\frac{1}{4}$	23				
	- $\frac{1}{4}$ +1/16	7				
Fines 11	-1/16	11				

SP 30 SE 14

3842 0178

South of Brighthampton

Block E

Surface level (+63.7 m) +209 ft
 Water struck at (+62.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 April 1971

Overburden 0.8 m (2.5 ft)
 Mineral 3.6 m (12.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, brown, sand and stony at base	0.5	(1.5)	0.8	(2.5)
First Terrace Deposits	Sandy gravel Gravel: fine with some coarse, sub-angular to well rounded limestone with flint and shell fragments and a trace of quartzite Sand: coarse and medium with fine	3.6	(12.0)	4.4	(14.5)
Oxford Clay	Clay, stiff, bluish-grey, with pyritised ammonites	0.5+	(1.5+)	4.9	(16.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 37	+16	4	0.8 - 1.8	9	62	29
	-16+4	33	1.8 - 2.8	2	54	44
			2.8 - 3.8	2	57	41
Sand 59	-4+1	27	3.8 - 4.4	2	66	32
	-1+ $\frac{1}{4}$	24				
	- $\frac{1}{4}$ +1/16	8				
Fines 4	-1/16	4				

SP 30 SE 15

3504 0412

North of Cote

Block E

Surface level +75.9 m (+249 ft)
 Water struck at + 74.3 m
 Shell and auger (modified) 152 mm (6 in) diameter
 February 1974

Overburden 1.6 m (5.5 ft)
 Mineral 2.8 m (9.0 ft)
 Bedrock 1.7 m+ (5.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, grey mottled brown	0.4	(1.5)	0.6	(2.0)
	Clay, with limestone pebbles	1.0	(3.5)	1.6	(5.5)
First Terrace Deposits	Sandy gravel	2.8	(9.0)	4.4	(14.5)
	Gravel: fine with coarse, subrounded limestone with shell fragments and a trace of flint. Rare cobbles of shelly limestone and flint Sand: medium and coarse with fine limestone with quartz				
Oxford Clay	Clay, light greyish-brown passing into blue	1.7+	(5.5+)	6.1	(20.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 42	+16	8	1.6 - 2.6	4	56	40
	-16+4	34	2.6 - 4.4	2	55	43
Sand 55	-4+1	21				
	-1+ $\frac{1}{4}$	26				
	- $\frac{1}{4}$ +1/16	8				
Fines 3	-1/16	3				

SU 29 NW 4

2098 9898

North-east of Inglesham

Block F

Surface level (+71.9 m) +236 ft
 Water struck at (+71.2 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.6 m (2.0 ft)
 Mineral 2.0 m (6.5 ft)
 Bedrock 1.2 m+ (4.0 ft+)

LOG

		Thickness	Depth
		m (ft)	m (ft)
	Soil	0.1 (0.5)	0.1 (0.5)
Alluvium	Clay, silty, brown	0.5 (1.5)	0.6 (2.0)
First Terrace Deposits	Gravel Gravel: fine with some coarse to 1.6 m passing into fine with coarse. Limestone with some chert, scattered flint cobbles in the lower part Sand: coarse with medium and a little fine	2.0 (6.5)	2.6 (8.5)
Oxford Clay	Clay, shaly, brownish-grey, with fossils	1.2+ (4.0+)	3.8 (12.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 49	+16	8	0.6 - 1.6	5	51	44
	-16+4	41	1.6 - 2.6	3	42	55
Sand 47	-4+1	23				
	-1+ $\frac{1}{4}$	19				
	- $\frac{1}{4}$ +1/16	5				
Fines 4	-1/16	4				

Surface level (+71.9 m) +236 ft
 Water struck at (+69.6 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 October 1971

Overburden 3.3 m (11.0 ft)
 Mineral 1.1 m (3.5 ft)
 Bedrock 0.6 m+ (2.0 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil, dark brown	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, silty, stiff, light grey mottled reddish-brown, with scattered gastropod shells	0.5	(1.5)	0.8	(2.5)
	Clay, silty, dark chocolate brown, with thin peat layers	0.1	(0.5)	0.9	(3.0)
	Silt, soft, peaty, dark grey with gastropod shells	1.4	(4.5)	2.3	(7.5)
	Clayey gravel, with thin clay layers, dark grey	1.0	(3.5)	3.3	(11.0)
First Terrace Deposits	Gravel Gravel: fine with coarse. Subrounded grey limestone with a little sub-angular flint and a trace of rounded quartz. A few limestone and flint cobbles at the base Sand: coarse with medium and a trace of fine, limestone with quartz, grey	1.1	(3.5)	4.4	(14.5)
Oxford Clay	Clay, stiff, slightly shaly, dark grey, with shells	0.6+	(2.0+)	5.0	(16.5)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	62	+16 -16+4	6 56	3.3 - 4.4	2	36	62
Sand	36	-4+1 -1+ $\frac{1}{4}$ - $\frac{1}{4}$ +1/16	25 10 1				
Fines	2	-1/16	2				

Surface level (+77.1 m) +253 ft
 Water struck at (+73.3 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 October 1971

Overburden 1.3 m (4.5 ft)
 Mineral 4.6 m (15.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, pebbly in the lower part, brown	0.3	(1.0)	0.3	(1.0)
Second Terrace Deposits	Clay, stiff, silty, pebbly, orange-brown	1.0	(3.5)	1.3	(4.5)
	Sandy gravel	4.6	(15.0)	5.9	(19.5)
	Gravel: fine with a trace of coarse. Sub-rounded, tabular and platy buff brown and blue limestone with a little sub-angular flint, a trace of rounded quartz, and a few shells.				
	Sand: coarse and medium with fine, silty in the upper part, limestone with quartz, yellowish-brown				
Oxford Clay	Clay, stiff, brown streaked reddish-brown passing into dark greyish-blue, with shells	0.5+	(1.5+)	6.4	(21.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 35	+16	2	1.3 - 2.3	13	55	32
	-16+4	33	2.3 - 3.3	15	55	30
			3.3 - 4.3	6	56	38
Sand 56	-4+1	25	4.3 - 5.3	5	63	32
	-1+ $\frac{1}{4}$	24	5.3 - 5.9	3	48	49
	- $\frac{1}{4}$ +1/16	7				
Fines 9	-1/16	9				

SU 29 NW 7

2168 9783

Buscot Wick

Block F

Surface level (+71.9 m) +236 ft
 Water struck at (+70.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.4 m (1.5 ft)
 Mineral 2.1 m (7.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, with scattered chert pebbles, brown	0.2	(0.5)	0.4	(1.5)
	Gravel	2.1	(7.0)	2.5	(8.0)
	Gravel: fine with coarse. Rounded limestone with some subangular flint, and a few shells				
	Sand: coarse with medium and a little fine, silty at the top				
Oxford Clay	Clay, stiff, bluish-grey	0.5+	(1.5+)	3.0	(10.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 52	+16	8	0.4 - 1.4	10	41	49
	-16+4	44	1.4 - 2.5	4	42	54
Sand 41	-4+1	21				
	-1+ $\frac{1}{4}$	16				
	- $\frac{1}{4}$ +1/16	4				
Fines 7	-1/16	7				

SU 29 NW 8

2261 9951

East of Lechlade

Block A

Surface level (+72.2 m) +237 ft
 Water struck at (+71.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.3 m (1.0 ft)
 Mineral 3.7 m (12.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, stony, soft	0.2	(0.5)	0.3	(1.0)
	Gravel Gravel: fine with coarse. Subrounded limestone with a little subangular flint and a few shells Sand: coarse and medium with some fine, silty at the top, white and brown	3.7	(12.0)	4.0	(13.0)
Oxford Clay	Clay, shaly with lamellibranch impressions, brown passing into greenish-brown	0.5+	(1.5+)	4.5	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	53	+16	0.3 - 1.2	9	43	48
		-16+4	1.2 - 2.2	6	43	51
			2.2 - 3.2	1	37	61
Sand	42	-4+1	3.2 - 4.0	5	48	47
		-1+ $\frac{1}{4}$				
		- $\frac{1}{4}$ +1/16				
Fines	5	-1/16				

SU 29 NW 9

2209 9876

South-east of Lechlade

Block F

Surface level (+72.5 m) +238 ft
 Water struck at (+71.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 1.3 m (4.5 ft)
 Mineral 2.8 m (9.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, with scattered small chert pebbles	0.7	(2.5)	0.9	(3.0)
	Silt, with some fine sand and scattered limestone pebbles, brown, grey and white in layers	0.4	(1.5)	1.3	(4.5)
First Terrace Deposits	Gravel Gravel: fine with coarse. Rounded limestone with some subangular flint and a few shells Sand: coarse with medium and a little fine	2.8	(9.0)	4.1	(13.5)
Oxford Clay	Clay, with shells, bluish-grey	0.5+	(1.5+)	4.6	(15.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 53	+16	10	1.3 - 2.3	5	48	47
	-16+4	43	2.3 - 3.3	2	36	62
			3.3 - 4.1	3	47	50
Sand 44	-4+1	24				
	-1+ $\frac{1}{4}$	16				
	- $\frac{1}{4}$ +1/16	4				
Fines 3	-1/16	3				

SU 29 NW 10

2342 9934

Paradise Farm, West of Kelmscott

Block A

Surface level (+72.5 m) +238 ft

Overburden 0.5 m (1.5 ft)

Water struck at (+71.0 m)

Mineral 4.8 m (16.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.3 m+ (1.0 ft+)

June 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, hard, limestone pebbles at base	0.4	(1.5)	0.5	(1.5)
	Gravel	4.8	(16.0)	5.3	(17.5)
	Gravel: fine with coarse. Subrounded white limestone with a little subangular flint and rounded quartz				
	Sand: coarse and medium with a little fine, silty at the top, whitish-brown				
Oxford Clay	Clay, carbonaceous, brown passing into bluish-greenish-grey, with shells	0.3+	(1.0+)	5.4	(18.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel	
Gravel	51	+16	9	0.5 - 1.5	8	49	43
		-16+4	42	1.5 - 2.5	2	33	65
				2.5 - 3.5	2	48	50
Sand	45	-4+1	22	3.5 - 4.5	3	49	48
		-1+ $\frac{1}{4}$	18	4.5 - 5.3	3	44	53
		- $\frac{1}{4}$ +1/16	5				
Fines	4	-1/16	4				

SU 29 NW 11

2338 9873

North of Buscot

Block A

Surface level (+71.0 m) +233 ft
 Water struck at (+69.8 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.3 m (1.0 ft)
 Mineral 3.4 m (11.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, stony, dark brown	0.2	(0.5)	0.3	(1.0)
	Gravel, sandy at base Gravel: fine with coarse. Subrounded limestone with some subangular, flint and a few shells Sand: coarse and medium with fine, silty from 1.3 to 2.3 m, light brown	3.4	(11.0)	3.7	(12.0)
Oxford Clay	Clay, bluish-grey	0.5+	(1.5+)	4.2	(14.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 50	+16	7	0.3 - 1.3	3	38	59
	-16+4	43	1.3 - 2.3	11	46	43
			2.3 - 3.3	4	41	55
Sand 44	-4+1	20	3.3 - 3.7	6	65	29
	-1+ $\frac{1}{4}$	19				
	- $\frac{1}{4}$ +1/16	5				
Fines 6	-1/16	6				

SU 29 NW 12

2316 9805

Buscot

Block F

Surface level (+70.1 m) +230 ft
 Water struck at (+68.0 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 2.0 m (6.5 ft)
 Mineral 1.0 m (3.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, silty brown	0.6	(2.0)	0.7	(2.5)
	Clay, silty, brown mottled grey	0.8	(2.5)	1.5	(5.0)
	Silt, blue passing into light blue	0.5	(1.5)	2.0	(6.5)
First Terrace Deposits	Gravel	1.0	(3.5)	3.0	(10.0)
	Gravel: fine with coarse. Limestone with some flint Sand: coarse and medium with a little fine, silty				
Oxford Clay	Clay, light greyish-blue	0.5+	(1.5+)	3.5	(11.5)

GRADING

Mean for Deposit			Depth below surface (m)	Bulk Samples Percentages		
%	mm	%		Fines	Sand	Gravel
Gravel 49	+16	6	2.0 - 3.0	10	41	49
	-16+4	43				
Sand 41	-4+1	18				
	-1+ $\frac{1}{4}$	18				
	- $\frac{1}{4}$ +1/16	5				
Fines 10	-1/16	10				

SU 29 NW 13

2453 9941

North-west of Kelmscott

Block A

Surface level (+71.3 m) +234 ft

Water struck at (+69.9 m)

Shell and auger (modified) 152 mm (6 in) diameter

June 1971

Overburden 0.5 m (1.5 ft)

Mineral 3.7 m (12.0 ft)

Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, hard, with scattered stones, brown	0.2	(0.5)	0.5	(1.5)
	Gravel	3.7	(12.0)	4.2	(14.0)
	Gravel: fine with coarse. Rounded limestone with some subangular flint a few shells, and rare cobbles of compound coral				
	Sand: coarse and medium with fine, silty at the top, light brown				
Oxford Clay	Clay, brown passing into bluish-grey	0.5+	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel	50	+16	0.5 - 1.5	10	50	40
		-16+4	1.5 - 2.5	5	48	47
			2.5 - 3.5	2	34	64
Sand	45	-4+1	3.5 - 4.2	4	48	48
		-1+ $\frac{1}{4}$				
		- $\frac{1}{4}$ +1/16				
Fines	5	-1/16				

SU 29 NW 14

2474 9850

South of Kelmscott

Block F

Surface level (+70.4 m) +231 ft

Overburden 1.9 m (6.0 ft)

Water struck at (+68.5 m)

Mineral 2.3 m (7.5 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

June 1971

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, soft, brown	1.7	(5.5)	1.9	(6.0)
First Terrace Deposits	Gravel Gravel: fine with coarse. Subrounded blue limestone, with some subangular flint and rounded quartzite. Scattered cobbles of limestone occur throughout Sand: coarse with medium and a little fine	2.3	(7.5)	4.2	(14.0)
Oxford Clay	Clay, bluish-grey	0.5+	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 58	+16	14	1.9 - 2.9	3	38	59
	-16+4	44	2.9 - 4.2	3	41	56
Sand 39	-4+1	22				
	-1+ $\frac{1}{4}$	14				
	- $\frac{1}{4}$ +1/16	3				
Fines 3	-1/16	3				

SU 29 NE 5

2573 9955

East of Kelmscott

Block F

Surface level (+69.8 m) +229 ft

Overburden 0.5 m (1.5 ft)

Water struck at (+68.5 m)

Mineral 2.6 m (8.5 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

June 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, slightly sandy, with limestone and chert pebbles, brown	0.4	(1.5)	0.5	(1.5)
	Sandy gravel Gravel: fine with coarse. Subrounded limestone with a little subangular flint well rounded quartz, quartzite, and shell fragments Sand: medium with coarse and a little fine, silty at the top	2.6	(8.5)	3.1	(10.0)
Oxford Clay	Clay, bluish-grey, with fossils and pyrite	0.5+	(1.5+)	3.6	(12.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Fines	Sand	Gravel
Gravel 39	+16	9	0.5 - 1.4	10	61	29
	-16+4	30	1.4 - 2.4	5	55	40
			2.4 - 3.1	3	49	48
Sand 55	-4+1	22				
	-1+ $\frac{1}{4}$	26				
	- $\frac{1}{4}$ +1/16	7				
Fines 6	-1/16	6				

Surface level (+69.5 m) +228 ft
 Water struck at (+67.9 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.8 m (2.5 ft)
 Mineral 2.2 m (7.0 ft)
 Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, stony, brown	0.2	(0.5)	0.4	(1.5)
	Silt, light brown	0.4	(1.5)	0.8	(2.5)
	Sandy gravel Gravel: fine with coarse. Subrounded limestone with some subangular flint and a few shells Sand: coarse and medium with fine, silty at the top	2.2	(7.0)	3.0	(10.0)
Oxford Clay	Clay, bluish-grey, with shells	0.4+	(1.5+)	3.4	(11.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 40	+16	6	0.8 - 1.6	11	58	31
	-16+4	34	1.6 - 2.6	3	50	47
			2.6 - 3.0	3	55	42
Sand 54	-4+1	24				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	8				
Fines 6	-1/16	6				

SU 29 NE 7

2706 9925

Grafton Lock

Block D

Surface level (+68.9 m) +226 ft
 Water struck at (+67.5 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 June 1971

Overburden 0.9 m (3.0 ft)
 Mineral 3.1 m (10.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, soft, light brownish-blue	0.7	(2.5)	0.9	(3.0)
First Terrace Deposits	Gravel, sandy at the top Gravel: fine with coarse. Subrounded to rounded limestone with a little subangular flint, and a few shells Sand: coarse and medium with some fine, silty at the top, light brown and grey	3.1	(10.0)	4.0	(13.0)
Oxford Clay	Clay, bluish-grey, with shells	0.5+	(1.5+)	4.5	(15.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	52	+16	8	0.9 - 1.4	9	57	34
		-16+4	44	1.4 - 1.9	3	40	57
				1.9 - 2.9	2	48	50
Sand	45	-4+1	22	2.9 - 4.0	2	37	61
		-1+ $\frac{1}{4}$	18				
		- $\frac{1}{4}$ +1/16	5				
Fines	3	-1/16	3				

SU 29 NE 8

2832 9979

Radcot

Block D

Surface level (+68.6 m) +225 ft
 Water struck at (+67.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.7 m (2.5 ft)
 Mineral 3.2 m (10.5 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.4	(1.5)	0.4	(1.5)
First Terrace Deposits	Clay, silty, slightly sandy, brown	0.3	(1.0)	0.7	(2.5)
	Gravel	3.2	(10.5)	3.9	(13.0)
	Gravel: fine with coarse. Subrounded limestone, with a little quartz, flint and shell debris				
	Sand: coarse with medium and a little fine, yellowish-brown				
Oxford Clay	Clay, grey	0.5+	(1.5+)	4.4	(14.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 54	+16	17	0.7 - 1.7	6	39	55
	-16+4	37	1.7 - 2.7	11	33	56
			2.7 - 3.9	4	43	53
Sand 39	-4+1	20				
	-1+ $\frac{1}{4}$	15				
	- $\frac{1}{4}$ +1/16	4				
Fines 7	-1/16	7				

SU 29 NE 9

2848 9906

South of Radcot

Block F

Surface level (+68.3 m) +224 ft

Water struck at (+66.2 m)

Shell and auger (modified) 152 mm (6 in) diameter

September 1971

Overburden 2.1 m (7.0 ft)

Mineral 1.2 m (4.0 ft)

Bedrock 0.4 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, stiff, greyish-brown	0.4	(1.5)	0.6	(2.0)
	Clay, stiff, with gastropod shells, light grey mottled reddish-brown	0.6	(2.0)	1.2	(4.0)
	Clay, very silty, soft with a few sandy silt layers, yellow, light grey, and reddish-brown	0.5	(1.5)	1.7	(5.5)
	Silt, soft, light blue streaked brown and grey	0.4	(1.5)	2.1	(7.0)
First Terrace Deposits	Sandy gravel	1.2	(4.0)	3.3	(11.0)
	Gravel: fine with some coarse. Sub-rounded to rounded buff and brown limestone, with a little rounded quartz, and rare subangular flint. A few limestone cobbles occur at the base Sand: medium with coarse and a little fine, orange-brown				
Oxford Clay	Clay, stiff, brown passing into bluish-grey	0.4+	(1.5+)	3.7	(12.0)

GRADING

Mean for Deposit			Bulk Samples				
%	mm	%	Depth below surface (m)	Percentages			
				Fines	Sand	Gravel	
Gravel	32	+16	2.1 - 3.3	3	65	32	
		-16+4					6
Sand	65	-4+1					
		-1+ $\frac{1}{4}$					27
		- $\frac{1}{4}$ +1/16					34
Fines	3	-1/16					

SU 29 NE 10

2864 9708

North of Faringdon

Surface level (+71.6 m) +235 ft

Waste 2.1 m (7.0 ft)

Water not struck

Bedrock 1.9 m+ (6.0 ft+)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
First Terrace Deposits	Clay, silty, locally sandy, brown	1.7	(5.5)	1.9	(6.0)
	Clay, with scattered limestone and quartzite pebbles, brown	0.2	(0.5)	2.1	(7.0)
Oxford Clay	Clay, with selenite, fossils and pyrite, brown mottled blue	1.6	(5.5)	3.7	(12.0)
	Clay, stiff, blue mottled brown	0.3+	(1.0+)	4.0	(13.0)

SU 29 NE 11

2963 9948

East of Radcot

Block D

Surface level (+67.4 m) +221 ft
 Water struck at (+66.4 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Overburden 0.4 m (1.5 ft)
 Mineral 3.4 m (11.0 ft)
 Bedrock 0.2 m+ (0.6 ft+)

LOG

		Thickness m (ft)	Depth m (ft)
	Soil	0.4 (1.5)	0.4 (1.5)
First Terrace Deposits	Sandy gravel Gravel: fine with coarse at top passing into fine with some coarse below 1.3 m. Mainly subangular to subrounded limestone with some flint and quartz Sand: medium with coarse and a little fine to 1.3 m; coarse with medium and a little fine below 1.3 m	3.4 (11.0)	3.8 (12.5)
Oxford Clay	Clay, bluish-grey	0.2+ (0.5+)	4.0 (13.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 40	+16	7	0.4 - 0.7	6	48	46
	-16+4	33	0.7 - 1.3	17	43	40
			1.3 - 2.3	2	62	36
Sand 55	-4+1	25	2.3 - 3.3	1	49	50
	-1+1/4	23	3.3 - 3.8	5	74	21
	-1/4+1/16	7				
Fines 5	-1/16	5				

SU 29 NE 12

2959 9859

Smokedown Farm, Thrupp

Surface level (+68.0 m) +223 ft

Waste 1.5 m (5.0 ft)

Water struck at (+66.8 m)

Bedrock 1.5 m+ (5.0 ft+)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, brown mottled blue, with scattered limestone pebbles	0.9	(3.0)	1.2	(4.0)
	Gravel, sandy, very clayey, bluish- brown				
Oxford Clay	Clay, silty, stiff, bluish-brown	0.7	(2.5)	2.2	(7.0)
	Clay, grey, with shells and pyrite granules	0.8+	(2.5+)	3.0	(10.0)

SU 39 NW 5

3057 9899

Brixton Farm, Buckland

Block F

Surface level (+68.0 m) +223 ft

Overburden 0.6 m (2.0 ft)

Water struck at (+66.8 m)

Mineral 1.6 m (5.5 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil, clayey, stony	0.3	(1.0)	0.3	(1.0)
First Terrace Deposits	Clay, silty, brown	0.3	(1.0)	0.6	(2.0)
	Gravel	1.6	(5.5)	2.2	(7.0)
	Gravel: fine with coarse. Subrounded to well rounded limestone with some subangular flint, rounded quartz and worn shells				
	Sand: medium and coarse with fine, silty				
Oxford Clay	Clay, with fossils, bluish-grey	0.5+	(1.5+)	2.7	(9.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 49	+16	9	0.6 - 1.6	9	46	45
	-16+4	40	1.6 - 2.2	7	37	56
Sand 43	-4+1	16				
	-1+ $\frac{1}{4}$	21				
	- $\frac{1}{4}$ +1/16	6				
Fines 8	-1/16	8				

SU 39 NW 6

3151 9952

Near Ragnell Copse

Block D

Surface level (+66.8 m) +219 ft

Water struck at (+65.7 m)

Shell and auger (modified) 152 mm (6 in) diameter

May 1971

Overburden 0.5 m (1.5 ft)

Mineral 2.7 m (9.0 ft)

Bedrock 0.6 m+ (2.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, silty, brown mottled red, sandy and pebbly at base	0.4	(1.5)	0.5	(1.5)
First Terrace Deposits	Sandy gravel Gravel: fine with a trace of coarse sub-rounded to well rounded limestone with a little quartz, subangular flint and worn shell fragments Sand: coarse and medium with fine	2.7	(9.0)	3.2	(10.5)
Oxford Clay	Clay, slightly silty, bluish-grey	0.6+	(2.0+)	3.8	(12.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 41	+16	2	0.5 - 1.5	12	51	37
	-16+4	39	1.5 - 2.5	3	48	49
			2.5 - 3.2	5	59	36
Sand 52	-4+1	23				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	7				
Fines 7	-1/16	7				

SU 39 NW 7

3264 9934

Buckland Marsh Farm

Block D

Surface level (+66.8 m) +219 ft

Overburden 0.8 m (2.5 ft)

Water struck at (+65.3 m)

Mineral 2.7 m (9.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

May 1971

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil and clayey made ground	0.8	(2.5)	0.8	(2.5)
First Terrace Deposits	Sandy gravel Gravel: fine with a trace of coarse subrounded to well rounded limestone with a little flint and a few worn fossil fragments. Trace of flint cobbles Sand: medium and coarse with fine, light brown	2.7	(9.0)	3.5	(11.5)
Oxford Clay	Clay, bluish-grey	0.5+	(1.5+)	4.0	(13.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 39	+16	1	0.8 - 1.8	5	55	40
	-16+4	38	1.8 - 2.8	2	58	40
			2.8 - 3.5	4	59	37
Sand 58	-4+1	23				
	-1+ $\frac{1}{4}$	27				
	- $\frac{1}{4}$ +1/16	8				
Fines 3	-1/16	3				

SU 39 NE 10

3544 9980

South of Chimney

Block G

Surface level (+64.6 m) +212 ft
 Water struck at (+62.3 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 September 1971

Overburden 2.3 m (7.5 ft)
 Mineral 2.2 m (7.0 ft)
 Bedrock 0.5 m+ (1.5 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, stiff, light brown mottled grey	0.2	(0.5)	0.4	(1.5)
	Clay, soft, peaty, dark brown	0.3	(1.0)	0.7	(2.5)
	Silt, clayey, very soft, light bluish-grey passing into light greenish-blue	1.6	(5.5)	2.3	(7.5)
First Terrace Deposits .	Sandy gravel	2.2	(7.0)	4.5	(15.0)
	Gravel: fine with some coarse rounded to subrounded grey, buff and brown limestone with a trace of well rounded quartz, a little subrounded black chert and trace of flint, ironstone and shell fragments Sand: coarse with some fine				
Oxford Clay	Clay, stiff, light greyish-blue with scattered shells	0.5+	(1.5+)	5.0	(16.5)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 48	+16	4	2.3 - 3.3	1	51	48
	-16+4	44	3.3 - 4.5	1	50	49
Sand 51	-4+1	30				
	-1+ $\frac{1}{4}$	18				
	- $\frac{1}{4}$ +1/16	3				
Fines 1	-1/16	1				

SU 39 NE 11

3604 9932

West of Hinton Waldrist

Block G

Surface level (+65.5 m) +215 ft

Overburden 0.7 m (2.5 ft)

Water struck at (+64.8 m)

Mineral 2.4 m (8.0 ft)

Shell and auger (modified) 152 mm (6 in) diameter

Bedrock 0.5 m+ (1.5 ft+)

May 1971

LOG

		Thickness m	(ft)	Depth m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
First Terrace Deposits	Clay, silty, soft, brown	0.6	(2.0)	0.7	(2.5)
	'Clayey' pebbly sand	2.4	(8.0)	3.1	(10.0)
	Gravel: fine, with a trace of coarse limestone with some quartz and flint				
	Sand: coarse with medium and fine				
Oxford Clay	Clay, bluish-grey, silty	0.5+	(1.5+)	3.6	(12.0)

GRADING

Mean for Deposit			Bulk Samples			
%	mm	%	Depth below surface (m)	Percentages		
				Fines	Sand	Gravel
Gravel 15	+16	1	0.7 - 1.7	12	71	17
	-16+4	14	1.7 - 2.7	12	75	13
			2.7 - 3.1		No sample	
Sand 73	-4+1	30				
	-1+ $\frac{1}{4}$	22				
	- $\frac{1}{4}$ +1/16	21				
Fines 12	-1/16	12				

Surface level (+65.5 m) +215 ft
 Water struck at (+63.9 m)
 Shell and auger (modified) 152 mm (6 in) diameter
 May 1971

Waste 1.8 m (6.0 ft)
 Bedrock 1.2 m+ (4.0 ft+)

LOG

		Thickness		Depth	
		m	(ft)	m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown	1.2	(4.0)	1.4	(4.5)
First Terrace Deposits	Clay, silty, sandy, pebbly, brown	0.2	(0.5)	1.6	(5.5)
	Gravel, sandy and silty, limestone pebbles and shell fragments	0.2	(0.5)	1.8	(6.0)
Oxford Clay	Clay, bluish-grey, mottled brown, with selenite crystals	0.5	(1.5)	2.3	(7.5)
	Clay, blue	0.7+	(2.5+)	3.0	(10.0)

Appendix G: List of Workings

The existing workings are mainly on the floor of the Thames Valley and are concentrated about Lechlade in the west, where Second Terrace deposits are exploited, and in the east, southward of Brighthampton, where gravels beneath Alluvium on the floodplain are worked. In the Windrush valley extensive workings are located south-east of Hardwick in First Terrace deposits and older, now abandoned workings in the Second Terrace occur north of Brighthampton on the valley side, at the confluence of the Thames and

Windrush. The Second Terrace deposits are mostly worked dry, those in the First Terrace on Alluvium are wet, but are often pumped dry for easier extraction.

Table 12. List of principal active workings in 1974.

Location	Grid reference
Lechlade	221 009
Brighthampton	385 025
Hardwick	388 056
Hardwick	397 046

Appendix H: Conversion Table, Metres to Feet (to nearest 0.5 ft)

m	ft	m	ft	m	ft	m	ft	m	ft
0.1	0.5	6.1	20	12.1	39.5	18.1	59.5	24.1	79
0.2	0.5	6.2	20.5	12.2	40	18.2	59.5	24.2	79.5
0.3	1	6.3	20.5	12.3	40.5	18.3	60	24.3	79.5
0.4	1.5	6.4	21	12.4	40.5	18.4	60.5	24.4	80
0.5	1.5	6.5	21.5	12.5	41	18.5	60.5	24.5	80.5
0.6	2	6.6	21.5	12.6	41.5	18.6	61	24.6	80.5
0.7	2.5	6.7	22	12.7	41.5	18.7	61.5	24.7	81
0.8	2.5	6.8	22.5	12.8	42	18.8	61.5	24.8	81.5
0.9	3	6.9	22.5	12.9	42.5	18.9	62	24.9	81.5
1.0	3.5	7.0	23	13.0	42.5	19.0	62.5	25.0	82
1.1	3.5	7.1	23.5	13.1	43	19.1	62.5	25.1	82.5
1.2	4	7.2	23.5	13.2	43.5	19.2	63	25.2	82.5
1.3	4.5	7.3	24	13.3	43.5	19.3	63.5	25.3	83
1.4	4.5	7.4	24.5	13.4	44	19.4	63.5	25.4	83.5
1.5	5	7.5	24.5	13.5	44.5	19.5	64	25.5	83.5
1.6	5	7.6	25	13.6	44.5	19.6	64.5	25.6	84
1.7	5.5	7.7	25.5	13.7	45	19.7	64.5	25.7	84.5
1.8	6	7.8	25.5	13.8	45.5	19.8	65	25.8	84.5
1.9	6	7.9	26	13.9	45.5	19.9	65.5	25.9	85
2.0	6.5	8.0	26	14.0	46	20.0	65.5	26.0	85.5
2.1	7	8.1	26.5	14.1	46.5	20.1	66	26.1	85.5
2.2	7	8.2	27	14.2	46.5	20.2	66.5	26.2	86
2.3	7.5	8.3	27	14.3	47	20.3	66.5	26.3	86.5
2.4	8	8.4	27.5	14.4	47	20.4	67	26.4	86.5
2.5	8	8.5	28	14.5	47.5	20.5	67.5	26.5	87
2.6	8.5	8.6	28	14.6	48	20.6	67.5	26.6	87.5
2.7	9	8.7	28.5	14.7	48	20.7	68	26.7	87.5
2.8	9	8.8	29	14.8	48.5	20.8	68	26.8	88
2.9	9.5	8.9	29	14.9	49	20.9	68.5	26.9	88.5
3.0	10	9.0	29.5	15.0	49	21.0	69	27.0	88.5
3.1	10	9.1	30	15.1	49.5	21.1	69	27.1	89
3.2	10.5	9.2	30	15.2	50	21.2	69.5	27.2	89
3.3	11	9.3	30.5	15.3	50	21.3	70	27.3	89.5
3.4	11	9.4	31	15.4	50.5	21.4	70	27.4	90
3.5	11.5	9.5	31	15.5	51	21.5	70.5	27.5	90
3.6	12	9.6	31.5	15.6	51	21.6	71	27.6	90.5
3.7	12	9.7	32	15.7	51.5	21.7	71	27.7	91
3.8	12.5	9.8	32	15.8	52	21.8	71.5	27.8	91
3.9	13	9.9	32.5	15.9	52	21.9	72	27.9	91.5
4.0	13	10.0	33	16.0	52.5	22.0	72	28.0	92
4.1	13.5	10.1	33	16.1	53	22.1	72.5	28.1	92
4.2	14	10.2	33.5	16.2	53	22.2	73	28.2	92.5
4.3	14	10.3	34	16.3	53.5	22.3	73	28.3	93
4.4	14.5	10.4	34	16.4	54	22.4	73.5	28.4	93
4.5	15	10.5	34.5	16.5	54	22.5	74	28.5	93.5
4.6	15	10.6	35	16.6	54.5	22.6	74	28.6	94
4.7	15.5	10.7	35	16.7	55	22.7	74.5	28.7	94
4.8	15.5	10.8	35.5	16.8	55	22.8	75	28.8	94.5
4.9	16	10.9	36	16.9	55.5	22.9	75	28.9	95
5.0	16.5	11.0	36	17.0	56	23.0	75.5	29.0	95
5.1	17	11.1	36.5	17.1	56	23.1	76	29.1	95.5
5.2	17	11.2	36.5	17.2	56.5	23.2	76	29.2	96
5.3	17.5	11.3	37	17.3	57	23.3	76.5	29.3	96
5.4	17.5	11.4	37.5	17.4	57	23.4	77	29.4	96.5
5.5	18	11.5	37.5	17.5	57.5	23.5	77	29.5	97
5.6	18.5	11.6	38	17.6	57.5	23.6	77.5	29.6	97
5.7	18.5	11.7	38.5	17.7	58	23.7	78	29.7	97.5
5.8	19	11.8	38.5	17.8	58.5	23.8	78	29.8	98
5.9	19.5	11.9	39	17.9	58.5	23.9	78.5	29.9	98
6.0	19.5	12.0	39.5	18.0	59	24.0	78.5	30.0	98.5

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- No. 1 The sand and gravel resources of the country south-east of Norwich, Norfolk: Description of 1:25 000 resource sheet TG 20. By E. F. P. Nickless. Price £1.15. Report No. 71/20
- No. 2 The sand and gravel resources of the country around Witham, Essex: Description of 1:25 000 resource sheet TL 81. By H. J. E. Haggard. Price £1.20. Report No. 72/6
- No. 3 The sand and gravel resources of the area south and west of Woodbridge, Suffolk: Description of 1:25 000 resource sheet TM 24. By R. Allender and S. E. Hollyer. Price £1.70. Report No. 72/9
- No. 4 The sand and gravel resources of the country around Maldon, Essex: Description of 1:25 000 resource sheet TL 80. By J. D. Ambrose. Price £1.20. Report No. 73/1
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INSTITUTE OF GEOLOGICAL SCIENCES

MINERAL ASSESSMENT UNIT

THE SAND & GRAVEL RESOURCES OF THE COUNTRY BETWEEN LECHLADE & STANDLAKE

Scale 1:25 000 or about 2 1/2 Inches to 1 Mile

ORDNANCE SURVEY
SHEET SP 30 & PARTS OF SHEETS SP 20 SU 29 & SU 30
PROVISIONAL EDITION

This map should be read in conjunction with the accompanying Report which contains details of the assessment of resources.

23

EXPLANATION OF SYMBOLS AND ABBREVIATIONS

DRIFT	
—	Alluvium - sands, silts, peat and clay, with lenses of gravel A-12
△	1st Terrace (Northmoor) IT-1 (A-12, A-13, A-14)
△	2nd Terrace (Summertown-Radley) 2T-3 - gravels and sands of the Thames and its tributaries
△	3rd Terrace (Wolvercote) 3T-1
△	4th Terrace (Harborough) 4T-1
○	Sand and Gravel of Unknown Age SQ-1
○	Glacial Sand and Gravel GS-17
SOLID	
Cr	Corallian Beds - coralline limestones, sandstone, clay and rubble coral-rock
OxCl	Oxford Clay - grey or bluish grey clay
Kis	Kellaways Sand - bluish grey fine silty sand
Kic	Kellaways Clay - dark bluish grey clay, silty at the top
Cb	Corambrash - rubbly and flaggy limestones with marls and sands
Fmb	Forest Marble - clays with limestones and sands
Whl	White Limestone - cream or white massive coralline limestone

BOUNDARY LINES	
---	Geological boundary, Drift
---	Geological boundary, Solid
---	Line of fault (conjectural); crossmark indicates downthrow side
---	Broken line denotes uncertainty
---	Inferred boundary between categories of deposits recognized
---	Resource Block boundary
---	Worked-out Areas (sand and gravel) WO-5

BOREHOLE DATA	
SITE LOCATIONS	
○	Mineral Assessment Unit (M.A.U.) Boreholes
○	Other Boreholes
M.A.U. BOREHOLES	
○	Borehole Registration Number - eg 20 SW 11
○	Borehole Site - eg 78.9
○	Grading Diagram - eg 2.2
○	Geological Classification - eg (OxCl)
○	Thickness in metres

Notes

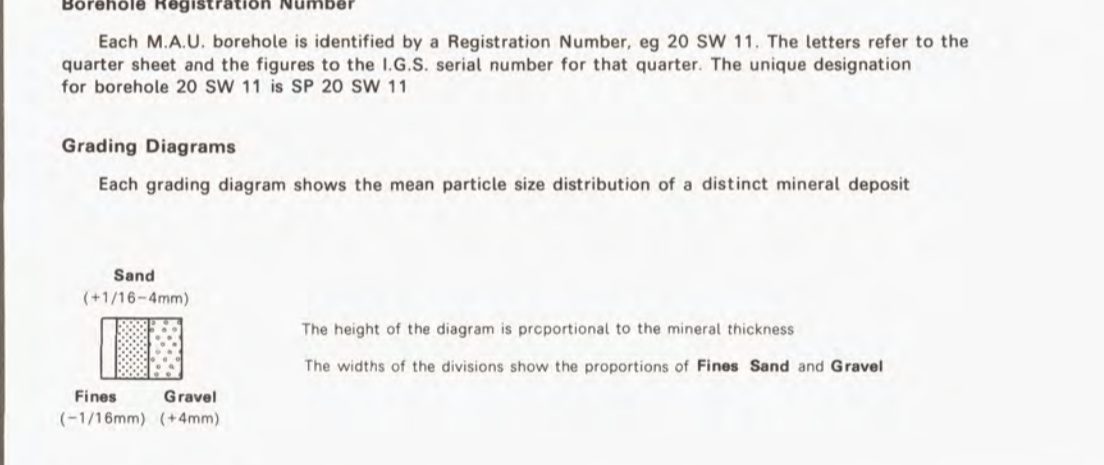
- Figures underlined denote thickness used in the assessment of resources
- The 'x' sign indicates that the base of the deposit was not reached
- The figures in *italics* are conversions to metres of measurements recorded in feet
- The Geological Classification is given only for mineral and bedrock

Borehole Registration Number

Each M.A.U. borehole is identified by a Registration Number, eg 20 SW 11. The letters refer to the quarter sheet and the figure to the 1/4 inch serial number for that quarter. The unique designator for borehole 20 SW 11 is SP 20 SW 11.

Grading Diagrams

Each grading diagram shows the mean particle size distribution of a distinct mineral deposit.



OTHER BOREHOLES

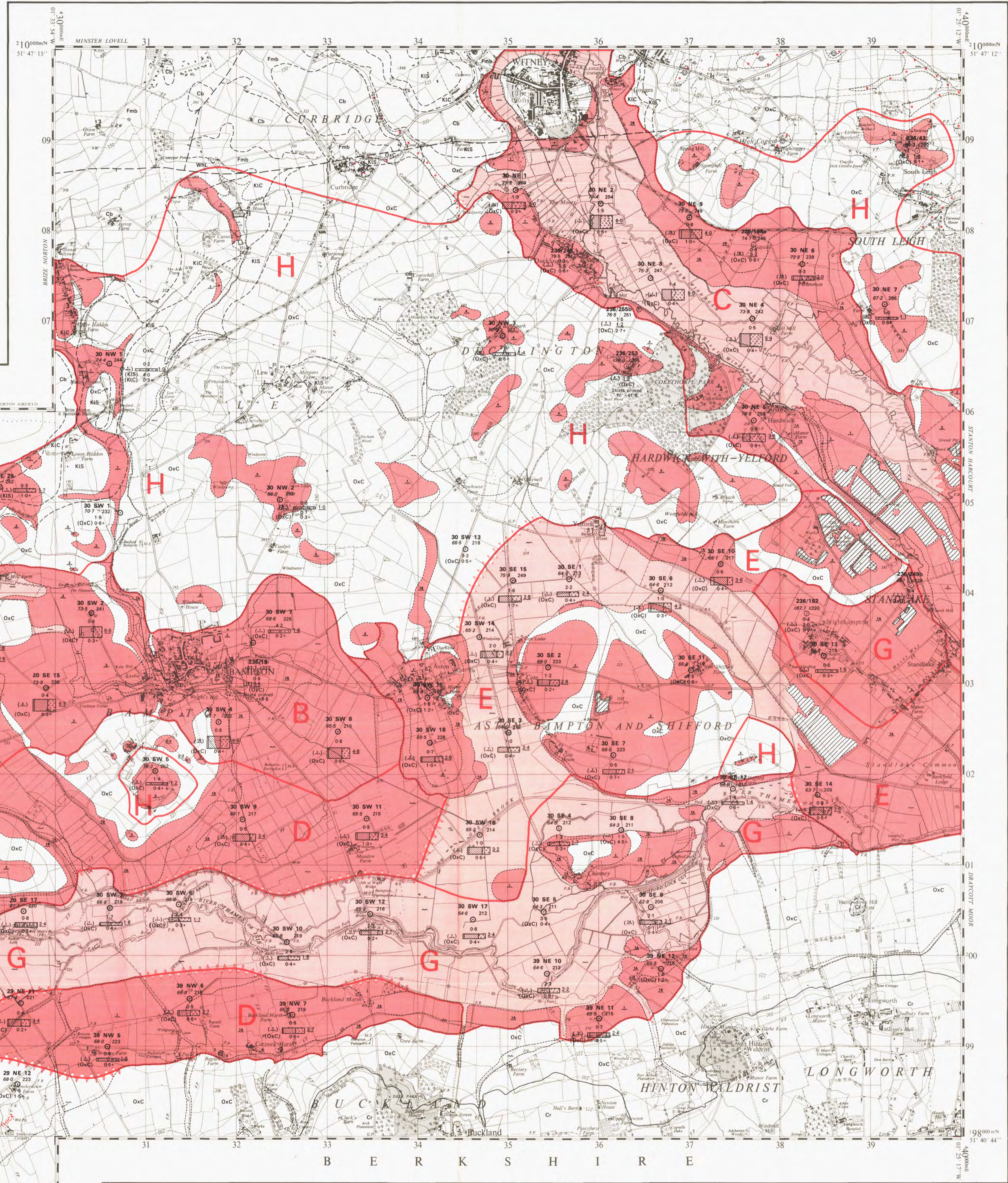
The layout of information is the same as for M.A.U. boreholes, although data available may not be as comprehensive. They are registered in the same series, except for records in the Hydrogeological Department. For example 236/182 signifies Hydrogeological Department borehole 182 on New Series One-inch Geological Sheet 236. The final depth of deep boreholes is given in metres above (+) or below (-) Ordnance Datum.

CATEGORIES OF DEPOSITS	
■	Exposed mineral (overburden generally less than 1m) CAT-E1
■	Continuous or almost continuous spreads of mineral beneath overburden (overburden generally greater than 1m) CAT-C3
○	Sand and gravel not assessed. CAT-N1
□	Sand and gravel either not potentially workable (see Report) or absent. CAT-A2

RESOURCE BLOCKS

For the purpose of assessment, the mineral-bearing land is divided into Resource Blocks (see Report). Each is designated by a letter.

Detailed records may be consulted on application to the Head, Mineral Assessment Unit, Institute of Geological Sciences, Exhibition Road, London SW7 2DE



Original geological survey on the area made by W. J. Austin, H. Searles, E. Hall and W. Whitaker in 1857, with revisions in 1859.

Six-inch surveys by A. J. John Brown and P. J. Bennett before 1900; by H. Blake and T. J. Pridell in 1904-6; by A. C. Oliver in 1911 and 1920; by D. Foster, P. E. Harding, A. W. Kemp, P. Tophill and E. G. Poole during 1961-75; G. A. Bellamy, Ed., Central Geological.

Sand and Gravel Survey by H. C. Spivell, J. Gray, P. Robson, G. J. Head and M. R. Clark in 1974 and 1976; H. G. Thorne, Head, Mineral Assessment Unit.

The CRID lines on this sheet are at 1 kilometre intervals. Heights are in feet above Mean Sea Level at Newlyn.

1 square centimetre on this map represents 1000 feet on the ground.

Compiled from 6" sheets last fully revised 1910-32. Other partial systematic revisions 1938-56 has been incorporated. Some 1" road revision 1947 and major road revision of 1971 has also been incorporated.

Data quoted for an individual borehole refer strictly to that site. Reliable correlations cannot be drawn about the thickness and grading elsewhere in the sheet. Particulars are material as recorded in sand and gravel survey. However, estimates of the volume and mean grading of the mineral in a whole in each Resource Block are given in the Report.

SP 11	SP 21	SP 31	SP 41
236	236	236	236
SP 10	SP 20	SP 30	SP 40
236	236	236	236
SP 19	SP 29	SP 39	SP 49
236	236	236	236

1:25 000 Sand and Gravel Resources Sheet published 1976. Author: W. Woodhead, C.B.E., Director, Institute of Geological Sciences, incorporating the Geological Survey of Great Britain, the Museum of Practical Geology and Overseas Geological Surveys.

Diagram showing the position of the Mineral Unit 1:25 000 sheets with One inch sheets 236, 237 and 238, and 1:50 000 Geological Sheet 232.

Made and printed for the Institute of Geological Sciences by the Director General of the Ordnance Survey, Southampton.