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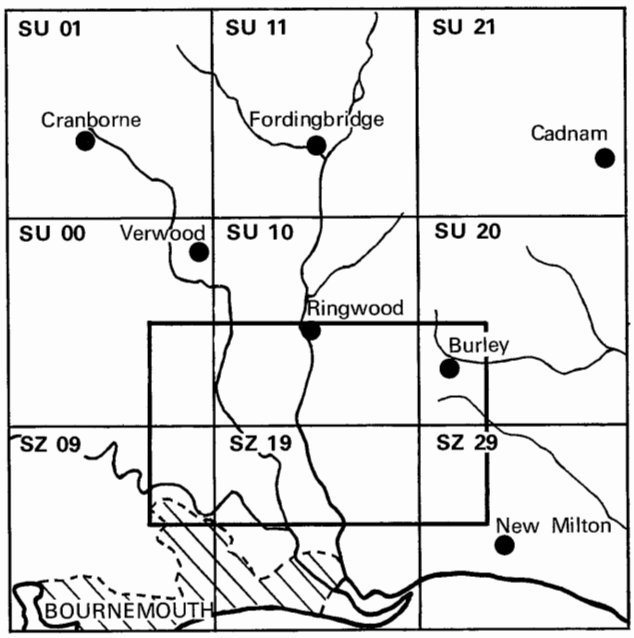

The sand and gravel resources of the country north of Bournemouth, Dorset

Description of parts of 1 : 25 000 sheets SU 00, 10, 20, SZ 09, 19 and 29

M. R. Clarke

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The first twelve reports on the assessment of British sand and gravel resources appeared in the Report series of the Institute of Geological Sciences as a subseries. Report 13 and subsequent reports appear as Mineral Assessment Reports of the Institute.

Details of published reports appear at the end of this Report.

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The asterisk on the cover indicates that parts of sheets adjacent to the one cited are described in this report.

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 (now the Industrial Minerals 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 160 km^2 of the country north of Bournemouth, Dorset, shown on the accompanying 1:25 000 resource map. The survey was conducted by M. R. Clarke, A. J. Dixon, M. Kubala and R. A. Sobey in 1976/77; M. P. Hawkins has assisted with the preparation of the report. The work is based on geological surveys at the 1:10 560 scale carried out by C. Reid (Sheet 329, published in 1895) and by F. J. Bennett, E. E. L. Dixon and C. Reid (Sheet 314, published in 1902). The differentiation of the terraces is based upon river profile studies and an additional survey by Mr Clarke in 1977/78.

Mr R. A. Kent and Mr J. E. Pollard (formerly land agents with the Ministry of Agriculture, Fisheries and Food), were commissioned to undertake negotiations for access to land for drilling. The ready cooperation of landowners, tenants and gravel operators, and the assistance of officials of Dorset County Council and Hampshire County Council are gratefully acknowledged.

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Plate 1 Cryoturbated sand and gravel, Holmsley Ridge

The River Terrace Deposits of the 9th terrace are exposed in a pit at Holmsley Ridge [215 010].

The upper part of the mineral deposits is highly contorted and records the effects of periglacial cryoturbation during Pleistocene times. The lower part of the sand and gravel is relatively undisturbed and retains its original bedding.

The sand and gravel resources of the country north of Bournemouth, Dorset

Description of parts of 1:25 000 sheets SU 00, 10, 20, SZ 09, 19, and 29

M. R. CLARKE

SUMMARY

The geological maps of the Institute of Geological Sciences, pre-existing borehole information and the results from 104 boreholes drilled for the Industrial Minerals Assessment Unit, form the basis of the assessment of sand and gravel resources in the area to the north of Bournemouth, Dorset.

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 their volume. The reliability of these estimates is given at the symmetrical 95 per cent confidence level.

The accompanying 1:25 000 map is divided into seven resource blocks containing from 7.7 km^2 to 18.9 km^2 of potentially workable sand and gravel. For each block, the geology of the deposit is described and the mineral-bearing area, the mean thicknesses of overburden and mineral, and the mean grading are given, together with the detailed borehole data. The position of the boreholes, the geological lines, and the outlines of the resource blocks are shown on the accompanying resource map, which covers parts of Ordnance Survey sheets SU 00, 10, 20, SZ 09, 19 and 29.

Bibliographic reference

CLARKE, M. R. 1981. The sand and gravel resources of the country north of Bournemouth, Dorset. Description of parts of 1:25 000 sheets SU 00, 10, 20, SZ 09, 19 and 29. *Miner. Assess. Rep. Inst. Geol. Sci.*, No. 51.

Note

All grid references quoted in this report fall within the 100-km grid squares SU and SZ.

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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 one metre 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. 240 mesh BS sieve, about $\frac{1}{16}$ mm) should not exceed 40 per cent.
d The deposit should 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.

A deposit of sand and gravel which broadly meets these criteria 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 $\frac{1}{16}$ mm, $\frac{1}{4}$ 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 $\frac{1}{16}$ 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 km^2 of sand and gravel. 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 survey area of 160 km^2 is centred upon the lower part of the Avon valley in the counties of Hampshire and Dorset, and extends from Ringwood in the north to Christchurch in the south (Figure 1). The lower-lying ground mainly forms broad fertile belts of flat terrace land, associated with the rivers Stour and Avon, and is overlooked from the east by the scenic moorland of the New Forest.

The major part (75 per cent) of the mineral resources are distributed as the lower (below 20 m AOD) terraces of the River Stour and the River Avon, which cover 64.5 km^2 of land. Additional resources (25 per cent) are found in the higher level deposits which cap 21.7 km^2 of ground, mainly to the east of the Avon valley.

The remaining 66.2 km^2 (41 per cent of the sheet area) are regarded as containing no potentially workable aggregate resources. However, much of this 'barren' ground is formed by Eocene (bedrock) sands which have in places been worked (see p. 17). Although the aggregate resources of these sands have not been assessed, an indication of their quality is given in the borehole records (see Appendix F and p. 9).

The urban areas, which include parts of Bournemouth, Christchurch and Ringwood, are built over 7.6 km^2; there are also many smaller communities throughout the district, such as those at Sopley, Bransgore and West Parley.

This report, together with that on the adjoining survey area (Kubala, 1980) completes the assessment of the sand and gravel resources of the Avon valley.

TOPOGRAPHY

The valley of the River Avon, which is aligned north–south, dominates the topography of the area, and together with the valley of the tributary River Stour in the south-west, forms a large tract of ground, much of which does not rise above +20 m Ordnance Datum (Figure 2).

Broad, flat terraces, in places over 3 km wide, flank the eastern side of the Avon valley, and abut against the lower slopes of the New Forest. These slopes form a significant scarp feature, which rises to a series of plateaux at heights ranging from about +50 m Ordnance Datum in the south to over +91 m Ordnance Datum in the north near Burley [210 030].

To the west of the River Avon, small areas of high ground are formed by remnant patches of high-level terrace deposits, such as those at St Ives [135 040] and St Catherine's Hill [145 955].

GEOLOGY

The classification of deposits proved in assessment boreholes is based upon the geological succession of mapped deposits shown in Table 1.

Structurally, the area lies at the western end of the Hampshire Basin, an asymmetric syncline whose form is defined to the north by the Tertiary strata laid down within it, and to the south by the Cretaceous rocks exposed in the monoclinal fold of the Isle of Wight. Although the Tertiary beds in the area of the resource sheet generally dip gently to the east, minor folds associated with the main fold axes (Curry, 1976) may give rise to local fluctuations in dip.

In the extreme west of the area, the lowest Eocene beds show marked variations in thickness and lithology, due to the proximity of the ancient shoreline which existed in this area at the time when these beds were deposited. Because the amount of information available about these strata is limited, only estimates of thicknesses are given in Table 1.

Table 1 Geological classification and sequence

DRIFT		Approximate thickness
Quaternary		
Recent and Pleistocene	Peat	0–0.7 m+
	Alluvium	0–2.0 m+
	Brickearth (proved in assessment boreholes)	0–2.3 m+
	River Terrace Deposits (1st to 10th terraces numbered sequentially)	0–10.0 m+
	Older River Gravels	0–3.7 m+
SOLID		
Tertiary		
Oligocene	Headon Beds	20 m+
Eocene	Barton Sand	30 m
	Barton Clay	30 m
	Bracklesham Beds / Bagshot Beds	200 m

Drift deposits comprise mainly the extensive spreads of River Terrace Deposits associated with the rivers Avon and Stour. Additionally, patches of silty sands and clays (Brickearth) have been proved at the surface in parts of the survey area (see p. 5).

Only a brief account of the nature of each deposit is given below; more detailed decriptions are available in the Geological Survey memoirs for Ringwood (Reid, 1902) and Bournemouth (Osborne White, 1917).

SOLID

Bagshot Beds: The Bagshot Beds, the oldest strata proved within the survey area, crop out to the west of the River Avon, where they comprise lignitic, silty, fine and medium quartz sands, interbedded with thin laminated dark brownish grey silty clays. Although these beds have been divided into two main facies, exposed in the natural

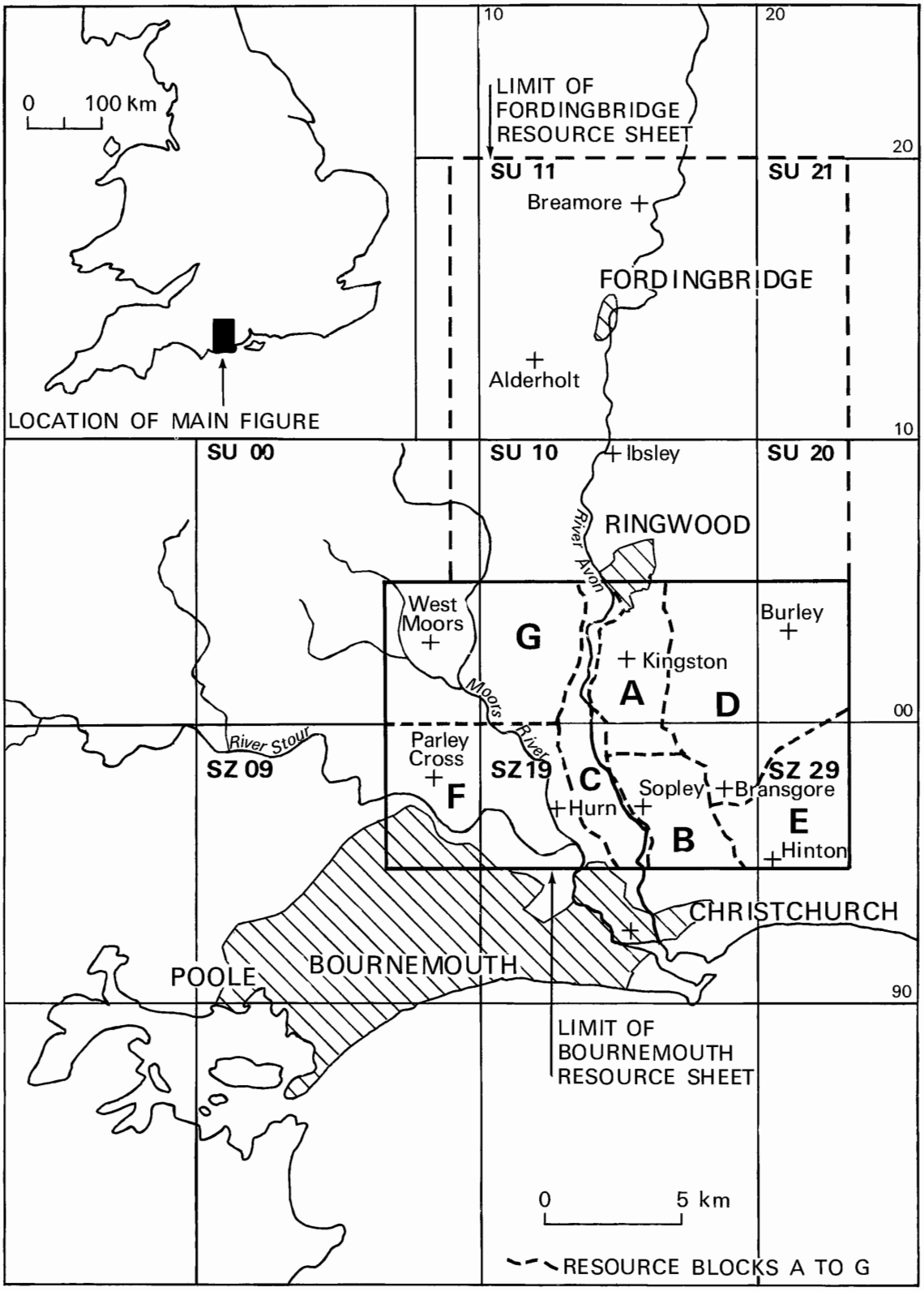


Figure 1 The location of the resource sheet and its relationship with the adjacent survey area (Fordingbridge)

section along the coast (Osborne White, 1917, pp. 19–27) no such subdivision has been possible in the borehole logs. In the 19 assessment boreholes, which proved sandy Bagshot Beds (as mapped), the mineral ranges from 'very clayey' sand to sand.

Bracklesham Beds: The Bagshot Beds are conformably overlain by the Bracklesham Beds, which form the bedrock over the central part of the sheet area. In the 42 boreholes which proved sandy beds, the lithologies found range from stiff, dark greyish brown, lignitic, laminated silty clays, to lignitic, fine and medium quartz sands. In most instances the sands are indistinguishable from those of the Bagshot Beds. Occasionally, thin pebble beds containing fine angular and subangular flint gravel, occur within these beds, as proved, for example, in borehole SU 10 SW 9, at a height of +5.3 m Ordnance Datum and in boreholes SZ 19 NE 8 and SZ 19 NE 14

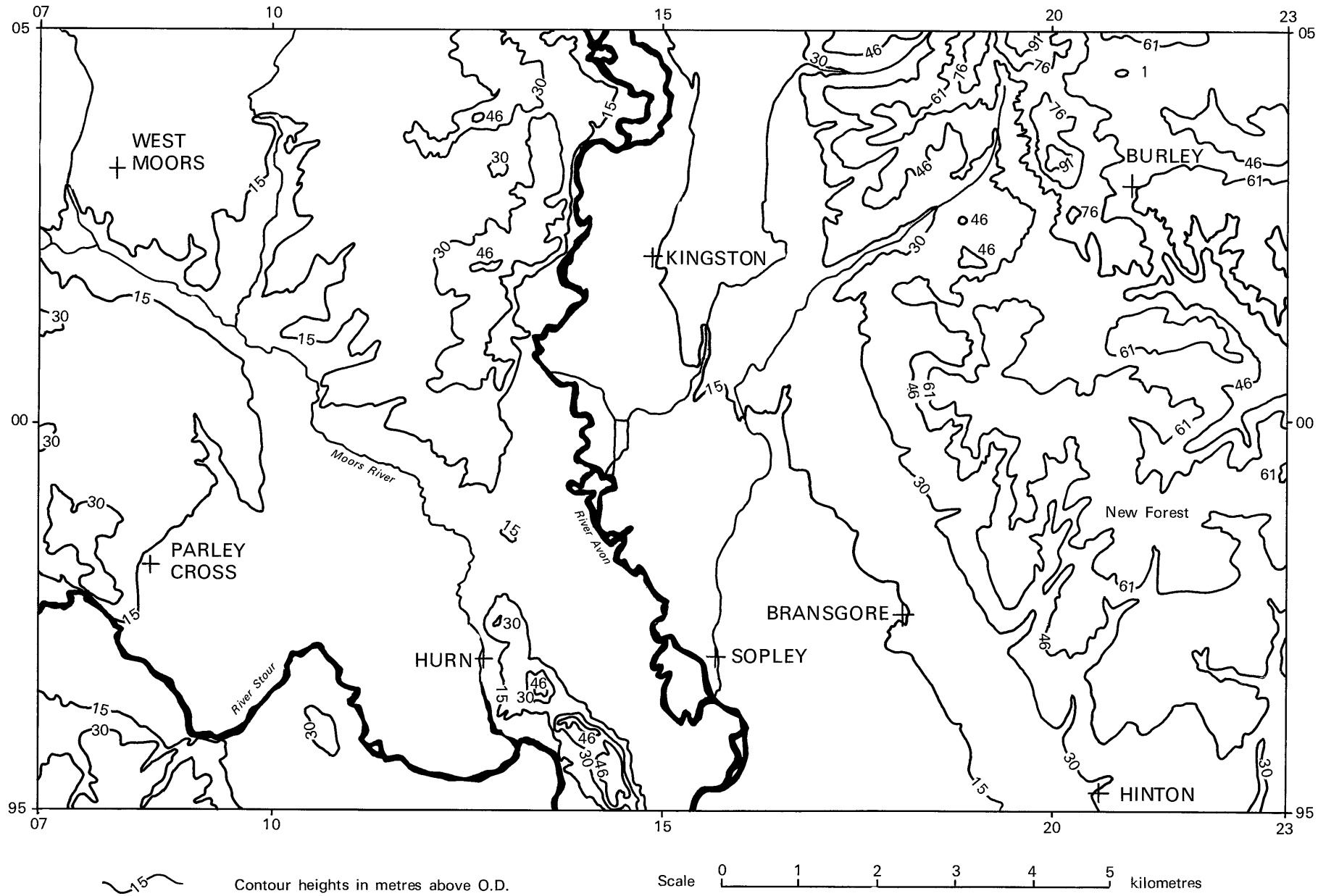


Figure 2 The topography of the resource sheet area

at +4.4 m Ordnance Datum. Recent work by staff of the South-western England Field Unit of the Institute of Geological Sciences, in the adjacent Southampton area (New Series geological sheet 315), suggests that the Bagshot and Bracklesham Beds may represent a series of interdigitating terrestrial, and deltaic facies, which are best classified as the Bournemouth Formation (E. C. Freshney and R. A. Edwards, personal communication; Curry and others, 1978). This view is supported by the results of the assessment boreholes.

Barton Clay: The Barton Clay crops out along a line corresponding approximately to the western edge of the New Forest. The beds, proved in 13 assessment boreholes, are predominantly dark greyish green and bluish grey silty clays (weathering yellow near the surface) with occasional thin sand partings. Towards their base, the beds comprise mottled dark green (glauconitic) and brown sandy clays (as proved, for example, in boreholes SZ 19 NE 17 and 18) which pass downwards into the lignitic sands of the Bracklesham Beds.

Barton Sand: Barton Sand, which underlies a large part of the boggy heathland of the New Forest, was proved in 12 assessment boreholes to consist of pale yellow or grey, silty, fine quartz sands: thin interbedded silty clay seams were recorded in some boreholes, for example, in borehole 20 SW 3.

Headon Beds: Fifteen assessment boreholes proved these beds to be typically firm, pale green and bluish grey clays, with thin and impersistent pale yellow fine sand partings, throughout the sequence. In places the clays are highly fossiliferous and are packed with shells of the lamellibranch *Corbicula obovata* and other brackish-water fauna.

DRIFT

River Terrace Deposits and Older River Gravels: Previous workers (for example, Green, 1946; Sealy, 1955) have demonstrated that the extensive sand and gravel deposits in this area represent degraded and dissected ancient river terraces of the River Avon. Detailed profile studies, using the new data available from the assessment boreholes, confirm this view and have enabled a reclassification to be made of all the Drift deposits including the high-level spreads previously shown as Plateau Gravel on the One-Inch New Series Geological Survey maps (sheets 314 and 329) (Figures 3 and 4). Small remnant patches of ancient fluvial (or fluvioglacial) sand and gravel that lie above +80 m Ordnance Datum are classified as Older River Gravels; similar but more extensive deposits occur in the adjacent survey (Fordingbridge) area.

The terraces proved in this area fall into two main groups: those which lie at heights of over +20 m Ordnance Datum (5th to 10th terraces) and those below this height (1st to 4th terraces). The latter form the main spreads of terrace deposits enclosed by the present form of the Avon valley (Figure 3). The 1st and 2nd terraces range in recorded thickness from 2.0 m to 10.0 m (Table 2) and appear to be confined to fairly narrow channels associated with, and lying close to, the present-day course of the rivers Avon and Stour. By contrast, the 3rd and 4th terraces, which range in recorded thickness from 1.0 m to 7.8 m, form the extensive terrace flats seen to the east of the River Avon, and to the north and south of the River Stour at Hurn [110 980] and Muscliff [100 955].

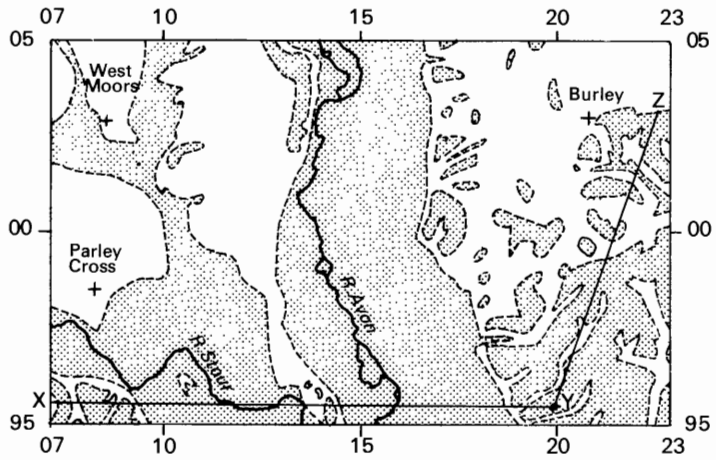
The high terraces (5th to 10th) have proven thicknesses ranging from 0.4 to 5.0 m and form the succession of dissected plateau features which characterise the scenery of the New Forest. Between Hinton [209 955] and Burley [212 030] the 7th to 9th terraces (which continue eastwards beyond the survey area) have a distinct E–W alignment, suggesting that their deposition may be related to the earlier drainage system of the ancient Solent River (Reid, 1902, pp. 29–32). The deposition of the 5th terrace, however, (which forms, for instance, Burton Common [195 953]) seems to have followed a NNW–SSE trend more akin to that of the lower terraces.

The few sections in these high-level deposits expose well-bedded gravels with occasional thin interbedded sand units. The upper parts of these gravels are usually strongly leached, and are often contorted by periglacial involutions (Plate 1).

Brickearth: Although they have not been mapped within the survey area, thick deposits of Brickearth are known to 'blanket' large areas of ground in the adjacent (Lymington) district (Osborne White, 1915, p. 53), and can be seen in section along the cliff-face at Barton [230 930] just outside the survey area, to the south-east. Many of the assessment boreholes proved light brown, yellow or grey clayey and silty fine sands, often with scattered, patinated fine subangular flint at the surface. These deposits, which range in thickness from 0.4 m to 2.3 m, have been proved at heights ranging from +4.5 m Ordnance Datum on the 2nd terrace (in borehole SZ 19 NW 11) to +72.2 m Ordnance Datum on the 10th terrace (in borehole SU 10 SE 14). They may well be loessic deposits and have been classified as Brickearth in the borehole logs. In places they have been locally redeposited.

Alluvium: Mottled dark grey and orange silts, silty clays and clayey sands typify the deposits of alluvium which occur in the floodplain areas of the Avon, Stour and Moors rivers. The deposits, which range from 0.4 m in borehole SZ 19 NW 5 to 2.0 m proved in borehole SZ 09 NE 1, overlie extensive terrace sands and gravels. In the small tributary streams, and parts of the Moors River, the Alluvium rests directly on bedrock as shown, for example, in boreholes SU 00 SE 1 and SU 00 SE 3.

Peat: Deposits of peat are mapped in some of the smaller valleys and are thought to overlie thin spreads of silty and clayey alluvium. For example, borehole SU 00 SE 7 proved 0.7 m of peat overlying the 2.0 m of mapped alluvium in the Moors River.



Scale: 0 1 2 3 km

Location map showing line of section in relation to resource sheet area and Drift deposits (stippled)

KEY

SYMBOLS

Peat

Alluvium

1 - 9 River Terrace Deposits (numbered sequentially).

19 NW 4 Position of IMAU borehole projected on to line of section.

GEOLOGICAL BOUNDARIES

Drift

Solid

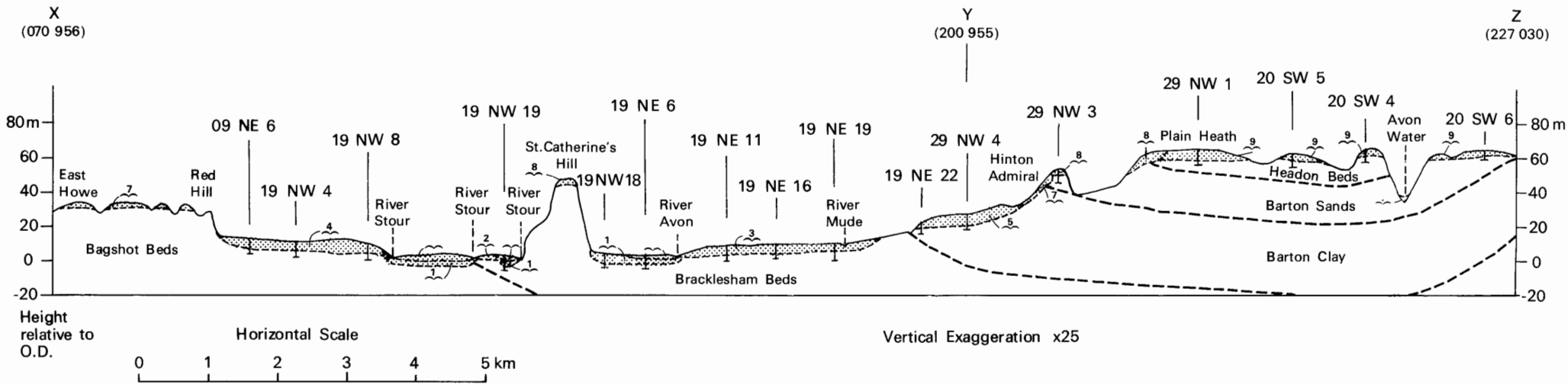


Figure 3 Geological cross-section of the Bournemouth sheet

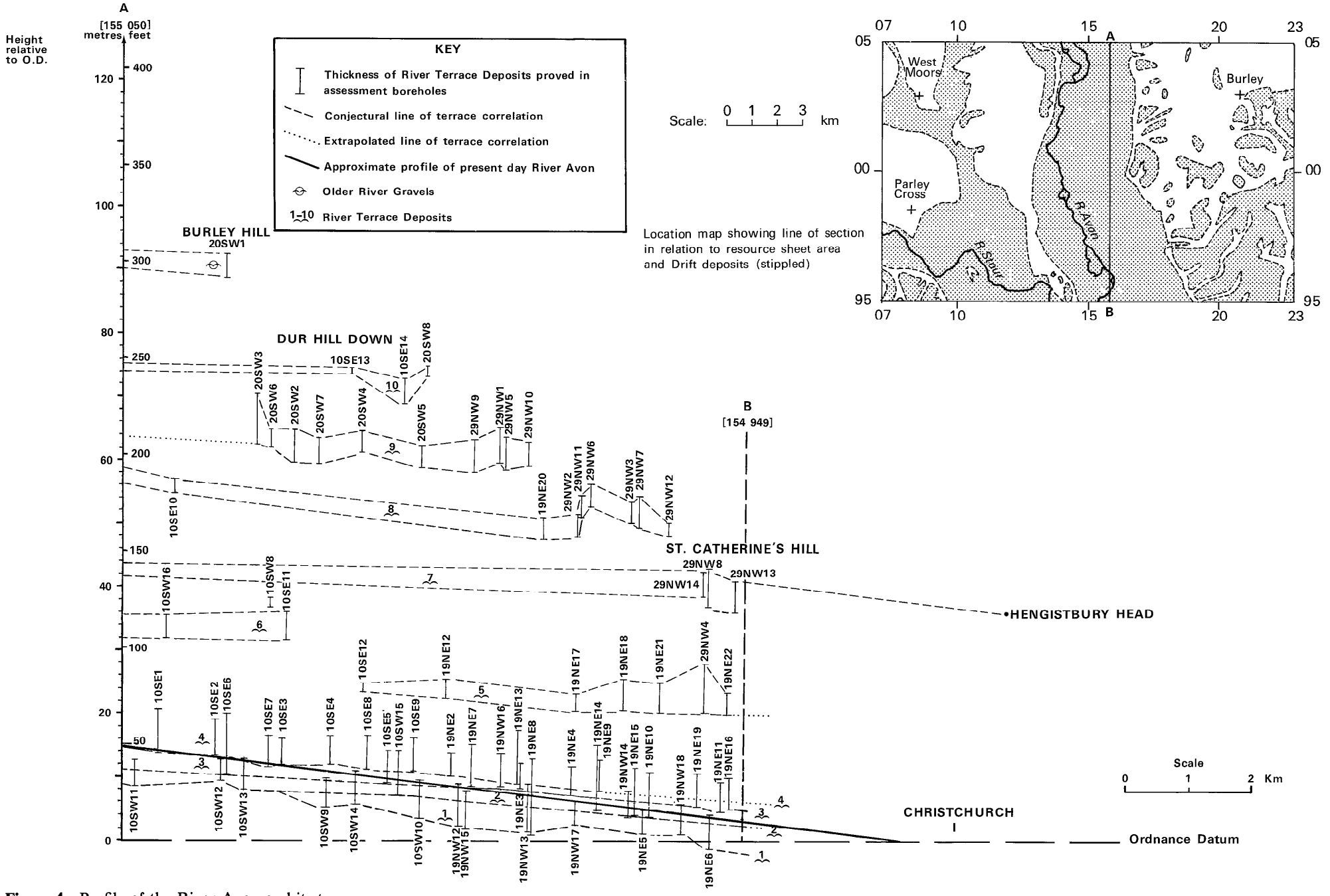


Figure 4 Profile of the River Avon and its terraces

Table 2 Thickness and mean grading of the sand and gravel proved in the survey area

AVON TERRACES	Data points	Thickness		*percentages*					
	(n)	Range	Mean	Fines $-\frac{1}{16}$ mm	Fine sand $+\frac{1}{16}-\frac{1}{4}$ mm	Medium sand $+\frac{1}{4}-1$ mm	Coarse sand +1–4 mm	Fine gravel +4–16 mm	Coarse gravel +16 mm
1	13	2.0–6.7	4.5	5	8	19	8	30	30
2	12	2.2–10.0	5.0	6	10	15	8	30	31
3	13	2.9–7.8	4.5	9	6	18	9	32	26
4	22	1.0–6.8	3.2	7	8	20	9	30	26
5	10	0.4–4.6	2.9	10	7	19	9	30	25
6	3	0.5–4.9	3.0	11	16	18	8	31	16
7	4	1.2–4.7	3.2	11	4	17	14	32	22
8	8	1.1–4.0	2.7	12	5	22	12	28	21
9	10	2.6–5.0	4.1	17	7	28	11	24	13
10	3	0.6–2.0	1.7	25	7	15	10	28	15
Older River Gravels	1	—	2.7	15	8	19	11	33	14
BEDROCK SANDS (mineral only)									
Headon Beds	4	—	—	12	85	2	1	0	0
Barton Sand	6	—	—	21	76	1	1	1	0
Bracklesham Beds	40	—	—	12	43	42	1	1	1
Bagshot Beds	19	—	—	12	36	48	2	1	1

Table 3 Specific Gravity, Absorption and 10% Fines values of selected bulk samples

Sample number	Borehole number	SG (Oven dried)	ASG	SG (Surface dried)	Absorption %	10% Fines value number K_n
WAV518–522	SZ 19 NW 1	2.34	2.61	2.44	4.5	310
WAV622–625	SU 20 SW 7	2.29	2.59	2.40	5.3	280
WAV1089–1092	SU 10 SW 9	2.37	2.57	2.45	3.3	285

COMPOSITION OF THE SAND AND GRAVEL

The resources of mineral are found in the spreads of River Terrace Deposits of the Rivers Avon and Stour, and the small patches of Older River Gravels.

The Specific Gravity, Absorption and 10 per cent Fines values of selected samples (thought to be representative of the deposits within the area) are given in Table 3.

No attempt has been made to assess the bedrock sands, but they have been investigated to a shallow depth in the assessment boreholes (Appendix F). The mean grading of mineral proved in each formation is shown in Figure 5 and a descriptive classification of bedrock formations by grain-size proved in IMAU boreholes is shown in Figure 6.

The grading characteristics of the Drift deposits are shown in Figure 7; Table 4 shows the mean composition based upon pebble-count studies of the +4–16 mm material from selected boreholes.

Eocene Beds

The similarity of the Bagshot and Bracklesham Beds is confirmed by the particle-size distributions (Figure 5), which have been calculated using data from 59 boreholes. Both formations are classified as 'clayey' sands; the Bagshot Beds have a mean grading of fines 12 per cent, fine sand 36 per cent, medium sand 48 per cent, coarse sand 2 per cent and gravel 2 per cent, whereas the Bracklesham Beds have a mean grading of fines 12 per cent, fine sand 43 per cent, medium sand 42 per cent, coarse sand 1 per cent and gravel 2 per cent. The small amounts of gravel demonstrated by these mean grading figures reflect locally developed pebble beds proved in some boreholes (see p. 3).

In general, the Bagshot and Bracklesham Beds form thick quartz-rich sand units, with mean gradings approximating to British Standard zones 1 to 4 for fine aggregates (BS 882, 1975). However, the sands are frequently interbedded with lignitic silty clays and are often themselves lignitic. Towards the west, the clay beds appear to be less numerous, and relatively 'clean' Bagshot and Bracklesham Beds are worked to depths of up to 18 m near Canford Heath [030 950] just outside the survey area.

Six boreholes in the Barton Sand proved mineral. These beds, classified as 'very clayey' sand, generally comprise silty fine quartz sand, and have a mean grading of fines 21 per cent, fine sand 76 per cent, medium sand 1 per cent, coarse sand 1 per cent and gravel 1 per cent. They are too fine-grained to be suitable as a source of fine aggregate, but they may have specialist uses as moulding or foundry sands.

River Terrace Deposits and Older River Gravels

Despite their considerable variation in height (from −5 m Ordnance Datum to over +80 m Ordnance Datum) the River Terrace Deposits and Older River Gravels show remarkably uniform grain-size distribution (Table 2) and composition (Table 4).

The gravels are made up of roughly equal amounts of fine and coarse, subangular to subrounded flint, which accounts for about 80 per cent of the total gravel fraction. Well-rounded flint (derived from the Lower Tertiary Beds) is generally present, and in the west of the area it forms an important constituent, accounting for example, for 30 per cent of the +4 −16 mm fraction (fine gravel) in borehole SU 00 SE 6. Subrounded to well-rounded cherty sandstone forms 1 to 5 per cent of the fine gravel fraction, and is accompanied by traces of vein-quartz, ironstone, Purbeck limestone and jasperine flint.

The mean gravel content in the terrace deposits ranges from 37 per cent in the 9th terrace to 61 per cent in the 2nd terrace, with no apparent trend in its variation. The lower (1st to 4th) terraces have smaller recorded fines contents, but this is partly because these deposits were sampled mainly from below the water table, and were thus 'washed' during the drilling and sampling procedure.

The sand fractions ($+\frac{1}{16}$ mm –4 mm) are composed principally of subangular to subrounded quartz with angular to subangular flint in the coarser grades. Some

Table 4 Composition of the Drift deposits based upon pebble count studies of the +4–16 mm material from randomly selected boreholes

Borehole number	Subangular flint %	Well-rounded flint %	Vein-quartz %	Sandstone %	Others– (ironstone, limestone, etc.) %
SU 00 SE 6	70	30	trace	trace	–
SU 10 SW 9	86	9	trace	5	trace
SU 10 SW 15	85	13	trace	2	trace
SU 10 SW 16	84	14	1	1	trace
SU 20 SW 1	75	20	1	4	–
SU 10 SE 4	84	14	trace	2	trace
SU 10 SE 14	78	20	1	1	trace
SZ 09 NE 6	86	10	trace	4	–
SZ 19 NW 3	83	13	1	3	–
SZ 19 NW 5	75	21	2	2	trace
SZ 19 NW 11	86	10	trace	4	1
SZ 19 NE 11	82	15	1	2	trace
SZ 19 NE 22	86	12	1	1	–
SZ 29 NW 5	72	16	9	3	–
SZ 29 NW 13	81	12	5	2	–

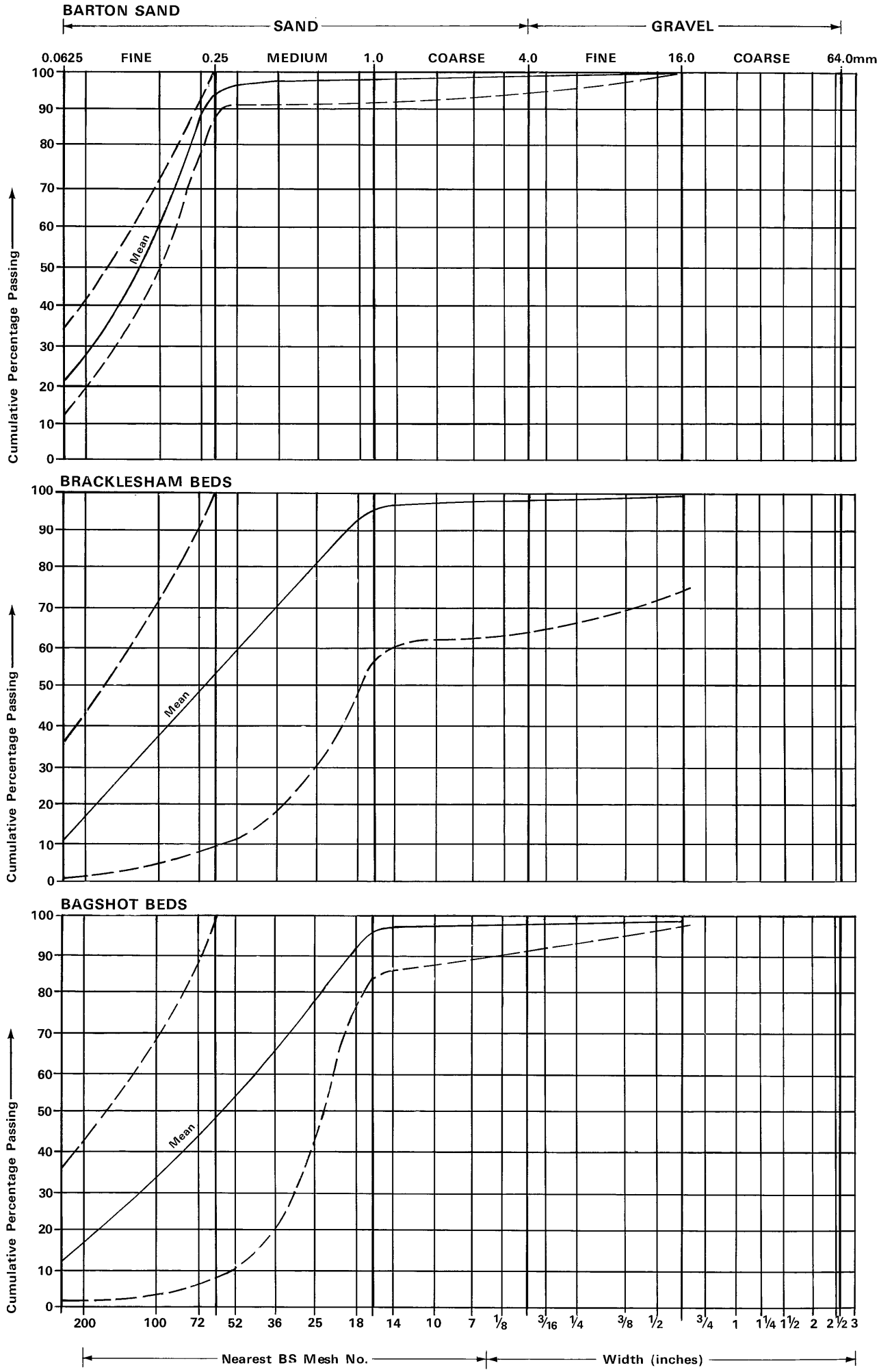


Figure 5 The range and mean grading of mineral proved in the Eocene sands

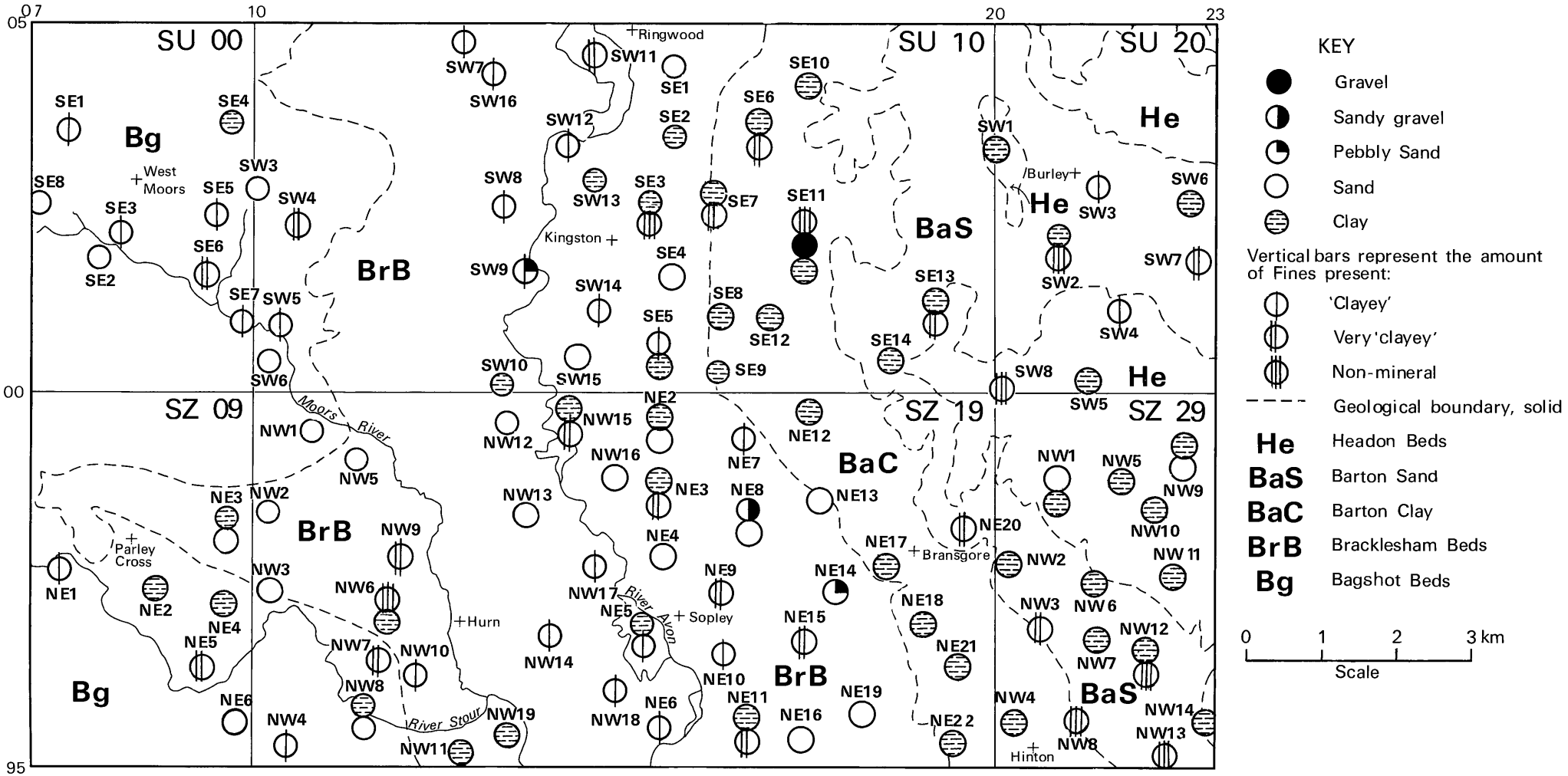


Figure 6 Classification by mean grain size of the bedrock formations proved in assessment boreholes

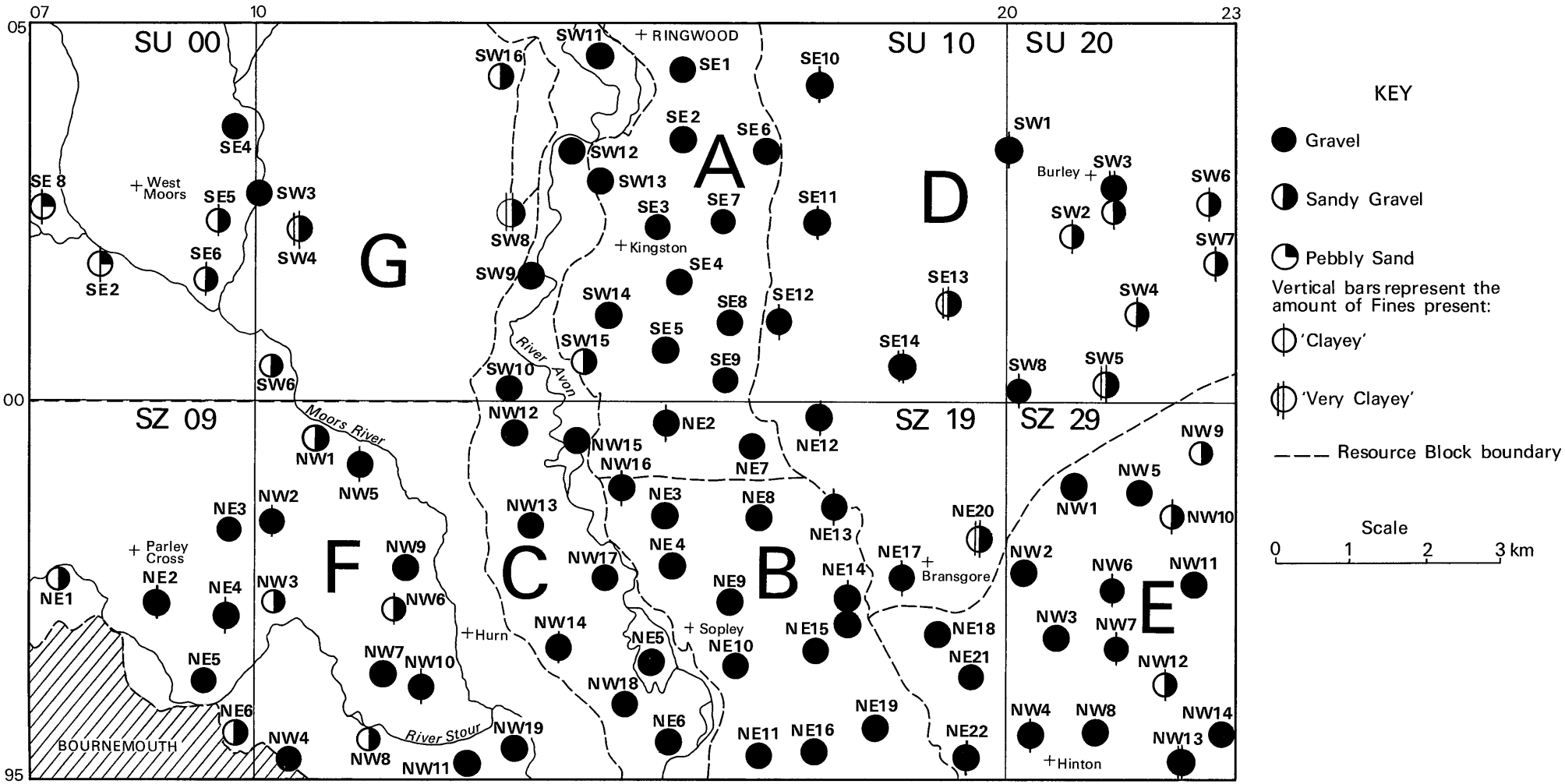


Figure 7 The grading characteristics of the Drift deposits based upon the mean grading at assessment boreholes

Table 5 Statistical assessment of the sand and gravel resources

Resource block	Area		Mean thickness		Volume of sand and gravel			Mean grading percentages		
	Block km^2	Mineral km^2	Overburden m	Mineral m	Million m^3	Limits at the 95 per cent confidence level		Fines	Sand	Gravel
						±%	±million m^3	$-\frac{1}{16}$ mm	$+\frac{1}{16}-4$ mm	+4 mm
A(14)*	13.2	13.1	1.5	4.4	58	20	12	5	30	65
B(12)	11.8	11.8	0.9	5.4	64	24	15	7	30	63
C(12)	13.0	13.0	0.9	4.1	53	23	12	6	36	58
D(16)	38.6	8.8	0.4	3.0	26	29	8	17	43	40
E(18)	16.7	12.9	0.8	3.8	49	17	8	10	36	54
F(18)	28.5	18.9	0.9	3.7	70	20	14	8	40	52
G(15)	30.6	7.7	0.7	1.0	8	54	4	13	53	34
	1.7 West Moors 0.9 St Ives 4.2 Bournemouth 0.5 Ringwood 0.3 Christchurch		Urban areas not assessed							
Sheet total (105)	160	86.2	0.9	3.8	328	10	33	9	36	55

* Figures in brackets show the total number of sample points used in the assessment of resources; a sample point may represent a group of borehole data with a collective weighting of 1.

incorporation of lignitic, fine and medium quartz sand occurs at the base of the terrace deposits where they overlie bedrock sands. Medium sand is the predominant sand grade in all of the terraces, and ranges from 15 per cent to 28 per cent of the total sample weight.

The results of a pilot study of pebble counting on samples from the survey area, show that there is no significant difference between individual bulk samples, and that they may therefore be bulked together for the purposes of compositional analysis and physical testing of the aggregate.

THE MAP

The sand and gravel resource map is folded into the pocket at the end of the 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 shown are taken from the geological maps covering this area, which were surveyed at the scale of 1:10 560 by C. Reid, (One-inch geological Sheet 329, published in 1895) and by F. J. Bennett, E. E. L. Dixon and C. Reid (Sheet 314, published in 1902).

The new data available from assessment boreholes has enabled a re-classification of the Drift deposits to be made (see p. 5). The high-level gravels (+20 to +80 m Ordnance Datum), formerly called Plateau Gravels, have been assigned to the various terrace levels of the River Avon. Small patches of Older River Gravels are recognised above +80 m Ordnance Datum.

Borehole data, which include the stratigraphical relationships and mean particle-size distribution of sand and gravel and bedrock sand samples collected during the assessment survey, are also shown.

The geological boundaries are regarded as the best interpretation of the information available at the time of survey. However, because of the difficulty in mapping Drift deposits where thick solifluction material occurs, it is inevitable that local irregularities or discrepancies will be revealed by the boreholes. These are taken into account in the assessment of resources (see below and Appendix B).

Mineral resource information: For assessment purposes, the map is divided into areas where mineral is present, and areas where sand and gravel is either absent or not potentially workable.

The mineral-bearing ground is subdivided into resource blocks (see Appendix A) within which the mineral is 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 of soil and subsoil) has a mean thickness of less than 1 m. Beneath overburden the mineral may be continuous, almost continuous or discontinuous. The recognition of these categories is dependent upon the importance attached to the proportion of boreholes which did not find potentially workable sand and gravel. The mineral is described as

'almost continuous' if it is present in 75 per cent or more of the boreholes in a resource block.

Areas where bedrock crops out and where the available evidence suggests that sand and gravel is not potentially workable or is absent, 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 (for example within urban areas) are indicated by a red stipple.

The area of mineral is measured from the mapped geological or inferred 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. A distinctive (zig-zag) symbol is used for the inferred boundaries, which are drawn primarily for the purpose of volume estimation. The symbol is intended to convey an approximate location within a likely zone of occurrence rather than to represent the breadth of the zone. For the purpose of measuring areas the centre-line of the symbol is used.

RESULTS

A simple statistical procedure (explained in Appendix B) has been used to calculate the resources in the seven resource blocks A to G; the results are shown in Table 5.

Although bedrock sands have been proved by some of the assessment boreholes, no attempt has been made to assess their resources. The borehole information is given as a guide to the variations in lithology (Appendix F).

Particle-size distributions for the assessed thicknesses of mineral in blocks A to G are shown in Figure 8.

Accuracy of results: For each of the seven blocks, the accuracy of the results at the two-sided 95 per cent confidence level (that is, the probability that nineteen times out of twenty, a true volume of mineral present lies within the stated limits) varies between 17 per cent and 54 per cent. However, the true volumes are more likely to be nearer the figures estimated than either of the limits. Moreover, it is probable that roughly the same percentage limit would apply for the statistical estimate of mineral volume within a very much smaller parcel of ground (say 200 hectares) 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 quotation of reserves, data from more sample points will be required, even if the area is quite small. This point can be illustrated by considering the whole of the potentially workable sand and gravel on the resource sheet. The total volume (328 million m^3) can be estimated to limits of ±10 per cent at the 95 per cent confidence level by calculation based on the data from the 105 sample points spread across the seven resource blocks. However, it must be emphasised that the quoted volume of mineral has no simple relationship with the amount that could be extracted in practice, because, apart from the exclusion of the urban areas, no allowance has been made in the calculations for any restraints (such as existing buildings and roads) on the use of the land for mineral working.

NOTES ON RESOURCE BLOCKS

Block A

Sand and gravel of the 2nd, 3rd and 4th terraces of the River Avon covers almost all of the block (13.2 km^2), apart from a small area (0.1 km^2) of worked-out ground [165 045] near Moortown.

Overburden comprises fertile silts and pebbly clays classified as soil and Brickearth in the borehole logs. Although it is generally about 1 m thick, the overburden ranges from 0.2 m thick in borehole SU 10 SW 13 to the 3.2 m proved in borehole SU 10 SE 6. This exceptional thickness may represent an accumulation of hillwash or Brickearth (which conceals the underlying mineral deposits) at the base of the scarp slope which bounds the New Forest.

Mineral ranges in thickness from 2.1 m in borehole SZ 19 NE 2 to 6.6 m in borehole SZ 19 NE 7, and has a mean of 4.4 m. Only borehole SZ 19 NE 2 proved deposits with more than 10 per cent fines (but see p. 9) that is, 'clayey' gravel; the mineral in the block as a whole is classified as gravel with a mean grading of fines 5 per cent, sand 30 per cent and gravel 65 per cent.

The estimated volume of mineral, using data from 14 assessment boreholes, is 58 million m^3 ±20 per cent (±12 million m^3) at the 95 per cent confidence level.

Block B

This block is to the south of block A, and contains similar sand and gravel deposits mainly of the 2nd terrace (hidden beneath Alluvium) and 3rd terrace, which cover the whole area of the block (11.8 km^2).

Silts and pebbly clays again make up the overburden, which has a mean thickness of 0.9 m but ranges from 0.5 m in boreholes SZ 19 NE 14 and SZ 19 NE 16 to the abnormally high value of 2.1 m proved in borehole SZ 19 NE 11.

The sand and gravel deposits (which tend to be thicker towards the eastern part of the block) range in thickness from 2.9 m in borehole SZ 19 NE 11 to 8.4 m in borehole SZ 19 NE 14, and have a mean of 5.4 m. All the boreholes show deposits of similar composition – three boreholes (SZ 19 NE 13, 14 and SZ 19 NW 16) proving 'clayey' gravel, and the remaining boreholes proving gravel. The mean grading for the block is fines 7 per cent, sand 30 per cent and gravel 63 per cent.

The volume of mineral, calculated with data from 12 assessment boreholes, is 64 million m^3 ±24 per cent (±15 million m^3).

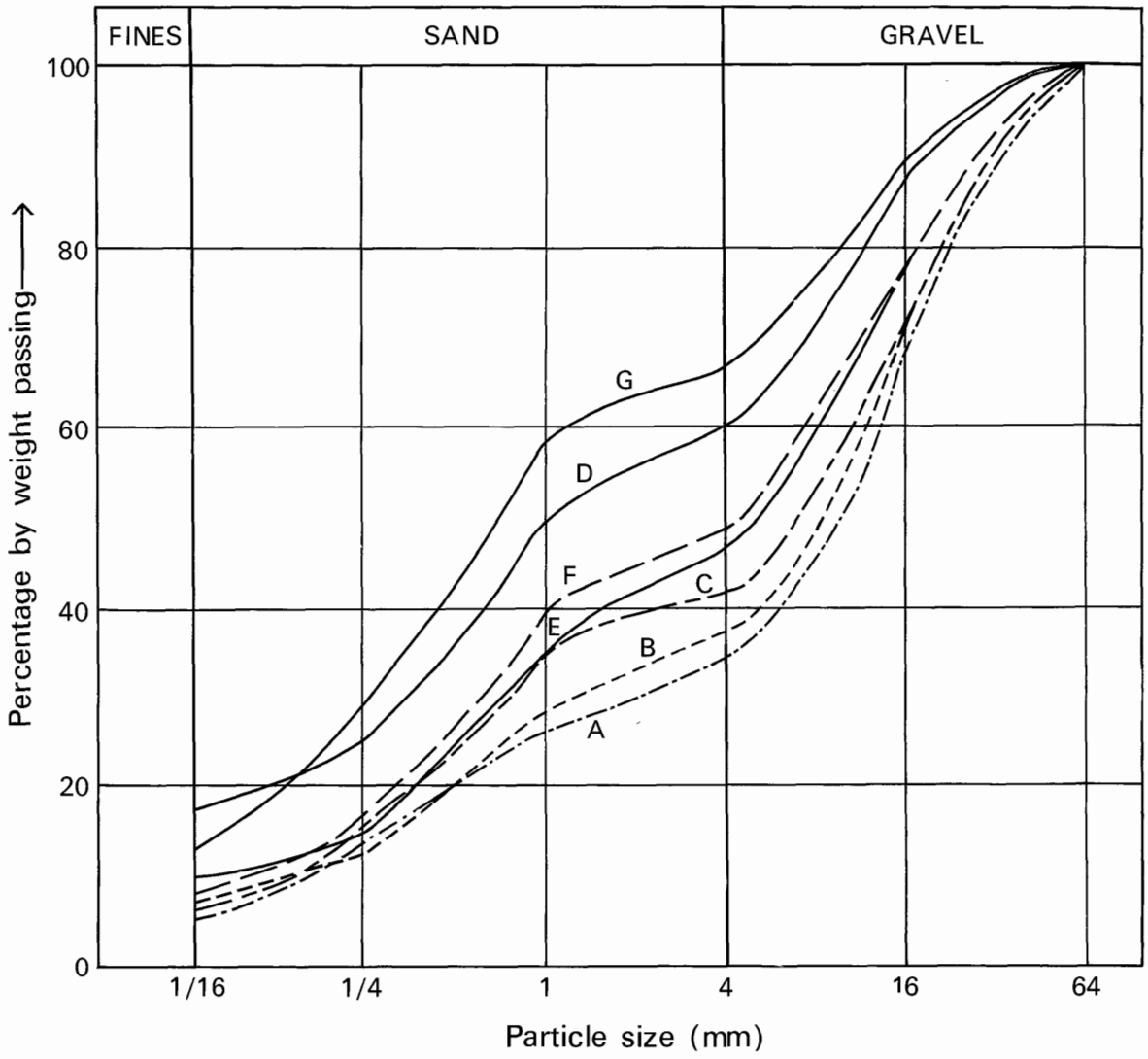
Block C

The 13.0 km^2 of this block are covered with the sand and gravel deposits of the 1st and 2nd terraces associated with, or lying close to, the present-day River Avon and its floodplain.

Overburden within the floodplain is characteristically sticky, silty and pebbly clay, but elsewhere in the block it is more sandy. Thicknesses proved range from 0.1 m in borehole SZ 19 NW 13 to 1.8 m in borehole SU 10 SW 11; and the mean is 0.9 m.

Except in one borehole (SZ 19 NW 14) which proved a fines content of 10 per cent, the mineral is classified as gravel throughout the block. The thickest mineral deposits occur in the area of the 1st terrace near Week Common [135 998], where four boreholes (SU 10 SW 10, SZ 19 NW 12, 13 and 15) each proved over 5.0 m of sand and gravel. However, the mineral for the block ranges in thickness from 2.7 m in borehole SU 10 SW 11 to the 6.5 m in borehole SZ 19 NW 13, and has a mean of 4.1 m.

Using data from 12 assessment boreholes, and confidential commercial data, the volume of mineral is



Resource Block	Cumulative percentage by weight passing					
	1/16 mm	1/4 mm	1mm	4mm	16mm	64mm
A	5	13	26	35	67	100
B	7	12	28	37	71	100
C	6	15	35	42	71	100
D	17	25	49	60	87	100
E	10	14	35	46	76	100
F	8	16	39	48	76	100
G	13	29	58	66	89	100

Figure 8 Mean particle-size distribution for the assessed thicknesses of sand and gravel in resource blocks A to G

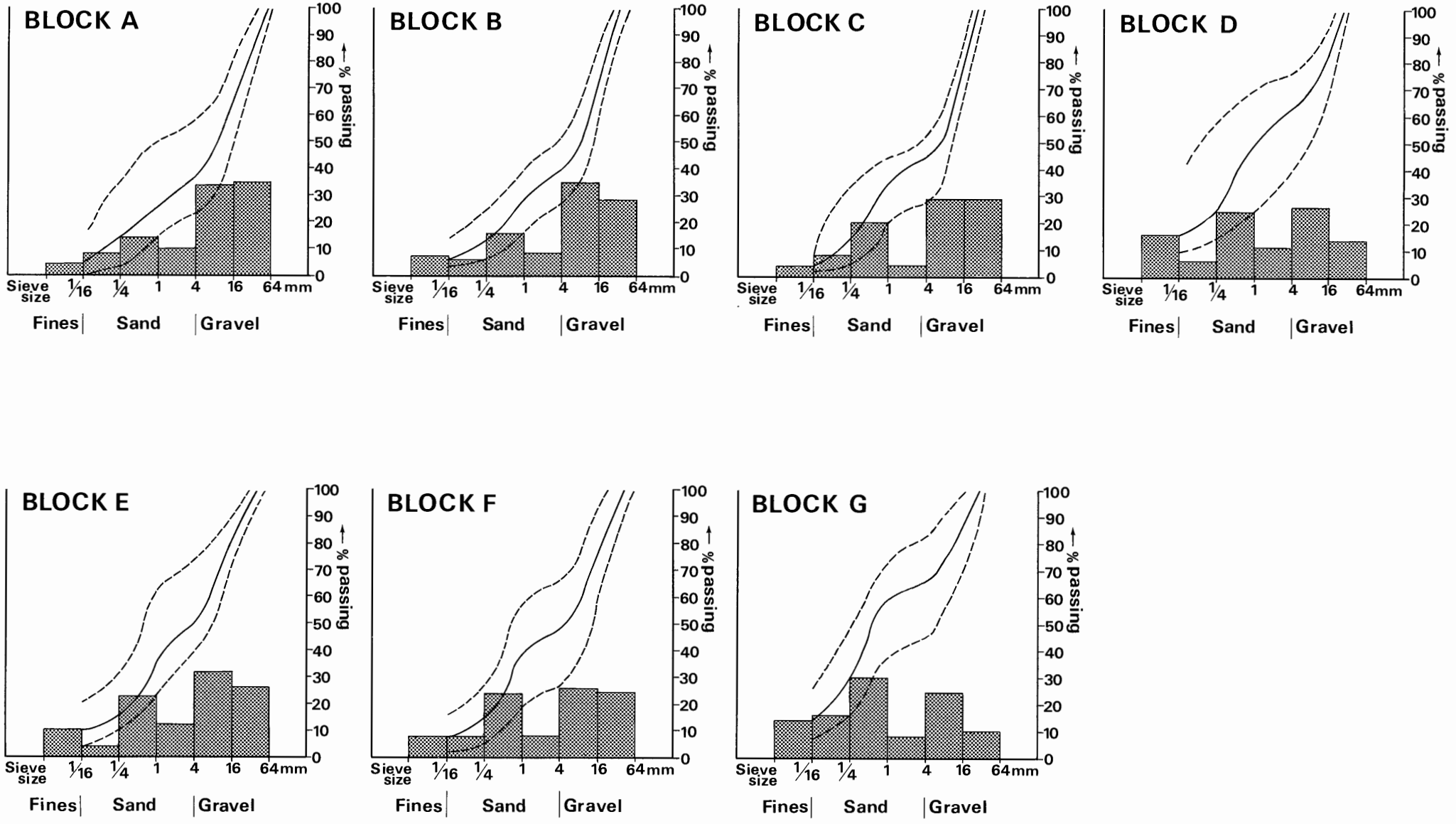


Figure 9 Grading characteristics of the mineral in blocks A to G. The broken lines represent the range of particle-size distribution proved in assessment boreholes: the mean grading of each resource block is shown by the solid line and by the histogram.

estimated as 53 million $m^3 \pm 23$ per cent (± 12 million m^3). The mean grading is fines 6 per cent, sand 36 per cent and gravel 58 per cent.

Block D

The scattered patches of higher level River Terrace Deposits and Older River Gravels in this block cover 8.8 km^2 (23 per cent) of the total block area, and are distributed at heights ranging from about +25 m Ordnance Datum to over +80 m Ordnance Datum.

Overburden, which is patchy and generally thin, comprises soil and pebbly silty clays, and ranges in thickness from nil in borehole SU 20 SW 1 to 1.0 m in borehole SU 10 SE 14; it has a mean of 0.4 m.

The mineral deposits show great variation in thickness and composition; the fines content in borehole samples ranges from 11 per cent to 38 per cent, but for the block overall, the mineral is classified as 'clayey' gravel (up to 20 per cent fines present). The thickness of sand and gravel ranges from 0.5 m in borehole SU 10 SE 12 (5th terrace) to 6.2 m in borehole SU 20 SW 3 (9th terrace) with a mean of 3.0 m. The most extensive deposits in the block are those of the 9th terrace, which within the survey area, have a mean thickness of 4.1 m (Table 2).

The volume of mineral is calculated to be 26 million $m^3 \pm 29$ per cent (± 8 million m^3) at the 95 per cent confidence level; it has a mean grading of fines 17 per cent, sand 43 per cent and gravel 40 per cent.

There are a number of workings in the various terrace deposits in this block, but only one, that at Holmsley Ridge [215 010], is currently active (Plate 1).

Block E

The River Terrace Deposits (5th to 9th Terraces) form continuous but deeply gullied spreads of sand and gravel, which cover 12.9 km^2 (77 per cent) of the block.

Overburden, comprising pebbly silty clays, ranges in thickness from nil in borehole SZ 19 NE 22 to the 2.5 m of soil and Brickearth proved in borehole SZ 29 NW 14, and has a mean of 0.8 m.

The mineral had a mean thickness of 3.8 m, but ranges from 1.1 m proved in borehole SZ 29 NW 12 to 7.1 m in borehole 29 NW 4. This abnormally large thickness of mineral (7.1 m) may represent an accumulation of material at the foot of the terrace bluff, between the 5th and 7th terraces.

The sand and gravel in this block is classified as 'clayey' gravel; the fines content ranges in the boreholes from 6 per cent to 19 per cent by weight.

Data from 17 assessment boreholes and one Hydrogeological Department record have been used to calculate the volume of mineral at 49 million ± 17 per cent (± 8 million m^3). It has a mean grading of fines 10 per cent, sand 36 per cent and gravel 54 per cent.

Although there are no current mineral workings in this block, several relatively large areas have previously been worked (see Appendix G). One of the workings, near Neacroft [186 965], was extended to a depth of over 12 m (from the surface) into the underlying bedrock sands (Bracklesham Beds) to provide a local source of building sand.

Block F

The large area (18.9 km^2) of sand and gravel in this block is distributed principally as continuous spreads of lower level River Terrace Deposits (1st to 4th terraces) of the River Stour. The more recently developed Moors River is thought to lie within, and to be in the process of reworking, the older terrace sands and gravels of the River Stour (3rd to 5th terraces).

Overburden is generally thickest in the floodplain areas, where the maximum recorded thickness of 2.1 m of silty and pebbly silty clay was proved in borehole SZ 09 NE 1. Elsewhere, the overburden, which has a mean thickness of 0.9 m, is generally less than 1 m thick, but an exceptional thickness of 2.8 m of Brickearth was proved in borehole SZ 19 NW 4.

Overall, the mineral in this block is classified as gravel but some boreholes have fines contents of up to 19 per cent (for example in borehole SZ 19 NW 10). The thickness of sand and gravel ranges from 2.0 m in boreholes SZ 09 NE 1 and SZ 19 NW 4 to 6.7 m in borehole SZ 09 NE 5; the mean is 3.7 m.

A calculation based on 18 assessment boreholes and commercial data proves the total mineral volume of 70 million $m^3 \pm 20$ per cent (± 14 million m^3) at the 95 per cent confidence level. It has a mean grading of fines 8 per cent, sand 40 per cent and gravel 52 per cent.

There are no active workings in this block, but fairly extensive old workings exist in the remnant patches of the 8th terrace at St Catherine's Hill [145 955].

Block G

In this block the relatively thin deposits (mainly 4th and 5th terraces) of the Moors River are assessed with remnant patches of the 7th terrace at St Ives [130 045]. Together they cover 7.7 km^2.

Overburden in the Moors River comprises pebbly, silty Alluvium, which has a mean thickness of 0.7 m but ranges from nil in borehole SU 10 SW 8 to 2.9 m in borehole SU 00 SE 7.

The sand and gravel ranges in thickness from nil in boreholes SU 00 SE 3 and SU 00 SE 7 to 3.6 m in borehole SU 10 SW 16 (6th terrace); it has a mean of 1.0 m.

The mineral in this block contains more medium sand (probably derived from local bedrock sands) than occurs in other parts of the survey area; it is classified as 'clayey' sandy gravel with a mean grading of fines 13 per cent, sand 53 per cent and gravel 34 per cent.

Using data from 14 assessment boreholes and commercial data, the total volume of mineral is calculated to be 8 million m^3 at rather high confidence limits of ± 54 per cent (± 4 million m^3) at the 95 per cent confidence level.

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 is 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 km^2, 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 at a diameter of about 200 mm, 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 depth. The samples, each weighing between 25 and 45 kg are despatched in heavy duty polythene bags to a laboratory for grading. The grading procedure is based on British Standard 1377 (1967).

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, Industrial Minerals Assessment Unit.

APPENDIX B

STATISTICAL PROCEDURE

Statistical assessment

1 A statistical assessment is made of an area of mineral greater than 2 km^2, if there is a minimum of five evenly spaced boreholes in the resource block (for smaller areas see paragraph 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.

3 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

$$S_V = \sqrt{(S_A{}^2 + S_{\bar{l}_m}{}^2)} \quad . \qquad [1]$$

4 The above relationship may be transposed such that

$$S_V = S_{\bar{l}_m}\sqrt{(1 + S_A{}^2/S_{\bar{l}_m}{}^2)} \quad . \qquad [2]$$

From this it can be seen that as $S_A{}^2/S_{\bar{l}_m}{}^2$ 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.

5 Given that the number of approximately evenly spaced sample points in the sampled area is n with mineral thickness measurements $l_{m_1}, l_{m_2}, \ldots l_{m_n}$, then the best estimate of mean thickness, $\bar{l}_m$, is given by

$$\sum (l_{m_1} + l_{m_2} \ldots l_{m_n})/n \quad .$$

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 $S_{\bar{l}}$, expressed as a proportion of the mean thickness, is given by

$$S_{\bar{l}} = (1/\bar{l}_m)\sqrt{[\Sigma(l_m - \bar{l}_m)^2/(n-1)]}$$

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

6 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 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 $S_A/S\bar{l}_m \leq \frac{1}{3}$ is assumed in all cases. It follows from equation [2] that

$$S_{\bar{l}_m} \leq S_V \leq 1.05\, S_{\bar{l}_m} \quad . \qquad [3]$$

7 The limits on the estimate of mean thickness of mineral, $L_{\bar{l}_m}$, may be expressed in absolute units $\pm(t/\sqrt{n}) \times S_{\bar{l}_m}$ or as a percentage $\pm(t/\sqrt{n}) \times S_{\bar{l}_m} \times (100/\bar{l}_m)$ 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).

8 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	infinity	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 Edition, Cambridge University Press, 1962). When n is greater than 20, 1.96 is used (the value of t when n is infinity).

9 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

$$[(1.05 \times t)/w\bar{l}_m] \times [\sqrt{\Sigma(wl_m - w\bar{l}_m)^2/n(n-1)}] \times 100$$

per cent, and when n is greater than 20, as

$$[(1.05 \times 1.96)/w\bar{l}_m] \times [\sqrt{\Sigma(wl_m - w\bar{l}_m)^2/n(n-1)}] \times 100$$

per cent.

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

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 $\frac{1}{16}$ mm) and coarser than pebbles (more than 64 mm in 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 $\frac{1}{16}$ 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 Figure 12). 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, Appendix D).

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 $\frac{1}{16}$-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 6), 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 ($+\frac{1}{16} - \frac{1}{4}$ mm), medium ($+\frac{1}{4} - 1$ mm) and coarse ($+1 - 4$ mm). The boundary at 16 mm distinguishes a range of finer gravel ($+4 - 16$ 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

Block calculation **1:25 000 Block** } Fictitious

Area
Block: 11.08 km^2
Mineral: 8.32 km^2

Mean thickness
Overburden: 2.5 m
Mineral: 6.5 m

Volume
Overburden: 21 million m^3
Mineral: 54 million m^3

Confidence limits of the estimate of mineral volume at the 95 per cent probability level: ±20 per cent
That is, the volume of mineral (with 95 per cent probability): 54 ± 11 million m^3

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

Sample point	Weighting w	Overburden l_o	Overburden wl_o	Mineral l_m	Mineral wl_m	Remarks
SE 14	1	1.5	1.5	9.4	9.4	IMAU 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	½	1.2	1.6	9.8	7.2	Hydrogeology Unit record
123/45	½	2.0		4.6		
1	¼	2.7	2.6	7.3	5.8	Close group of four boreholes (commercial)
2	¼	4.5		3.2		
3	¼	0.4		6.8		
4	¼	2.8		5.9		
Totals	$\Sigma w = 8$		$\Sigma wl_o = 20.2$		$\Sigma wl_m = 52.0$	
Means			$\overline{wl_o} = 2.5$		$\overline{wl_m} = 6.5$	

Calculation of confidence limits

wl_m	$(wl_m - \overline{wl_m})$	$(wl_m - \overline{wl_m})^2$
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

$\Sigma (wl_m - \overline{wl_m})^2 = 15.82$
$n = 8$
t = 2.365

L_V is calculated as

$$1.05\,(t/\overline{wl_m})\sqrt{[\Sigma (wl_m - \overline{wl_m})^2/n(n-1)]} \times 100$$
$$= 1.05 \times (2.365/6.5)\sqrt{[15.82/(8 \times 7)]} \times 100$$
$$= 20.3$$
$$\simeq 20 \text{ per cent.}$$

Figure 10 Example of resource block assessment: calculation and results

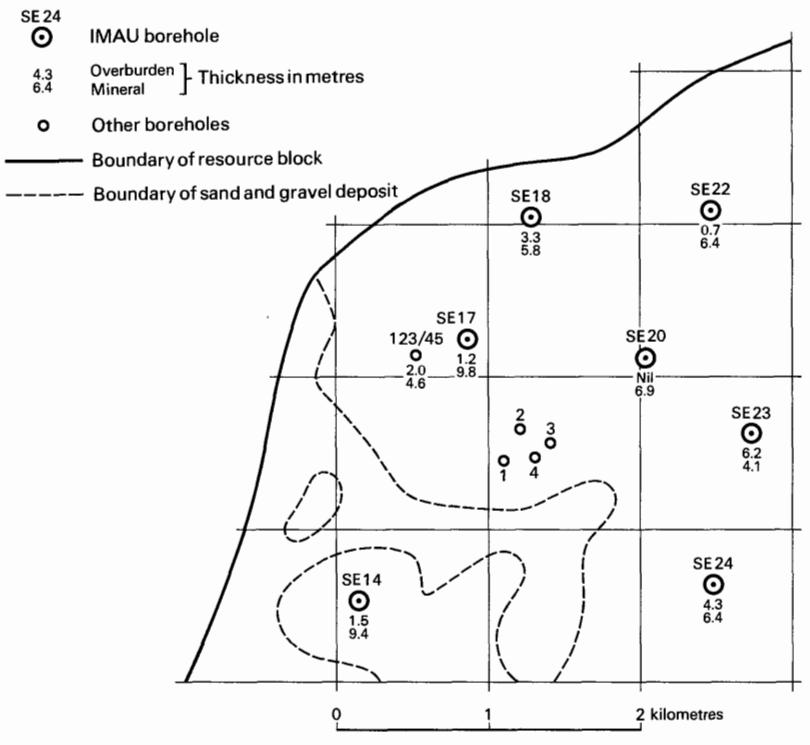


Figure 11 Example of resource block assessment: map of a fictitious block

logarithmic cumulative curves (see, for example, British Standard 1377: 1967). In this report the grading is tabulated on the borehole record sheets (Appendix D), the intercepts corresponding with the simple geometric scale $\frac{1}{16}$ 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, 1975), 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 6 Classification of gravel, sand and fines

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

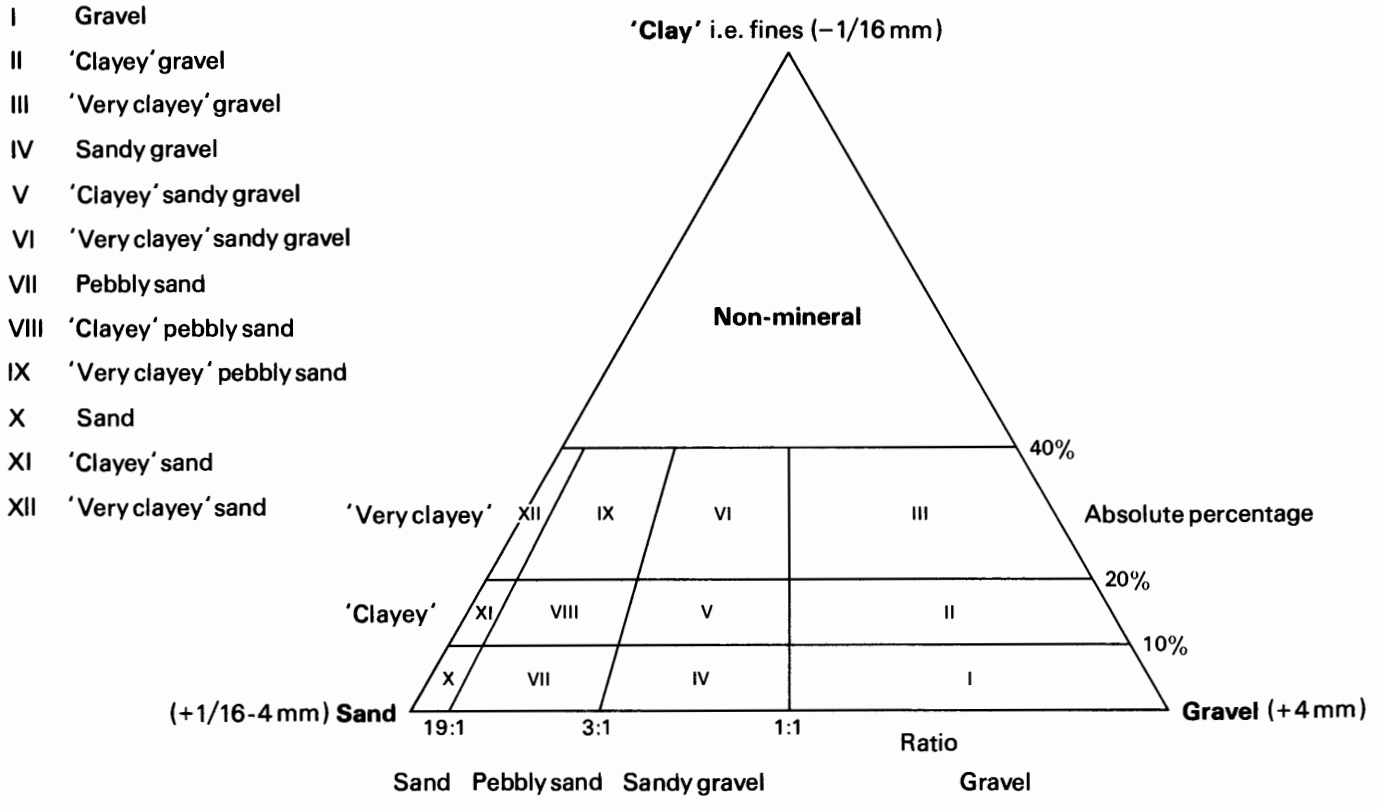


Figure 12 Diagram to show the descriptive categories used in the classification of sand and gravel

APPENDIX D

EXPLANATION OF THE BOREHOLE RECORDS

ANNOTATED EXAMPLE

SU 20 SW 5[1] **2131 0015**[2] **Thorney Hill Holms**[3] **Block D**

Surface level +62.2 m (+204 ft)[4]
Water struck at +59.4 m[5]
Shell and Auger 152 mm diameter[6]
August 1976

Overburden[7] 0.1 m
Mineral 3.2 m
Bedrock 3.4 m+

LOG

Geological classification	Lithology	Thickness[8] m	Depth m
	Soil, peaty silt	0.1	0.1
River Terrace Deposits[10] (9th Terrace)	'Very clayey' sandy gravel[11] Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint and vein-quartz Sand: medium with some fine and coarse subangular to subrounded quartz and flint; silty, orange and yellow	3.2	3.3
Headon Beds	Clay, laminated, silty, yellow and brown	0.7	4.0
	Clay, silty, pale greyish green with abundant shells of *Corbicula* sp. between 5.1 m and 6.5 m	2.6+[9]	6.6

GRADING

Mean for deposit[14] *percentages*			Depth below surface[12] (m)	*percentages*[13]						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
26	46	28	0.1–0.4	30	24	29	6	11	0	0
			0.4–1.0	29	9	41	8	9	4	0
			1.0–2.0	17	15	40	7	13	8	0
			2.0–3.3	30	2	16	8	28	16	0
			Mean	26	9	30	7	18	10	0

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

1 Borehole registration number
Each Industrial Mineral Assessment Unit (IMAU) 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, SU 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, SW 5

Thus the full Registration Number is SU 20 SW 5.

2 The National Grid Reference
All National Grid References in this publication lie within the 100-km squares SU and SZ. 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.

5 Groundwater conditions
Three kinds of entry are made: the record indicates the level at which groundwater was struck during drilling (in metres above or below Ordnance Datum) or that water was not struck, or that no record of groundwater conditions was made.

6 Type of drill and date of drilling
Unless otherwise stated a conventional Dando Shell and Auger rig, with 152 mm diameter casing, was used in the survey. 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
Measurements were made in metres. A conversion table for metres to feet is given in Appendix H.

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
For each sand and gravel unit 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, $-4+\frac{1}{16}$ mm; fines, $-\frac{1}{16}$ mm.

14 Mean grading
The grading of the full thickness of the mineral horizons identified in the log is the mean of the grading of individual samples weighted by the thickness represented, if these vary. The classification used is shown in Table 6.

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

INDUSTRIAL MINERALS ASSESSMENT UNIT BOREHOLES

Borehole number*	Grid reference
SU 00 SE	
1	0750 0351
2	0798 0184
3	0822 0215
4	0975 0361
5	0954 0241
6	0940 0161
7	0990 0100
8	0713 0256
SU 10 SW	
3	1001 0275
4	1060 0225
5	1037 0096
6	1024 0048
7	1282 0462
8	1344 0254
9	1372 0170
10	1340 0011
11	1456 0447
12	1428 0335
13	1462 0288
14	1469 0107
15	1439 0048
16	1324 0426
SU 10 SE	
1	1566 0434
2	1570 0344
3	1538 0229
4	1566 0156
5	1550 0062
6	1682 0330
7	1625 0240
8	1633 0100
9	1629 0023
10	1747 0412
11	1746 0229
12	1696 0104
13	1919 0125
14	1866 0046
SU 20 SW	
1	2001 0329
2	2095 0215
3	2146 0281
4	2175 0111
5	2131 0015
6	2267 0259
7	2276 0180
8	2009 0005
SZ 09 NE	
1	0744 9760
2	0870 9736
3	0965 9830
4	0962 9715
5	0937 9629
6	0980 9554
SZ 19 NW	
1	1083 9947
2	1024 9836
3	1024 9731
4	1046 9520
5	1141 9902
6	1183 9723
7	1170 9637
8	1154 9542
9	1202 9778
10	1220 9612
11	1282 9512
12	1343 9953
13	1372 9836
14	1401 9674
15	1427 9941
16	1492 9885
17	1466 9767
18	1494 9593
19	1346 9532
SZ 19 NE	
2	1550 9964
3	1548 9849
4	1552 9776
5	1529 9657
6	1551 9545
7	1662 9931
8	1671 9841
9	1632 9723
10	1637 9644
11	1672 9528
12	1752 9975
13	1763 9851
14	1786 9730
15	1745 9664
16	1741 9528
17	1853 9766
18	1905 9685
19	1823 9565
20	1961 9814
21	1952 9627
22	1944 9522
SZ 29 NW	
1	2087 9884
2	2020 9764
3	2064 9681
4	2029 9554
5	2174 9879
6	2138 9740
7	2139 9665
8	2114 9557
9	2258 9931
10	2215 9843
11	2242 9755
12	2208 9615
13	2232 9508
14	2294 9554

OTHER BOREHOLES

IGS Registered number*	Grid reference
SU 10 SW 1	1469 0479
SU 10 SW 2	1476 0478

Hydrogeological Department

Borehole number	Grid reference
329/34	2084 9602

A number of other records held in confidence by the Institute were also used in the assessment of resources.

* By sheet quadrant.

APPENDIX F

INDUSTRIAL MINERALS ASSESSMENT UNIT BOREHOLE RECORDS

SU 00 SE 1 **0750 0351** **Nr West Moors** **Block G**

Surface level + 16.2 m (+53 ft)
Water struck at + 14.7 m
Shell and Auger 152 mm diameter
July 1976

Waste 1.5 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay loam, orange and brown mottled	0.6	0.6
Alluvium	Clay, silty, with fine subangular flint	0.4	1.0
	Sand Sand: medium with some fine subangular to subrounded quartz; grey-yellow	0.5	1.5
Bagshot Beds	'Clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, lignitic, greyish brown	3.0+	4.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	90	2	1.0–1.5	8	16	71	3	2	0	0
16	81	3	1.5–3.0	16	76	3	0	2	3	0
			3.0–4.5	16	63	20	0	0	1	0
			Mean	16	70	11	0	1	2	0

SU 00 SE 2 0798 0184 Nr Broadmoor Coppice **Block G**

Surface level +14.0 m (+46 ft)
Water struck at +11.3 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.4 m
Mineral 1.6 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, grey-brown	0.4	0.4
River Terrace Deposits (4th Terrace)	'Clayey' pebbly sand Gravel: fine subangular to subrounded flint Sand: medium with fine and some coarse subangular to subrounded quartz and flint	1.6	2.0
Bagshot Beds	Sand Sand: fine and medium subrounded to well-rounded quartz, lignitic, dark greyish brown	3.0+	5.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
19	61	20	0.4–1.4	23	15	20	10	29	3	0
			1.4–2.0	11	17	68	3	1	0	0
			Mean	19	15	38	8	18	2	0
9	91	0	2.0–3.0	11	47	41	1	0	0	0
			3.0–4.0	7	33	57	3	0	0	0
			4.0–5.0	9	61	29	1	0	0	0
			Mean	9	47	42	2	0	0	0

SU 00 SE 3 0822 0215 Woolslope Farm **Block G**

Surface level +14.9 m (+49 ft)
Water struck at +12.5 m
Shell and Auger 152 mm diameter
July 1976

Waste 0.8 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, grey-brown with fine subangular flint	0.8	0.8
Bagshot Beds	'Clayey' sand Sand: fine and medium subrounded to well-rounded quartz, silty, yellow, becoming lignitic and greyish brown below 3.5 m	4.0+	4.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
18	82	0	0.8–1.8	44	31	24	1	0	0	0
			1.8–2.8	4	58	38	0	0	0	0
			2.8–3.8	14	34	52	0	0	0	0
			3.8–4.8	9	50	39	2	0	0	0
			Mean	18	43	38	1	0	0	0

SU 00 SE 4 0975 0361 West Moors Plantation **Block G**

Surface level +16.1 m (+53 ft)
Water struck at +14.6 m
Shell and Auger 152 mm diameter
June 1976

Overburden 1.2 m
Mineral 1.2 m
Bedrock 2.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, brown with scattered fine subangular flints	0.2	0.2
River Terrace Deposits (4th Terrace)	'Clayey' sand Sand: fine with some medium subangular to subrounded quartz, silty, yellow-brown	1.0	1.2
	Gravel Gravel: fine and coarse subangular to subrounded flint, traces of well-rounded vein-quartz Sand: medium with fine and coarse subangular to subrounded quartz and flint, yellow; thin silty clay band at 2.3 m	1.2	2.4
Bagshot Beds	Clay, silty, greenish grey below 3.7 m	2.6+	5.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	84	1	0.2–1.2	15	55	29	0	1	0	0
6	38	56	1.2–2.4	6	8	23	7	27	29	0

SU 00 SE 5 0954 0241 West Moors Plantation **Block G**

Surface level +14.2 m (+46.5 ft)
Water struck at +12.0 m
Shell and Auger 152 mm diameter
June 1976

Overburden 0.3 m
Mineral 1.8 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, pale grey	0.3	0.3
River Terrace Deposits (4th Terrace)	'Clayey' sandy gravel Gravel: fine with some coarse, subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, silty, orange-grey	1.8	2.1
Bagshot Beds	'Clayey' sand Sand: medium with some fine subrounded to well rounded quartz, traces coarse subangular flint, silty, lignitic, greyish brown	4.0+	6.1

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	53	32	0.8–1.1	20	24	32	5	14	5	0
			1.1–2.1	11	6	29	11	31	12	0
			Mean	15	12	32	9	23	9	0
10	89	1	2.1–3.1	18	13	62	5	1	1	0
			3.1–4.1	8	13	71	8	0	0	0
			4.1–5.1	5	18	75	2	0	0	0
			5.1–6.1	11	38	38	5	6	2	0
			Mean	10	15	69	5	1	0	0

SU 00 SE 6 0940 0161 Nr Trickett's Cross **Block G**

Surface level +13.4 m (+44 ft)
Water struck at +10.5 m
Shell and Auger 152 mm diameter
July 1976

Waste 0.9 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown, with scattered fine subangular flint	0.5	0.5
River Terrace Deposits (5th Terrace)	'Clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint Sand: fine and medium with some coarse subangular to subrounded quartz and flint	0.4	0.9
Bagshot Beds	'Very clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, yellow; thin laminated silty clay bands at intervals	4.0+	4.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	52	33	0.5–0.9	15	23	22	7	21	12	0
37	62	1	0.9–1.9	44	46	4	2	4	0	0
			1.9–2.9	61	34	4	1	0	0	0
			2.9–3.9	36	32	31	1	0	0	0
			3.9–4.9	7	45	48	0	0	0	0
			Mean	37	39	22	1	1	0	0

SU 00 SE 7 0990 0100 Nr Hurn Forest **Block G**

Surface level +10.8 m (+35.5 ft)
Water struck at +8.8 m
Shell and Auger 152 mm diameter
July 1976

Waste 2.9 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay loam, grey-brown	0.2	0.2
Peat	Peat, brown	0.7	0.9
Alluvium	Clay, silty, grey-brown with scattered fine subangular flint	2.0	2.9
Bagshot Beds	'Clayey' sand Sand: medium and fine subrounded to well-rounded quartz, silty, lignitic, greyish brown; thin laminated silty clay bands at 3.9 m	3.0+	5.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
13	86	1	2.9–3.9	20	30	46	3	1	0	0
			3.9–4.9	11	38	48	2	1	0	0
			4.9–5.9	7	57	36	0	0	0	0
			Mean	13	41	44	1	1	0	0

SU 00 SE 8 0713 0256 Dolman's Farm **Block G**

Surface level +15.6 m (+51 ft)
Water struck at +13.9 m
Shell and Auger 152 mm diameter
October 1976

Overburden 1.2 m
Mineral 1.4 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown	0.5	0.5
River Terrace Deposits (4th Terrace)	Clay, silty, brown and grey mottled	0.7	1.2
	'Clayey' pebbly sand Gravel: fine with some coarse subangular to subrounded flint Sand: medium with some coarse and fine subangular to subrounded quartz and flint	1.4	2.6
Bagshot Beds	Sand Sand: medium with some fine and coarse subrounded to well-rounded quartz, lignitic, greyish brown; thin laminated silty clay bands at 3.5 m, and between 3.6 m to 4.6 m, and 5.3 m to 5.6 m; pale grey cementstone at 5.0 m	3.0+	5.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
12	69	19	1.2–2.6	12	10	48	11	15	4	0
9	91	0	2.6–3.6 3.6–4.6	10 clay	12	69	9	0	0	0
			4.6–5.3	7	16	72	5	0	0	0
			Mean	9	14	70	7	0	0	0

SU 10 SW 3 1001 0275 Nr East Moors Farm **Block G**

Surface level +13.3 m (+43.5 ft)
Water struck at +12.1 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.2 m
Mineral 1.0 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, scattered fine subangular flint	0.2	0.2
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint Sand: medium with coarse and fine subangular to subrounded quartz and flint, brown	1.0	1.2
Bagshot Beds	Sand Sand: fine and medium subrounded to well-rounded quartz, grey	3.0+	4.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	38	54	0.2–1.2	8	8	20	10	37	17	0
9	90	1	1.2–2.2	8	41	46	2	3	0	0
			2.2–3.2	9	59	31	1	0	0	0
			3.2–4.2	10	38	50	2	0	0	0
			Mean	9	46	42	2	1	0	0

SU 10 SW 4 1060 0225 St Leonards Hospital **Block G**

Surface level +15.5 m (+51 ft)
Water struck at +12.6 m
Shell and Auger 152 mm diameter
July 1976

Waste 0.8 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, grey-brown with scattered fine subangular flint	0.3	0.3
River Terrace Deposits (6th Terrace)	'Very clayey' sandy gravel Gravel: fine with some subangular to subrounded flint Sand: fine with medium, and some coarse subangular to subrounded quartz and flint, silty, yellow	0.5	0.8
Bagshot Beds	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, lignitic, greyish brown	3.0+	3.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
23	51	26	0.3–0.8	23	24	19	8	22	4	0
20	78	2	0.8–1.8	12	81	3	1	3	0	0
			1.8–2.8	27	69	2	0	2	0	0
			2.8–3.8	21	66	12	1	0	0	0
			Mean	20	72	6	0	2	0	0

SU 10 SW 5 1037 0096 Nr Hurn Forest **Block G**

Surface +10.9 m (+36 ft)
Water struck at +9.7 m
Shell and Auger 152 mm diameter
July 1976

Waste 0.2 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, brown	0.2	0.2
Bagshot Beds	'Clayey' sand Sand: medium with some fine subrounded to well-rounded quartz, lignitic, silty, light brown	4.0+	4.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
11	89	0	0.2–1.2	13	21	64	2	0	0	0
			1.2–2.2	5	13	81	1	0	0	0
			2.2–3.2	8	29	62	1	0	0	0
			3.2–4.2	17	44	39	0	0	0	0
			Mean	11	27	61	1	0	0	0

SU 10 SW 6 1024 0048 Nr East Parley Common **Block G**

Surface level +12.2 m (+40 ft)
Water struck at +10.0 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.2 m
Mineral 1.0 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, dark brown	0.2	0.2
River Terrace Deposits (5th Terrace)	Sandy gravel Gravel: fine with some coarse subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, light brown	1.0	1.2
Bagshot Beds	Sand Sand: medium with some fine subrounded to well-rounded quartz, light brown	3.0+	4.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	56	38	0.2–1.2	6	12	35	9	29	9	0
4	96	0	1.2–2.2	8	13	76	3	0	0	0
			2.2–3.2	2	6	92	0	0	0	0
			3.2–4.2	3	4	93	0	0	0	0
			Mean	4	8	87	1	0	0	0

SU 10 SW 7 **1282 0462** **St Ives House** **Block G**

Surface level +41.1 m (+135 ft)
Water struck at +36.5 m
Shell and Auger 152 mm diameter
June 1976

Waste 0.6 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, pale grey	0.2	0.2
Brickearth	Sand, silty, fine quartz with scattered fine subangular flint	0.4	0.6
Bracklesham Beds	'Clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, buff and yellow, silty	4.0+	4.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
10	90	0	0.6–1.6	18	58	23	1	0	0	0
			1.6–2.6	1	80	19	0	0	0	0
			2.6–3.6	1	91	8	0	0	0	0
			3.6–4.6	18	78	4	0	0	0	0
			Mean	10	76	14	0	0	0	0

SU 10 SW 8 1344 0254 Nr Kitten's Farm **Block G**

Surface level +37.9 m (+124.5 ft)
Water not struck
Shell and Auger 152 mm diameter
July 1976

Mineral 1.2 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
River Terrace Deposits (7th Terrace)	'Very clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces well rounded flint and vein-quartz Sand: medium and fine with some coarse subangular to subrounded quartz and flint, grey-brown and orange	1.2	1.2
Bracklesham Beds	'Clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, yellow-orange	3.0+	4.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
28	42	30	0.0–0.3	15	32	17	4	20	12	0
			0.3–1.2	32	12	19	8	23	6	0
			Mean	28	17	18	7	23	7	0
13	87	0	1.2–2.2	11	53	35	0	1	0	0
			2.2–3.2	13	56	31	0	0	0	0
			3.2–4.2	16	47	37	0	0	0	0
			Mean	13	52	35	0	0	0	0

SU 10 SW 9 1372 0170 Wattons Ford **Block C**

Surface level +9.8 m (+32 ft)
Water struck at +8.2 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.3 m
Mineral 3.2 m
Bedrock 2.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, grey	0.2	0.2
Alluvium	'Very clayey' pebbly sand Gravel: coarse and fine subangular to subrounded flint Sand: fine with some medium subangular to subrounded quartz and flint, silty, dark grey	1.1	1.3
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces well-rounded flint Sand: medium with coarse and some fine subangular to subrounded quartz and flint, orange-brown	3.2	4.5
Bracklesham Beds	'Clayey' pebbly sand Gravel: coarse and fine subangular to subrounded flint Sand: fine and medium subrounded to subangular quartz with some flint, silty, greyish brown, laminated silty clay bands between 5.1 m to 5.3 m and 6.4 m to 6.6 m	2.9+	7.4

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
20	71	9	0.2–1.3	20	43	25	3	3	6	0
5	34	61	1.3–2.3	8	8	19	9	34	22	0
			2.3–3.3	6	3	17	8	34	32	0
			3.3–4.5	2	4	21	12	31	30	0
			Mean	5	5	19	10	33	28	0
17	69	14	4.5–5.1	5	24	48	5	9	9	0
			5.1–5.3	clay band						
			5.3–6.4	13	50	33	1	1	2	0
			6.4–6.6	clay band						
			6.6–7.4	32	24	16	2	9	17	0
			Mean	17	36	31	2	6	8	0

SU 10 SW 10 **1340 0011** **Week Farm** **Block C**

Surface level +9.5 m (+31 ft)
Water struck at +8.6 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.3 m
Mineral 6.0 m
Bedrock 1.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, brown	0.3	0.3
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces fine well-rounded flint and vein-quartz Sand: medium with coarse and fine subangular to subrounded quartz and flint, greyish brown	6.0	6.3
Bracklesham Beds	Clay, silty, laminated, lignitic, greyish brown	1.9+	8.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	45	51	0.3–1.3	4	13	24	11	25	23	0
			1.3–2.3	3	13	25	14	27	18	0
			2.3–3.3	1	4	16	5	30	44	0
			3.3–4.3	8	0	26	10	32	24	0
			4.3–5.3	2	11	39	11	27	10	0
			5.3–6.3	3	16	26	11	20	24	0
			Mean	4	9	26	10	27	24	0

SU 10 SW 11 **1456 0447** **Nr Westover Farm** **Block C**

Surface level +12.5 m (+41 ft)
Water struck at +10.7 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.8 m
Mineral 2.2 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam, dark brown	0.3	0.3
Alluvium	Clay, silty, yellow and greyish green mottled, scattered fine subangular flint below 1.3 m	1.5	1.8
River Terrace Deposits (2nd Terrace)	Gravel Gravel: coarse with fine subangular to subrounded flint, traces fine subrounded to well-rounded, vein-quartz, flint and sandstone Sand: fine with medium and some coarse subangular to subrounded quartz and flint, grey	2.2	4.0
Bracklesham Beds	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, traces flint, silty, lignitic, greyish brown	3.0+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	38	58	1.8–3.0	2	2	9	9	31	47	0
			3.0–4.0	6	36	17	7	13	21	0
			Mean	4	17	13	8	23	35	0
26	74	0	4.0–5.0	9	66	23	2	0	0	0
			5.0–7.0	35	55	9	1	0	0	0
			Mean	26	59	14	1	0	0	0

SU 10 SW 12 **1428 0335** **Nr Avon Castle** **Block C**

Surface level +12.7 m (+41.5 ft)
Watr struck at +12.1 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.6 m
Mineral 2.8 m
Bedrock 3.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty silt, brown	0.3	0.3
Alluvium	Clay, silty, soft mottled grey and yellow, scattered fine angular flint	0.3	0.6
River Terrace Deposits (2nd Terrace)	Gravel Gravel: coarse with fine subangular to subrounded flint, occasional subrounded flint cobbles, traces subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with coarse and fine subangular to subrounded quartz and flint, brown	2.8	3.4
Bracklesham Beds	'Clayey' sand Sand: fine subrounded to well-rounded quartz, lignitic, silty, greyish brown	3.5+	6.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	28	68	0.6–1.6	6	4	12	11	30	37	0
			1.6–2.6	3	3	11	8	35	40	0
			2.6–3.4	2	14	17	7	26	34	0
			Mean	4	6	13	9	31	37	0
18	80	2	3.4–4.9	9	87	4	0	0	0	0
			4.9–6.0	12	79	4	1	1	3	0
			6.0–6.9	41	57	1	0	1	0	0
			Mean	18	77	3	0	1	1	0

SU 10 SW 13 1462 0288 Kingston North Common **Block A**

Surface level +12.7 m (+41.5 ft)
Water struck at +10.9 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.2 m
Mineral 4.8 m
Bedrock 1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, grey brown	0.2	0.2
River Terrace Deposits (2nd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, subrounded flint cobbles, traces well-rounded fine flint Sand: medium with coarse and some fine subangular to subrounded quartz and flint, light brown	4.8	5.0
Bracklesham Beds	Clay, silty, laminated, lignitic, greyish brown	1.5+	6.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
3	29	68	0.2–1.2	3	11	14	9	33	30	0
			1.2–2.2	3	4	9	11	31	42	0
			2.2–3.7	1	5	15	13	36	30	0
			3.7–4.7	1	2	9	10	38	40	0
			4.7–5.0	15	9	29	3	19	25	0
			Mean	3	5	14	10	34	34	0

SU 10 SW 14 1469 0107 The Parsonage **Block A**

Surface level +11.6 m (+38 ft)
Water struck at +10.4 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.1 m
Mineral 5.9 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown, scattered fine subangular flint	0.5	0.5
Brickearth	Clay, silty, fine quartz, scattered fine subangular flint	0.6	1.1
River Terrace Deposits (2nd Terrace)	Gravel Gravel: coarse and fine subangular to subrounded flint, subrounded flint cobbles, traces fine well-rounded flint and vein-quartz Sand: medium with fine and some coarse subangular to subrounded quartz and flint	5.9	7.0
Bracklesham Beds	'Clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, lignitic, greyish brown	2.0+	9.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
2	30	68	1.1–2.1	2	2	12	10	28	46	0
			2.1–3.1	1	1	4	6	40	48	0
			3.1–4.1	1	3	11	5	38	42	0
			4.1–5.1	3	2	15	6	35	39	0
			5.1–6.0	2	13	14	4	27	40	0
			6.0–7.0	3	41	26	3	4	23	0
			Mean	2	10	14	6	28	40	0
13	86	1	7.0–8.0	11	49	36	3	1	0	0
			8.0–9.0	14	57	25	3	1	0	0
			Mean	13	53	30	3	1	0	0

SU 10 SW 15 1439 0048 Nr Lower Side Copse **Block A**

Surface level +14.1 m (+46.5 ft)
Water struck at +11.6 m
Shell and Auger 152 mm diameter
April 1977

Overburden 3.2 m
Mineral 5.0 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, brown	0.4	0.4
Brickearth	'Clayey' sand Sand: fine with some medium subangular to subrounded quartz, silty, orange, brown below 1.8 m. Scattered fine and coarse subangular flint below 2.4 m	2.8	3.2
River Terrace Deposits (2nd Terrace)	Sandy gravel Gravel: coarse and fine subangular to subrounded flint, occasional subrounded flint cobbles, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: fine with medium and some coarse subangular to subrounded quartz and flint, orange becoming grey below 6.2 m	5.0	8.2
Bracklesham Beds	Sand Sand: fine with some medium subrounded to well-rounded quartz, lignitic, greyish brown	2.0+	10.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
10	88	2	0.4–1.4	13	71	16	0	0	0	0
			1.4–2.4	11	54	35	0	0	0	0
			2.4–3.2	5	63	22	2	5	3	0
			Mean	10	62	25	1	1	1	0
3	53	44	3.2–4.2	3	30	20	6	22	19	0
			4.2–5.2	2	5	23	19	31	20	0
			5.2–6.2	1	16	9	5	25	44	0
			6.2–7.2	6	36	13	2	14	29	0
			7.2–8.2	3	69	10	2	3	13	0
			Mean	3	31	15	7	19	25	0
8	92	0	8.2–9.2	9	77	14	0	0	0	0
			9.2–10.2	7	57	36	0	0	0	0
			Mean	8	67	25	0	0	0	0

SU 10 SW 16 1324 0426 Nr Whitehouse Wood **Block G**

Surface level +35.6 m (+117 ft)
Water not struck
Shell and Auger 152 mm diameter
October 1976

Overburden 0.4 m
Mineral 3.6 m
Bedrock 5.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, sand with subangular flint	0.3	0.3
	Soil, peaty sand	0.1	0.4
River Terrace Deposits (6th Terrace)	Sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint and vein-quartz Sand: medium with fine subangular to subrounded quartz and flint, yellow, greenish grey	3.6	4.0
Bracklesham Beds	'Clayey' sand Sand: fine and medium subrounded to well-rounded quartz, silty, orange-yellow. Scattered fine and coarse subangular flint	5.0+	9.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
9	55	36	0.4–0.9	11	49	22	2	8	8	0
			0.9–2.0	10	17	18	7	29	19	0
			2.0–3.0	9	22	29	7	21	12	0
			3.0–4.0	7	22	32	3	20	16	0
			Mean	9	24	26	5	21	15	0
10	87	3	4.0–5.0	8	46	43	1	1	1	0
			5.0–6.0	6	44	45	1	2	2	0
			6.0–7.0	14	40	38	1	3	4	0
			7.0–8.3	11	47	40	1	1	0	0
			8.3–9.0	11	42	46	0	1	0	0
			Mean	10	44	42	1	2	1	0

SU 10 SE 1 1566 0434 Nr Moortown House **Block A**

Surface level +20.3 m (+66.5 ft)
Water struck at +16.0 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.9 m
Mineral 5.8 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, grey-brown clay loam with scattered subrounded to rounded flint pebbles	0.9	0.9
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded brown and black flint with some subrounded flint cobbles; traces of fine vein-quartz and sandstone Sand: coarse with some fine and medium subangular to subrounded quartz and flint, yellow-brown	5.8	6.7
Bracklesham Beds	Sand Sand: fine and medium subrounded quartz, orange-brown, thin clay laminae at intervals, traces of lignite	3.0+	9.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	26	69	0.9–1.9	11	14	16	9	31	19	0
			1.9–2.9	8	5	13	13	35	26	0
			2.9–3.9	4	6	16	16	43	15	0
			3.9–4.9	2	2	5	9	48	34	0
			4.9–5.9	4	0	3	4	28	58	3
			5.9–6.5	1	8	4	6	35	46	0
			6.5–6.7	7	29	6	5	19	34	0
			Mean	5	7	10	9	36	33	0
4	93	3	6.7–7.7	4	77	7	4	4	4	0
			7.7–8.7	3	86	10	1	0	0	0
			8.7–9.7	4	9	86	1	0	0	0
			Mean	4	57	34	2	2	1	0

SU 10 SE 2 1570 0344 Nr Upper Kingston Farm **Block A**

Surface level +18.8 m (+61.5 ft)
Water struck at +14.3 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.9 m
Mineral 4.6 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, light brown clay loam with scattered patinated subangular flint	0.9	0.9
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded black and brown patinated flint with some fine vein-quartz and sandstone Sand: medium and coarse with some fine subangular to subrounded quartz, brown-yellow	4.6	5.5
Bracklesham Beds	Silt, clayey, yellow, with thin pale grey clay laminae and scattered fine, angular to subangular flint pebbles from 5.5 to 7.7 m	3.0+	8.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	+1−4	+4−16	+16−64	+64
8	34	58	0.9–1.9	11	8	13	13	36	19	0
			1.9–2.9	5	4	19	14	38	20	0
			2.9–4.5	8	4	19	17	42	20	0
			4.5–5.5	8	12	10	16	35	19	0
			Mean	8	7	12	15	38	20	0

SU 10 SE 3 1538 0229 Nr Kingston **Block A**

Surface level +16.5 m (+54 ft)
Water struck at +14.0 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.7 m
Mineral 3.3 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown clayey sand with scattered subangular flint pebbles	0.7	0.7
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded brown and black flint; occasional subrounded flint cobbles Sand: medium with fine and coarse subangular to subrounded quartz and flint, light brown	3.3	4.0
Bracklesham Beds	Silt, clayey, yellow-orange becoming lignitic	0.4	4.4
	Clay, laminated silty clay, dark brown, lignitic	0.8	5.2
	Sand, silty, dark brown, lignitic	1.8+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	31	63	0.7–1.7	12	7	15	9	34	23	0
			1.7–2.7	4	6	17	11	37	25	0
			2.7–4.0	4	4	15	9	29	39	0
			Mean	6	6	16	9	33	30	0
46	54	0	5.2–7.0	46	49	4	1	0	0	0

SU 10 SE 4 1566 0156 Nr Upper Bisterne Farm **Block A**

Surface level +16.0 m (+52.5 ft)
Water struck at +14.4 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.8 m
Mineral 3.5 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown sandy loam with scattered fine subangular flint pebbles	0.4	0.4
Brickearth	Clay, sandy, silty, yellow-brown	0.4	0.8
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded flint, occasional flint cobbles, and traces of vein-quartz and fine well-rounded flint Sand: medium with coarse and with some fine subangular to subrounded quartz and flint, orange-brown becoming grey below 2.8 m	3.5	4.3
Bracklesham Beds	Sand Sand: medium with some fine subangular to subrounded quartz, pale grey	3.0+	7.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	31	63	0.8–1.8	12	8	16	10	36	18	0
			1.8–2.8	2	2	15	11	33	37	0
			2.8–3.8	5	3	16	8	32	36	0
			3.8–4.3	3	10	15	16	16	40	0
			Mean	6	5	16	10	31	32	0
2	98	0	4.3–5.3	2	10	84	3	0	1	0
			5.3–6.3	2	31	67	0	0	0	0
			6.3–7.3	2	22	76	0	0	0	0
			Mean	2	21	76	1	0	0	0

SU 10 SE 5 1550 0062 Bisterne Manor **Block A**

Surface level +14.4 m (+47 ft)
Water struck at +12.9 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.3 m
Mineral 3.9 m
Bedrock 2.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown silty sand	0.5	0.5
Brickearth	Clay, sandy, orange-brown becoming yellow-grey with silty and clayey bands	0.8	1.3
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine to coarse subangular to subrounded flint, traces of well-rounded fine flint and vein-quartz Sand: fine with medium and coarse subangular to subrounded quartz and flint, grey-brown	3.9	5.2
Bracklesham Beds	'Clayey' sand Sand: fine with some medium subangular to subrounded quartz, silty, dark grey-brown, lignitic	2.6	7.8
	Clay, silty, firm, laminated, dark grey-brown	0.2+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	23	72	1.3–2.3	11	6	13	9	32	29	0
			2.3–3.3	2	1	5	8	34	50	0
			3.3–4.2	1	2	7	8	37	45	0
			4.2–5.2	6	29	1	3	18	43	0
			Mean	5	10	6	7	30	42	0
17	71	12	5.2–6.2	22	60	17	1	0	0	0
			6.2–7.2	15	24	36	3	9	13	0
			7.2–7.8	14	65	1	1	3	16	0
			Mean	17	54	15	2	3	9	0

SU 10 SE 6 1682 0330 Nr Upper Kingston Farm **Block A**

Surface level +20.0 m (+65.5 ft)
Water struck at +16.8 m
Shell and Auger 152 mm diameter
April 1977

Overburden 3.2 m
Mineral 6.2 m
Bedrock 3.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, brown sandy loam	1.1	1.1
Brickearth	Silt, sandy, with scattered fine subangular patinated flint	2.1	3.2
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded brown and black flint, traces subrounded fine sandstone and fine well-rounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, light brown	6.2	9.4
Barton Clay	Clay, sandy, glauconitic, becoming orange silty clay below 9.7 m	0.9	10.3
Bracklesham Beds	'Very clayey' sand Sand: fine with some medium subrounded quartz, silty, dark brown; laminated silty clay with fine quartz sand partings between 10.8 and 11.1 m	2.9+	13.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	19	77	3.2–4.2	4	5	10	7	30	44	0
			4.2–5.2	2	1	9	10	46	32	0
			5.2–6.2	0	6	14	5	34	41	0
			6.2–7.2	4	3	7	7	53	26	0
			7.2–8.3	6	2	7	4	40	41	0
			8.3–9.4	5	8	9	3	25	50	0
			Mean	4	4	9	6	38	39	0
30	62	8	9.4–10.3	sandy clay						
			10.3–10.8	32	22	6	4	16	20	0
			10.8–11.1	clay band						
			11.1–13.2	29	60	8	2	1	0	0
			Mean	30	52	8	2	4	4	0

SU 10 SE 7 1625 0240 Castleman's Farm **Block A**

Surface level +17.0 m (+56 ft)
Water struck at +16.0 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.9 m
Mineral 4.3 m
Bedrock 1.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown loam with scattered fine subangular flint pebbles	0.3	0.3
Brickearth	Clay, sandy light brown	0.6	0.9
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine to coarse, subangular to subrounded black and brown flint, occasional flint cobbles, traces of well-rounded vein-quartz and fine subrounded sandstone Sand: medium and coarse with some fine subangular to subrounded quartz and flint, yellow-brown-grey	4.3	5.2
Barton Clay	Clay, silty, with some fine quartz sand, olive-green-grey	0.6	5.8
Bracklesham Beds	'Very clayey' sand Sand: medium and fine subrounded quartz, silty, dark brown. Bed of light green-grey laminated silty sand between 6.4 and 6.6 m	1.0+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
1	20	79	0.9–1.9	2	5	10	6	27	50	0
			1.9–2.9	0	5	11	7	34	43	0
			2.9–3.9	1	2	6	9	33	49	0
			3.9–5.2	2	1	8	8	28	53	0
			Mean	1	3	9	8	30	49	0
28	72	0	5.2–5.8	clay						
			5.8–6.8	28	24	45	3	0	0	0

SU 10 SE 8 1633 0100 Broad Heath **Block A**

Surface level +16.9 m (+55.5 ft)
Water struck at +14.7 m
Shell and Auger 152 mm diameter
April 1977

Overburden 2.8 m
Mineral 2.8 m
Bedrock 1.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, grey-brown silty sand	0.9	0.9
Brickearth	'Very clayey' sand Sand: fine subangular to subrounded quartz, pale grey to buff, with scattered fine subangular flints, silty	1.9	2.8
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces of fine subrounded sandstone and well-rounded flint and vein-quartz Sand: medium and coarse with some fine subangular to subrounded quartz and flint, greyish green-buff	2.8	5.6
Barton Clay	Clay, firm, laminated greyish green, silty	1.4+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	+1–4	+4–16	+16–64	+64
33	65	2	0.9–1.9	27	72	1	0	0	0	0
			1.9–2.8	39	50	5	1	4	1	0
			Mean	33	61	3	1	2	0	0
2	33	65	2.8–3.8	1	5	14	14	36	30	0
			3.8–4.8	2	11	18	8	25	36	0
			4.8–5.6	2	5	12	12	39	30	0
			Mean	2	7	15	11	33	32	0

SU 10 SE 9 1629 0023 Summergates **Block A**

Surface level +16.4 m (+54 ft)
Water struck at +13.3 m
Shell and Auger 152 mm diameter
March 1977

Overburden 3.1 m
Mineral 2.3 m
Bedrock 1.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, silty fine quartz sand, brown pale grey	2.0	2.0
Brickearth	Clay, sandy, silty fine quartz sand, pale yellow	1.1	3.1
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded black flint, occasional subrounded flint cobbles, traces fine well-rounded flint Sand: medium and coarse with some fine subangular quartz and flint light brown	2.3	5.4
Barton Clay	Clay, sandy, medium subrounded quartz in mottled green and dark grey clay, becoming mottled brown and grey; clayey sand below 5.8 m	1.6+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
40	60	0	2.0–3.1	40	51	8	1	0	0	0
6	21	73	3.1–4.1	9	8	11	10	38	24	0
			4.1–5.1	3	1	6	7	40	43	0
			5.1–5.4	2	4	10	7	41	36	0
			Mean	6	4	9	8	39	34	0

SU 10 SE 10 1747 0412 Crow Hill **Block D**

Surface level +56.6 m (185.5 ft)
Water not struck
Shell and Auger 152 mm diameter
September 1976

Overburden 0.2 m
Mineral 1.6 m
Bedrock 3.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown sandy loam with scattered fine subangular flints	0.2	0.2
River Terrace Deposits (8th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded black flint, traces subrounded sandstone and vein-quartz Sand: medium and coarse subangular to subrounded quartz and flint, silty, yellow	1.6	1.8
Barton Clay	Clay, brown and grey mottled, becoming brownish grey with orange-brown silty partings below 3.8 m. Ferruginous moulds of molluscan fossils at 4.9 m	3.7+	5.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
11	28	61	0.2–1.2	11	6	9	13	42	19	0
			1.2–1.8	11	4	11	14	42	18	0
			Mean	11	5	10	13	42	19	0

SU 10 SE 11 **1746 0229** **Park Hill** **Block D**

Surface level +36.3 m (+119 ft)
Water struck at +33.1 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.5 m
Mineral 4.9 m
Waste 3.1 m
Mineral 2.5 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam with scattered fine subangular flints, dark brown	0.5	0.5
River Terrace Deposits (6th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint Sand: fine to coarse subangular to subrounded quartz and flint, silty, orange	4.9	5.4
	Clay, silty, fine to medium subrounded quartz sand, yellow-orange, becoming firmer and more clayey between 7.0 m and 7.4 m	3.1	8.5
	Gravel Gravel: fine and coarse subangular patinated flint, traces fine well-rounded flint Sand: medium and coarse with some fine subangular to subrounded quartz and flint, light brown	2.5	11.0
Barton Clay	Clay, soft orange and grey mottled, becoming firm bluish grey clay	2.0+	13.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
12	32	56	0.5–1.5	13	8	14	12	34	19	0
			1.5–2.5	11	8	16	14	34	17	0
			2.5–3.5	9	6	16	15	38	16	0
			3.5–4.5	15	9	14	1	46	15	0
			4.5–5.4	13	12	6	8	39	22	0
			Mean	12	9	13	10	38	18	0
48	50	2	5.4–7.0	73	21	4	1	1	0	0
			7.0–7.4	clay band						
			7.4–8.5	12	27	58	1	2	0	0
			Mean	48	24	26	1	1	0	0
4	19	77	8.5–9.0	10	10	31	8	24	17	0
			9.0–10.0	3	1	4	9	36	47	0
			10.0–11.0	2	1	4	5	26	62	0
			Mean	4	3	9	7	30	47	0

SU 10 SE 12 1696 0104 Hain Hill **Block D**

Surface level +25.3 m (+83 ft)
Water not struck
Shell and Auger 152 mm diameter
March 1977

Waste 1.2 m
Bedrock 2.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, silty sand with scattered fine subangular flint, pale grey	0.7	0.7
River Terrace Deposits (5th Terrace)	'Clayey' gravel Gravel: fine to coarse subangular to subrounded flint Sand: fine and medium with coarse subangular quartz and flint	0.5	1.2
Barton Clay	Clay, silty, mottled orange and grey becoming firm greyish blue clay below 3.2 m. Band of fine subangular flint between 1.8 and 1.9 m	2.3+	3.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
14	39	47	0.7–1.2	14	11	20	8	30	17	0

SU 10 SE 13 1919 0125 Dur Hill Down **Block D**

Surface level +74.1 m (+243 ft)
Water not struck
Shell and Auger 152 mm diameter
August 1976

Waste 1.1 m
Bedrock 3.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, soft clayey silt with scattered fine patinated subangular flints	0.5	0.5
River Terrace Deposits (10th Terrace)	'Very clayey' sandy gravel Gravel: fine with coarse subangular to subrounded black flint, traces fine well-rounded flint and vein-quartz Sand: fine with medium and some coarse subangular quartz and flint, silty and clayey, dark brown becoming yellow below 0.9 m	0.6	1.1
Headon Beds	Clay, yellow and grey mottled clay with thin silty laminae becoming more sandy below 3.4 m	2.7	3.8
Barton Sand	'Very clayey' sand Sand: fine subrounded quartz, silty, yellow and buff becoming pale grey below 4.1 m	1.0+	4.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
41	59	0	0.0–0.5	41	49	7	3	0	0	0
29	46	25	0.5–1.1	29	28	12	6	16	9	0
25	75	0	1.1–3.8 3.8–4.8	clay 25	71	3	1	0	0	0

SU 10 SE 14 1866 0046 Whitefield Hill **Block D**

Surface level +72.7 m (+238.5 ft)
Water struck at +66.9 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.0 m
Mineral 3.0 m
Bedrock 2.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty clay with scattered fine subangular flints	0.5	0.5
Brickearth	Silty sand, fine subrounded quartz with traces fine subangular to subrounded flint, silty, yellow	0.5	1.0
River Terrace Deposits (10th Terrace)	'Very clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded vein-quartz and flint and subrounded sandstone Sand: medium and coarse with some fine subangular to subrounded quartz and flint, clayey matrix and thin silty partings; orange-brown and yellow	3.0	4.0
Headon Beds	Clay, pale grey and yellow, silty, becoming silty fine quartz sand below 6.1 m	2.8+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
45	43	12	0.5–1.0	45	33	6	4	10	2	0
27	30	43	1.0–2.0	21	6	17	10	30	16	0
			2.0–3.0	24	3	12	11	36	14	0
			3.0–4.0	37	3	15	11	16	18	0
			Mean	27	4	15	11	27	16	0
55	45	0	4.0–6.1	clay						
			6.1–6.8	55	43	1	1	0	0	0

SU 20 SW 1 2001 0329 Burley Hill **Block D**

Surface level +92.2 m (+302.5 ft)
Water not struck
Shell and Auger 152 mm diameter
July 1976

Mineral 3.7 m
Bedrock 3.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Older River Gravels	'Clayey' gravel Gravel: fine with some coarse subangular to subrounded flint, traces subrounded to well-rounded vein-quartz and sandstone Sand: medium with fine and coarse subangular to subrounded quartz and flint, orange-brown	3.7	3.7
Headon Beds	Clay, silty, laminated, yellow-grey and mottled orange and grey	3.3+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	38	47	0.0–0.5	13	6	16	12	38	15	0
			0.5–1.5	15	3	22	12	34	14	0
			1.5–2.2	18	5	21	14	30	12	0
			2.2–3.7	15	23	15	1	32	14	0
			Mean	15	12	18	8	33	14	0

SU 20 SW 2 **2095 0215** **Shappen Hill** **Block D**

Surface level +65.0 m (+213.5 ft)
Water struck at +59.7 m
Shell and Auger 152 mm diameter
August 1976

Overburden 0.6 m
Mineral 5.0 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, silty sand, grey-brown with fine subangular flint	0.6	0.6
River Terrace Deposits (9th Terrace)	'Clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces subrounded to well-rounded vein-quartz, flint and sandstone Sand: medium with coarse and fine subangular to subrounded quartz and flint, yellow-orange	5.0	5.6
Headon Beds	Clay, silty, yellow and grey	1.9	7.5
Barton Sand	Sand, silty, fine quartz, yellow becoming pale grey below 8.0 m	1.1+	8.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
27	65	8	0.0–0.6	27	37	23	5	7	1	0
11	56	33	0.6–0.9	14	15	25	8	25	13	0
			0.9–1.6	7	18	31	9	23	12	0
			1.6–2.6	7	17	47	9	14	6	0
			2.6–3.6	12	3	36	12	25	12	0
			3.6–4.6	16	5	19	19	33	8	0
			4.6–5.6	13	3	31	21	27	5	0
			Mean	11	9	33	14	24	9	0
43	57	0	5.6–7.5	clay						
			7.5–8.0	43	56	1	0	0	0	0

SU 20 SW 3 2146 0281 Nr Burley **Block D**

Surface level +70.3 m (+230.5 ft)
Water not struck
Shell and Auger 152 mm diameter
August 1976

Mineral 3.8 m
Waste 2.0 m
Mineral 2.4 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
River Terrace Deposits (9th Terrace)	'Very clayey' gravel Gravel: fine with some subangular to subrounded flint, traces subrounded to well-rounded vein-quartz and sandstone Sand: medium and fine with coarse subangular to subrounded quartz and flint, silty and clayey, yellow and grey; mottled yellow and grey silty clay between 2.5 m to 2.7 m	3.8	3.8
	Silt, sandy fine and medium quartz, with scattered fine subangular flint between 4.0 m and 4.9 m	2.0	5.8
	'Clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with fine and coarse subangular to subrounded quartz and flint, silty, buff and yellow	2.4	8.2
Barton Sand	'Clayey' sand Sand: fine well-rounded to subrounded quartz, buff, yellow and orange; thin silty clay laminae at 9.0 m, 9.6 m, 10.0 m and 10.4 m	3.0+	11.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
38	30	32	0.0–0.4	30	4	8	6	32	20	0
			0.4–1.4	39	5	10	9	29	8	0
			1.4–2.5	35	4	13	12	31	5	0
			2.5–2.7	clay band						
			2.7–3.3	54	29	12	2	3	0	0
			3.3–3.8	30	13	21	5	24	7	0
			Mean	38	10	12	8	25	7	0
56	42	2	3.8–4.0	46	31	20	2	1	0	0
			4.0–4.9	53	7	25	11	3	1	0
			4.9–5.4	53	34	12	1	0	0	0
			5.4–5.8	73	18	7	1	1	0	0
			Mean	56	18	18	6	2	0	0
13	62	25	5.8–6.2	35	14	37	6	8	0	0
			6.2–6.9	6	8	47	12	21	6	0
			6.9–7.2	6	15	72	3	3	1	0
			7.2–8.2	12	8	32	12	24	12	0
			Mean	13	10	42	10	18	7	0
16	84	0	8.2–9.2	19	79	1	1	0	0	0
			9.2–10.2	14	86	0	0	0	0	0
			10.2–11.2	16	83	1	0	0	0	0
			Mean	16	83	1	0	0	0	0

SU 20 SW 4 2175 0111 Holmsley Ridge **Block D**

Surface level +64.6 m (+212 ft)
Water struck at +59.4 m
Shell and Auger 152 mm diameter
August 1976

Overburden 0.5 m
Mineral 3.3 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam, grey, scattered fine subangular flint	0.5	0.5
River Terrace Deposits (9th Terrace)	'Clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces subrounded to well-rounded flint and vein-quartz Sand: medium with some coarse and fine subangular to subrounded quartz and flint; yellow, orange and brown	3.3	3.8
Headon Beds	'Clayey' sand Sand: fine subrounded to well-rounded quartz, silty, yellow and greenish yellow	3.0+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
16	56	28	0.5–1.0	28	11	24	10	23	4	0
			1.0–2.0	24	6	25	11	25	9	0
			2.0–3.0	8	9	61	8	12	2	0
			3.0–3.8	10	3	32	18	28	9	0
			Mean	16	7	38	11	22	6	0
13	87	0	3.8–4.8	16	82	1	1	0	0	0
			4.8–6.8	12	87	1	0	0	0	0
			Mean	13	86	1	0	0	0	0

SU 20 SW 5 2131 0015 Thorney Hill Holms **Block D**

Surface level +62.2 m (+204 ft)
Water struck at +59.4 m
Shell and Auger 152 mm diameter
August 1976

Overburden 0.1 m
Mineral 3.2 m
Bedrock 3.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty silt	0.1	0.1
River Terrace Deposits (9th Terrace)	'Very clayey' sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint and vein-quartz Sand: medium with some fine and coarse subangular to subrounded quartz and flint; silty, orange and yellow	3.2	3.3
Headon Beds	Clay, laminated, silty, yellow and brown	0.7	4.0
	Clay, silty, pale greyish green with abundant shells of *Corbicula* sp. between 5.1 m and 6.5 m	2.6+	6.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
26	46	28	0.1–0.4	30	24	29	6	11	0	0
			0.4–1.0	29	9	41	8	9	4	0
			1.0–2.0	17	15	40	7	13	8	0
			2.0–3.3	30	2	16	8	28	16	0
			Mean	26	9	30	7	18	10	0

SU 20 SW 6 2267 0259 Nr Holmehurst **Block D**

Surface level +64.9 (+213 ft)
Water struck at +62.4 m
Shell and Auger 152 mm diameter
April 1976

Overburden 0.5 m
Mineral 2.6 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam with scattered fine subangular flint	0.5	0.5
River Terrace Deposits (9th Terrace)	'Clayey' sandy gravel Gravel: fine and coarse subangular to subrounded flint, traces well-rounded flint Sand: medium with some coarse subangular to subrounded quartz and flint, orange	2.6	3.1
Headon Beds	Clay, silty yellow-brown becoming dark greyish green below 5.3 m	3.0+	6.1

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	52	33	0.5–1.4	25	5	25	13	21	11	0
			1.4–2.4	10	2	52	19	9	8	0
			2.4–3.1	9	2	24	6	20	35	4
			Mean	15	3	35	14	16	16	1

SU 20 SW 7 2276 0180 Goatspen Plain **Block D**

Surface level +63.2 m (+207.5 ft)
Water not struck
Shell and Auger 152 mm diameter
August 1976

Overburden 0.2 m
Mineral 3.6 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, scattered fine subangular flint	0.2	0.2
River Terrace Deposits (9th Terrace)	'Clayey' sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint and vein-quartz Sand: medium with some coarse and fine subangular to subrounded quartz and flint, silty, orange	3.6	3.8
Barton Sand	'Very clayey' sand Sand: fine subrounded to well-rounded quartz, yellow; firm silty clay between 5.6 m and 6.1 m	3.2+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
12	51	37	0.2–1.2	15	12	26	10	26	11	0
			1.2–2.2	12	4	28	14	29	13	0
			2.2–3.2	9	5	35	14	26	11	0
			3.2–3.8	11	6	42	11	21	9	0
			Mean	12	7	31	13	26	11	0
20	79	1	3.8–4.8	18	77	2	1	2	0	0
			4.8–5.6	29	70	1	0	0	0	0
			5.6–6.1	clay band						
			6.1–7.0	13	85	1	1	0	0	0
			Mean	20	77	2	0	1	0	0

SU 20 SW 8 **2009 0005** **Cross Ways** **Block D**

Surface level +74.9 m (+245.5 ft)
Water not struck
Shell and Auger 152 mm diameter
October 1976

Overburden 0.1 m
Mineral 1.5 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty loam, scattered fine subangular flint	0.1	0.1
River Terrace Deposits (10th Terrace)	'Clayey' gravel Gravel: fine with some coarse subangular to subrounded flint, traces well-rounded flint and vein-quartz Sand: medium with some coarse and fine subangular to subrounded quartz and flint, silty, orange	1.5	1.6
Headon Beds	Sand, silty, fine well-rounded to subrounded quartz, pale grey, with pale grey silty clay between 2.5 m and 3.9 m	3.0+	4.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
18	32	50	0.1–0.5	23	9	18	9	33	8	0
			0.5–1.6	16	4	17	10	34	19	0
			Mean	18	5	17	10	34	16	0
43	57	0	1.6–2.5	57	42	1	0	0	0	0
			2.5–3.9	clay band						
			3.9–4.6	25	73	1	1	0	0	0
			Mean	43	56	1	0	0	0	0

SZ 09 NE 1 **0744 9760** **Kinson Manor Farm** **Block F**

Surface level +8.9 m (+29 ft)
Water struck at +6.6 m
Shell and Auger 152 mm diameter
April 1977

Overburden 2.1 m
Mineral 2.0 m
Bedrock 2.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty clay, brown	0.1	0.1
Alluvium	Clay, silty, buff and grey mottled with fine subangular flints	2.0	2.1
River Terrace Deposits (1st Terrace)	Sandy gravel Gravel: coarse and fine subangular to subrounded flint, traces fine well-rounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, orange-brown	2.0	4.1
Bagshot Beds	'Clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, lignitic, greyish brown firm laminated silty clay from 4.5 m to 5.6 m	2.5+	6.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
3	52	45	2.1–3.1	2	2	14	6	31	45	0
			3.1–4.1	4	6	68	7	10	5	0
			Mean	3	4	41	7	20	25	0
13	87	0	4.1–4.5	11	46	42	1	0	0	0
			4.5–5.6	clay						
			5.6–6.6	14	58	27	1	0	0	0
			Mean	13	55	31	1	0	0	0

SZ 09 NE 2 0870 9736 Bramble's Farm **Block F**

Surface level +11.3 m (+37 ft)
Water struck at +9.8 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.2 m
Mineral 2.7 m
Bedrock 1.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown with scattered fine subangular flint	0.2	0.2
River Terrace Deposits (4th Terrace)	'Clayey' gravel Gravel: coarse and fine subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, yellow-brown	2.7	2.9
Bagshot Beds	Clay, silty laminated, grey, with fine sand partings	1.1+	4.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
13	27	60	0.2–1.2	26	14	21	4	22	13	0
			1.2–2.0	10	2	12	9	34	33	0
			2.0–2.9	1	2	10	4	24	59	0
			Mean	13	6	15	6	26	34	0

SZ 09 NE 3 0965 9830 Nr Barnes's Farm **Block F**

Surface level +11.0 m (+36 ft)
Water struck at +10.0 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.2 m
Mineral 4.5 m
Bedrock 8.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand	0.2	0.2
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with some coarse and fine subangular to subrounded quartz and flint, brown-grey	4.5	4.7
Bracklesham Beds	Clay, silty, laminated with fine quartz sand partings	1.3	6.0
	Sand Sand: medium with some fine subrounded to well-rounded quartz; thin laminated silty clay bands below 10.0 m	6.7+	12.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	33	63	0.2–1.0	20	21	21	7	21	10	0
			1.0–2.0	1	3	20	13	35	28	0
			2.0–3.0	1	2	14	6	31	46	0
			3.0–4.0	1	1	12	11	39	36	0
			4.0–4.7	1	1	27	10	37	24	0
			Mean	4	6	18	9	33	30	0
8	92	0	4.7–6.0	clay						
			6.0–7.0	16	41	42	1	0	0	0
			7.0–8.0	18	32	49	1	0	0	0
			8.0–9.0	5	4	89	2	0	0	0
			9.0–10.0	7	22	71	0	0	0	0
			10.0–11.0	3	6	90	1	0	0	0
			11.0–12.7	4	3	89	4	0	0	0
			Mean	8	17	73	2	0	0	0

SZ 09 NE 4 0962 9715 Parley Court **Block F**

Surface level +11.4 m (+37.5 ft)
Water struck at +8.5 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.2 m
Mineral 3.1 m
Bedrock 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam with fine subangular flint	0.2	0.2
River Terrace Deposits (4th Terrace)	'Clayey' gravel Gravel: coarse with fine subangular to subrounded flint Sand: medium with some coarse and fine subangular to subrounded quartz and flint, silty, brown	3.1	3.3
Bagshot Beds	Clay, silty, firm, olive-grey, with cementstone between 6.0 m and 6.2 m	4.0+	7.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
14	30	56	0.2–1.2	20	9	22	6	23	20	0
			1.2–2.2	15	2	17	8	24	34	0
			2.2–2.9	10	4	17	10	30	29	0
			2.9–3.3	4	1	10	9	32	44	0
			Mean	14	5	17	8	26	30	0

SZ 09 NE 5 0937 9629 Nr Parley Court **Block F**

Surface level +8.8 m (+29 ft)
Water struck at +6.9 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.9 m
Mineral 6.7 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, brown	0.1	0.1
Alluvium	Clay, sandy, mottled orange and brown	0.8	0.9
River Terrace Deposits (1st Terrace)	Gravel Gravel: coarse and fine subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with coarse and some fine subangular to subrounded quartz and flint, orange-brown	6.7	7.6
Bagshot Beds	'Very clayey' sand Sand: fine and medium subrounded to well-rounded quartz, silty, dark grey	3.0+	10.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	24	71	0.9–1.9	11	1	14	11	38	25	0
			1.9–2.9	3	0	16	12	35	34	0
			2.9–3.9	1	2	11	9	34	43	0
			3.9–4.9	3	1	14	13	53	16	0
			4.9–5.9	2	0	6	5	33	54	0
			5.9–6.9	2	3	4	5	27	59	0
			6.9–7.6	13	17	22	8	9	31	0
			Mean	5	3	12	9	33	38	0
38	62	0	7.6–8.6	37	28	27	8	0	0	0
			8.6–9.6	41	34	23	2	0	0	0
			9.6–10.6	37	33	29	1	0	0	0
			Mean	38	32	26	4	0	0	0

SZ 09 NE 6 0980 9554 Nr Castle Nursery **Block F**

Surface level +13.3 m (+43.5 ft)
Water struck at +9.2 m
Shell and Auger 152 mm diameter
September 1976

Overburden 0.9 m
Mineral 5.6 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, silty loam, brown with fine subangular flint	0.9	0.9
River Terrace Deposits (4th Terrace)	Sandy gravel Gravel: fine and coarse subangular to subrounded flint, with occasional subrounded flint cobbles; traces fine well-rounded flint Sand: medium with some coarse and fine quartz and flint, yellow	5.6	6.5
Bagshot Beds	Sand Sand: medium with fine subrounded to well-rounded quartz, lignitic, greyish yellow, becoming greyish brown below 7.5 m	2.0+	8.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	48	44	0.9–1.9	14	11	40	5	19	11	0
			1.9–2.9	7	6	56	9	17	5	0
			2.9–3.9	8	5	23	12	33	19	0
			3.9–4.9	10	15	26	11	23	15	0
			4.9–5.9	5	2	23	9	30	31	0
			5.9–6.5	2	1	21	5	23	41	7
			Mean	8	7	32	9	24	19	1
5	95	0	6.5–7.5	5	7	85	3	0	0	0
			7.5–8.5	5	36	57	2	0	0	0
			Mean	5	22	71	2	0	0	0

SZ 19 NW 1 **1083 9947** **East Parley Common** **Block F**

Surface level +11.6 m (+38 ft)
Water struck at +8.4 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.5 m
Mineral 3.6 m
Bedrock 5.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty loam	0.1	0.1
Brickearth	Pebbly sand Gravel: fine subangular to subrounded flint Sand: fine and medium subangular to subrounded quartz	0.4	0.5
River Terrace Deposits (4th Terrace)	Sandy gravel Gravel: fine with some coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with some fine and coarse subangular to subrounded quartz and flint, orange-yellow	3.6	4.1
Bagshot Beds	Sand Sand: medium with some fine subangular to subrounded quartz, with some flint; fine subangular flint pebbles from 6.6 to 8.6 m, light brown becoming dark greyish brown; thin silty clay laminae at intervals	5.5+	9.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	82	10	0.1–0.5	8	42	34	6	10	0	0
6	59	35	0.5–1.6	3	24	32	13	24	4	0
			1.6–2.3	10	14	33	12	28	3	0
			2.3–3.2	5	8	50	9	21	7	0
			3.2–4.1	7	4	22	15	37	15	0
			Mean	6	13	34	12	28	7	0
7	90	3	4.1–5.1	7	22	66	4	0	1	0
			5.1–6.1	8	31	57	4	0	0	0
			6.1–6.6	6	37	53	4	0	0	0
			6.6–7.6	7	24	56	5	6	2	0
			7.6–8.6	7	17	61	6	6	3	0
			8.6–9.6	7	30	61	2	0	0	0
			Mean	7	26	60	4	2	1	0

SZ 19 NW 2 1024 9836 Bournemouth (Hurn) Airport **Block F**

Surface level +11.2 m (+36.5 ft)
Water struck at +8.8 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.9 m
Mineral 2.9 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, ash and brick rubble	0.3	0.3
	Soil, sandy loam, peaty	0.1	0.4
Brickearth	'Very clayey' pebbly sand Gravel: fine subangular patinated flint Sand: fine and medium subangular to subrounded quartz, pale grey, silty	0.5	0.9
River Terrace Deposits (4th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded vein-quartz and sandstone, occasional subrounded flint cobbles below 2.9 m Sand: medium and coarse with some fine subangular to subrounded quartz and flint, brown-yellowish grey	2.9	3.8
Bracklesham Beds	Sand Sand: medium with some fine subrounded to well-rounded quartz, lignitic, greyish brown	3.0+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
21	72	7	0.4–0.9	21	43	26	3	4	3	0
10	38	52	0.9–1.9	15	14	21	8	28	14	0
			1.9–2.9	11	5	18	21	35	10	0
			2.9–3.8	4	1	13	11	42	29	0
			Mean	10	7	18	13	35	17	0
9	91	0	3.8–4.8	10	22	64	4	0	0	0
			4.8–5.8	8	6	84	2	0	0	0
			5.8–6.8	9	15	73	3	0	0	0
			Mean	9	14	74	3	0	0	0

SZ 19 NW 3 1024 9731 Parley Green **Block F**

Surface level +7.7 m (+25.5 ft)
Water struck at +7.0 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.1 m
Mineral 2.6 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown	0.1	0.1
River Terrace Deposits (2nd Terrace)	Sandy gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with some fine subangular to subrounded quartz and flint, light brown-orange	2.6	2.7
Bagshot Beds	Sand Sand: medium with some fine subrounded to well-rounded quartz, lignitic, greyish brown	3.0+	5.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	51	45	0.1–0.7	9	6	24	9	24	28	0
			0.7–1.7	1	8	16	6	40	29	0
			1.7–2.7	4	24	53	2	6	11	0
			Mean	4	14	31	6	23	22	0
8	92	0	2.7–3.7	7	25	68	0	0	0	0
			3.7–4.7	6	16	77	1	0	0	0
			4.7–5.7	12	18	68	2	0	0	0
			Mean	8	20	71	1	0	0	0

SZ 19 NW 4 **1046 9520** **Nr Castle Nursery** **Block F**

Surface level +12.4 m (+40.5 ft)
Water struck at +7.9 m
Shell and Auger 152 mm diameter
September 1976

Overburden 2.8 m
Mineral 2.0 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, sand and brick rubble	0.8	0.8
Brickearth	'Very clayey' sand Sand: fine with medium subangular to subrounded quartz and flint, silty, yellow, with thin grey clay laminae, traces fine subangular flint gravel	2.0	2.8
River Terrace Deposits (4th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: fine with medium subangular to subrounded quartz and flint, yellow-pale grey	2.0	4.8
Bagshot Beds	'Clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, yellow-pale grey	3.0+	7.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
35	62	3	0.8–1.8	30	35	26	3	3	3	0
			1.8–2.8	40	38	21	1	0	0	0
			Mean	35	36	24	2	2	1	0
9	44	47	2.8–3.8	10	13	22	10	28	17	0
			3.8–4.8	7	13	22	8	24	26	0
			Mean	9	13	22	9	26	21	0
13	87	0	4.8–5.8	14	55	30	1	0	0	0
			5.8–6.8	16	83	1	0	0	0	0
			6.8–7.8	8	77	15	0	0	0	0
			Mean	13	71	16	0	0	0	0

SZ 19 NW 5 1141 9902 Merritown Heath **Block F**

Surface level +10.7 m (+35 ft)
Water struck at +7.9 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.6 m
Mineral 5.1 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey, sandy	0.1	0.1
Brickearth	'Clayey' pebbly sand Gravel: fine subangular flint Sand: fine with medium and some coarse subangular to subrounded quartz and flint, silty, grey	0.5	0.6
River Terrace Deposits (3rd Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint, traces subrounded to well-rounded flint, vein-quartz and sandstone Sand: coarse with medium and fine subangular to subrounded quartz and flint, silty, yellow-brown	5.1	5.7
Bracklesham Beds	Sand Sand: medium with some fine subrounded to well-rounded quartz, lignitic, dark greyish brown	3.0+	8.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
15	69	16	0.1–0.6	15	37	23	9	13	3	0
10	42	48	0.6–1.6	14	17	23	13	29	4	0
			1.6–2.6	9	3	29	12	19	26	2
			2.6–3.6	6	0	28	13	19	34	0
			3.6–4.6	5	4	20	9	38	24	0
			4.6–5.7	14	2	33	7	32	12	0
			Mean	10	5	26	11	28	20	0
7	92	1	5.7–6.7	9	3	84	2	1	1	0
			6.7–7.7	6	14	78	2	0	0	0
			7.7–8.7	6	20	73	1	0	0	0
			Mean	7	12	79	1	1	0	0

SZ 19 NW 6 1183 9723 Nr West Hurn **Block F**

Surface level +11.0 m (+36 ft)
Water struck at +6.7 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.2 m
Mineral 2.2 m
Bedrock 2.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, light brown	1.2	1.2
River Terrace Deposits (?5th Terrace)	'Clayey' sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint Sand: medium with fine and some coarse subangular to subrounded quartz and flint, silty, yellow-orange	2.2	3.4
Bracklesham Beds	Clay, sandy, silty fine quartz sand	1.1	4.5
	Clay, silty, laminated, greyish brown	1.5+	6.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
14	44	42	1.2–2.4	18	19	24	6	20	13	0
			2.4–3.4	9	8	21	10	28	24	0
			Mean	14	14	23	7	24	18	0
75	24	1	3.4–4.5	75	23	1	0	1	0	0

SZ 19 NW 7 1170 9637 Nr Hurn Court Farm **Block F**

Surface level +5.3 m (+17.5 ft)
Water struck at +3.7 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.6 m
Mineral 4.5 m
Bedrock 1.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, clayey	0.1	0.1
Alluvium	Clay, silty, plastic, mottled orange and grey	1.5	1.6
River Terrace Deposits (1st Terrace)	Gravel Gravel: coarse with fine subangular to subrounded flint, traces fine well-rounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, orange-brown	4.5	6.1
Bagshot Beds	'Very clayey' sand Sand: medium and fine subrounded to well-rounded quartz, silty, thin laminated clay beds throughout, with a firm silty clay between 6.7 m and 6.9 m; lignitic, greyish brown	1.8+	7.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	31	64	1.6–2.7	9	3	10	8	36	34	0
			2.7–5.0	1	3	12	9	29	46	0
			5.0–5.3	1	11	11	7	29	41	0
			5.3–6.1	11	38	20	8	14	9	0
			Mean	5	10	13	8	28	36	0
30	70	0	6.1–7.9	30	32	36	2	0	0	0

SZ 19 NW 8 1154 9542 Nr Throop **Block F**

Surface level +10.7 m (+35 ft)
Water struck at +5.7 m
Shell and Auger 152 mm diameter
September 1976

Overburden 0.8 m
Mineral 4.4 m
Bedrock 2.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, brown with scattered fine subangular patinated flints	0.8	0.8
River Terrace Deposits (4th Terrace)	Sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with some fine and coarse subangular to subrounded quartz and flint, yellow-orange	4.4	5.2
Bagshot Beds	Clay, silty, laminated, grey, with fine orange quartz sand partings	0.8	6.0
	Sand Sand: medium with some fine subrounded to well-rounded quartz, yellow	2.0+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
9	56	35	0.8–1.2	20	17	25	6	20	12	0
			1.2–2.2	10	13	30	8	22	17	0
			2.2–3.2	13	7	29	9	27	15	0
			3.2–4.2	8	9	34	8	21	20	0
			4.2–5.2	2	13	60	4	11	10	0
			Mean	9	11	38	7	20	15	0
7	93	0	5.2–6.0	clay						
			6.0–7.1	7	12	80	1	0	0	0
			7.1–8.0	7	10	83	0	0	0	0
			Mean	7	11	82	0	0	0	0

SZ 19 NW 9 1202 9778 Nr Pussex Farm **Block F**

Surface level +9.7 m (+32 ft)
Water struck at +7.0 m
Shell and Auger 152 mm diameter
July 1976

Overburden 0.6 m
Mineral 4.7 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, brown scattered fine subangular flints	0.6	0.6
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with fine and coarse subangular to subrounded quartz and flint, grey-brown-yellow	4.7	5.3
Bracklesham Beds	'Very clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, greyish brown	3.0+	8.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	39	53	0.6–1.7	17	17	23	9	26	8	0
			1.7–2.7	9	6	21	15	36	13	0
			2.7–3.7	4	3	14	8	40	31	0
			3.7–4.7	2	2	17	10	43	26	0
			4.7–5.3	9	24	19	10	26	12	0
			Mean	8	10	19	10	35	18	0
22	78	0	5.3–6.3	12	74	11	3	0	0	0
			6.3–7.3	21	46	31	2	0	0	0
			7.3–8.3	32	25	42	1	0	0	0
			Mean	22	48	28	2	0	0	0

SZ 19 NW 10 1220 9612 Hurn Court **Block F**

Surface level +7.5 m (+24.5 ft)
Water struck at +3.9 m
Shell and Auger 152 mm diameter
April 1977

Overburden 0.2 m
Mineral 3.0 m
Bedrock 5.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown	0.2	0.2
River Terrace Deposits (3rd Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint, traces fine well-rounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, clayey, orange-brown	3.0	3.2
Bracklesham Beds	'Clayey' sand Sand: medium and fine subrounded to well-rounded quartz, silty, orange, becoming lignitic and greyish brown below 5.2 m	5.8+	9.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
19	37	44	0.2–1.2	20	7	21	8	28	16	0
			1.2–2.2	20	6	24	6	23	21	0
			2.2–3.2	16	9	23	7	22	23	0
			Mean	19	7	23	7	24	20	0
11	88	1	3.2–4.2	8	36	49	1	1	5	0
			4.2–5.2	11	54	35	0	0	0	0
			5.2–6.5	25	46	29	0	0	0	0
			6.5–8.0	4	27	66	3	0	0	0
			8.0–9.0	9	35	54	2	0	0	0
			Mean	11	39	48	1	0	1	0

SZ 19 NW 11 1282 9512 Holdenhurst Farm **Block F**

Surface level +4.8 m (+15.5 ft)
Water struck at +2.2 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.4 m
Mineral 2.4 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey loam, brown, scattered fine subangular flints	0.3	0.3
Brickearth	'Clayey' pebbly sand, sandy at base Gravel: fine with coarse subangular flint Sand: medium with some fine and traces of coarse subangular to subrounded quartz and flint, brown-yellow	1.1	1.4
River Terrace Deposits (2nd Terrace)	Gravel Gravel: coarse and fine subangular to subrounded flint, traces fine subrounded to well-rounded flint, and vein-quartz Sand: medium with fine and coarse subangular to subrounded quartz and flint, yellow-brown	2.4	3.8
Bracklesham Beds	Sand, fine to medium subrounded quartz, lignitic, greyish brown	0.2	4.0
	Clay, silty, laminated, greyish brown	2.8+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
17	69	14	0.3–1.0	23	23	28	5	13	8	0
			1.0–1.4	5	14	76	2	3	0	0
			Mean	17	19	45	5	9	5	0
8	36	56	1.4–2.6	8	5	22	8	31	26	0
			2.6–3.8	8	15	17	6	28	26	0
			Mean	8	10	19	7	30	26	0

SZ 19 NW 12 1343 9953 Week Common **Block C**

Surface level +8.6 m (+28 ft)
Water struck at +7.7 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.9 m
Mineral 5.9 m
Bedrock 2.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, light grey	0.2	0.2
Brickearth	'Very clayey' sand Sand: fine subangular to subrounded quartz, silty, grey-brown	0.7	0.9
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with fine and coarse subangular to subrounded quartz and flint, brown-grey	5.9	6.8
Bracklesham Beds	Sand Sand: medium with some fine subrounded to well-rounded quartz, lignitic, greyish brown	2.9+	9.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
27	73	0	0.2–0.9	27	58	15	0	0	0	0
4	43	53	0.9–1.9	3	8	22	7	29	31	0
			1.9–2.9	0	7	19	7	37	30	0
			2.9–3.9	2	6	35	8	27	22	0
			3.9–4.9	8	9	30	9	24	20	0
			4.9–5.9	3	5	33	8	26	25	0
			5.9–6.8	8	12	28	7	23	22	0
			Mean	4	8	28	7	28	25	0
4	95	1	6.8–7.7	5	23	67	1	2	2	0
			7.7–8.7	2	14	83	1	0	0	0
			8.7–9.7	4	12	84	0	0	0	0
			Mean	4	16	78	1	0	1	0

SZ 19 NW 13 1372 9836 Pithouse Farm **Block C**

Surface level +8.1 m (+26.5 ft)
Water struck at +7.1 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.1 m
Mineral 6.5 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, brown	0.1	0.1
River Terrace Deposits (1st Terrace)	Gravel Gravel: coarse and fine subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, brown	6.5	6.6
Bracklesham Beds	Sand Sand: medium with fine subrounded to well-rounded quartz, grey	3.0+	9.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
9	31	60	0.1–1.0	8	1	16	8	27	40	0
			1.0–2.0	5	9	35	9	32	10	0
			2.0–3.0	38	5	14	3	30	10	0
			3.0–4.0	1	8	16	3	24	48	0
			4.0–5.0	1	5	35	5	24	30	0
			5.0–6.0	1	2	5	5	31	56	0
			6.0–6.6	7	8	19	4	30	32	0
			Mean	9	5	20	6	28	32	0
3	97	0	6.6–7.6	4	25	70	1	0	0	0
			7.6–8.6	3	29	68	0	0	0	0
			8.6–9.6	2	27	71	0	0	0	0
			Mean	3	27	70	0	0	0	0

SZ 19 NW 14 **1401 9674** **Nr Ramsdown Plantation** **Block C**

Surface level +8.0 m (+26 ft)
Water struck at +4.0 m
Shell and Auger 152 mm diameter
April 1977

Overburden 1.0 m
Mineral 3.4 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Brickearth	'Clayey' sand Sand: fine with some medium subrounded quartz, silty, brown	1.0	1.0
River Terrace Deposits (2nd Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, silty, yellow-orange	3.4	4.4
Bracklesham Beds	'Clayey' sand Sand: fine with medium and some coarse subrounded quartz, silty, lignitic, dark grey	3.0+	7.4

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
12	88	0	0.0–1.0	12	69	18	1	0	0	0
10	36	54	1.0–2.0	14	12	16	8	32	18	0
			2.0–3.0	10	5	19	11	32	23	0
			3.0–4.0	8	3	24	9	35	21	0
			4.0–4.4	2	26	14	4	28	26	0
			Mean	10	9	19	8	33	21	0
10	90	0	4.4–5.2	4	61	32	2	1	0	0
			5.2–6.2	17	58	25	0	0	0	0
			6.2–7.4	8	73	18	1	0	0	0
			Mean	10	65	24	1	0	0	0

SZ 19 NW 15 1427 9941 Nr Avon Tyrell Farm **Block C**

Surface level +7.9 m (+26 ft)
Water struck at +6.7 m
Shell and Auger 152 mm diameter
September 1977

Overburden 1.2 m
Mineral 5.2 m
Bedrock 3.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty, silty	0.2	0.2
Alluvium	Peat, silty, with small gastropod shells	0.3	0.5
	Silt, very soft, clayey, light greenish grey	0.5	1.0
Peat	Peat, silty, dark brown	0.2	1.2
River Terrace Deposits (1st Terrace)	Gravel, sandy at base Gravel: coarse and fine subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with some coarse and fine subangular to subrounded quartz and flint, brown-grey	5.2	6.4
Bracklesham Beds	Clay, firm, silty, laminated, lignitic, dark grey-brown	1.2	7.6
	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, thin laminated silty clay bands throughout	2.3+	9.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
3	24	73	1.2–2.2	4	4	9	9	37	37	0
			2.2–3.2	0	3	8	5	30	54	0
			3.2–4.2	1	3	7	6	32	51	0
			4.2–5.2	1	3	19	8	33	36	0
			5.2–6.1	2	7	15	6	46	24	0
			6.1–6.4	17	26	33	4	11	9	0
			Mean	3	5	13	6	34	39	0
32	68	0	6.5–7.6	clay						
			7.6–8.6	34	63	3	0	0	0	0
			8.6–9.9	30	57	13	0	0	0	0
			Mean	32	59	9	0	0	0	0

SZ 19 NW 16 1492 9885 London Farm **Block B**

Surface level +13.7 m (+45 ft)
Water struck at +8.3 m
Shell and Auger 152 mm diameter
October 1977

Overburden 1.2 m
Mineral 4.1 m
Bedrock 4.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown	0.1	0.1
Brickearth	Clay, sandy, fine quartz sand, silty, yellow-orange	1.1	1.2
River Terrace Deposits (3rd Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint Sand: medium with coarse and some fine subangular to subrounded quartz and flint; silty, light brown	4.1	5.3
Bracklesham Beds	Sand Sand: fine and medium subrounded to well-rounded quartz, light brown	4.9+	10.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
49	50	1	0.1–1.2	49	33	16	1	1	0	0
11	29	60	1.2–2.2	12	4	15	15	40	14	0
			2.2–3.2	7	2	14	15	47	15	0
			3.2–4.2	8	3	13	11	34	31	0
			4.2–4.6	2	5	19	6	32	36	0
			4.6–5.3	23	3	12	6	26	30	0
			Mean	11	3	14	12	37	23	0
4	95	1	5.3–6.3	10	41	42	0	3	4	0
			6.3–7.3	3	52	45	0	0	0	0
			7.3–8.3	2	55	43	0	0	0	0
			8.3–9.3	3	60	37	0	0	0	0
			9.3–10.2	4	56	40	0	0	0	0
			Mean	4	53	42	0	0	1	0

SZ 19 NW 17 **1466 9767** **Avon Causeway** **Block C**

Surface level +6.3 m (+20.5 ft)
Water struck at +5.1 m
Shell and Auger 152 mm diameter
September 1977

Overburden 0.8 m
Mineral 3.1 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty loam, dark brown	0.1	0.1
Alluvium	Clay, silty, very soft, mottled orange and bluish green, fine subangular flint below 0.6 m	0.7	0.8
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, grey	3.1	3.9
Bracklesham Beds	'Clayey' sand Sand: medium and fine subrounded to well-rounded quartz, silty, lignitic, greyish brown; thin laminated silty clay from 5.5 m to 5.6 m	3.2+	7.1

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	46	48	0.8–1.8	7	14	13	8	30	28	0
			1.8–2.9	2	16	29	7	24	22	0
			2.9–3.9	8	8	38	7	20	19	0
			Mean	6	12	27	7	25	23	0
10	90	0	3.9–4.9	11	35	53	1	0	0	0
			4.9–5.9	10	43	47	0	0	0	0
			5.9–7.1	8	52	40	0	0	0	0
			Mean	10	43	47	0	0	0	0

SZ 19 NW 18 **1494 9593** **Dudmoor Farm** **Block C**

Surface level +5.4 m (+17.5 ft)
Water stuck at +4.2 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.0 m
Mineral 3.5 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, fine and medium quartz sand, grey-brown	0.5	0.5
Brickearth	Pebbly sand Gravel: fine subangular flint, traces fine subrounded vein-quartz Sand: fine with medium subrounded to subangular quartz, brown	0.5	1.0
River Terrace Deposits (1st Terrace)	Gravel Gravel: coarse with fine subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with fine and some coarse subangular to subrounded quartz and flint, yellow-grey	3.5	4.5
Bracklesham Beds	'Clayey' sand Sand: fine with medium subrounded to well-rounded quartz, lignitic, greyish brown	3.0+	7.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
9	79	12	0.0–0.5	8	46	30	2	7	7	0
			0.5–1.0	9	55	23	2	8	3	0
			Mean	9	50	27	2	7	5	0
4	34	62	1.0–2.0	1	8	15	8	32	36	0
			2.0–3.0	6	9	23	4	31	27	0
			3.0–4.0	2	6	12	5	33	42	0
			4.0–4.5	11	44	9	4	12	20	0
			Mean	4	13	16	5	29	33	0
10	90	0	4.5–5.5	7	57	34	2	0	0	0
			5.5–6.5	4	48	47	1	0	0	0
			6.5–7.5	19	48	32	1	0	0	0
			Mean	10	51	38	1	0	0	0

SZ 19 NW 19 1346 9532 Nr Wood Farm **Block F**

Surface level +3.4 m (+11 ft)
Water struck at +1.5 m
Shell and Auger 152 mm diameter
August 1976

Overburden 0.8 m
Mineral 4.8 m
Bedrock 2.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam, yellow-green, scattered fine subangular flints	0.3	0.3
Alluvium	Clay, silty, mottled greyish green and orange	0.5	0.8
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint and vein-quartz Sand: medium with coarse and some fine subangular to subrounded quartz and flint, orange-grey	4.8	5.6
Bracklesham Beds	Clay, silty, laminated, greyish green	2.4+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
7	34	59	0.8–1.8	12	3	25	9	33	18	0
			1.8–2.8	5	1	15	11	37	31	0
			2.8–3.8	5	1	19	13	40	22	0
			3.8–4.8	5	2	15	11	47	20	0
			4.8–5.6	8	31	9	8	27	17	0
			Mean	7	7	17	10	37	22	0

SZ 19 NE 2 **1550 9964** **Anna Lane** **Block A**

Surface level +13.6 m (+44.5 ft)
Water struck at +8.5 m
Shell and Auger 152 mm diameter
September 1977

Overburden 1.3 m
Mineral 2.1 m
Bedrock 4.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, brown with scattered fine subangular flints	0.3	0.3
Brickearth	Clay, sandy, silty, fine quartz, light brown	1.0	1.3
River Terrace Deposits (4th Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with coarse subangular to subrounded quartz and flint, silty, orange-yellow	2.1	3.4
Bracklesham Beds	Clay, firm, silty, dark grey	1.7	5.1
	Sand Sand: medium with fine subrounded to well-rounded quartz, brownish grey, lignitic, becoming orange-brown below 6.8 m. Mudstone band between 7.4 m and 7.5 m	2.9+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
46	52	2	0.3–1.3	46	40	11	1	0	2	0
16	28	56	1.3–2.3	24	4	15	8	24	25	0
			2.3–3.4	9	4	14	11	34	28	0
			Mean	16	4	15	9	29	27	0
9	90	1	3.4–5.1	clay						
			5.1–6.1	10	29	58	3	0	0	0
			6.1–7.1	6	34	59	1	0	0	0
			7.1–8.0	10	30	56	2	2	0	0
			Mean	9	31	57	2	1	0	0

SZ 19 NE 3 1548 9849 Nr South Ripley Farm **Block B**

Surface +12.1 m (+39.5 ft)
Water struck at +9.1 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.7 m
Mineral 3.5 m
Bedrock 4.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown	0.2	0.2
Brickearth	'Very clayey' pebbly sand Sand: fine with medium subangular to subrounded quartz, silty, dark brown Gravel: fine subangular flint	0.5	0.7
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with coarse and some fine subangular to subrounded quartz, orange-brown	3.5	4.2
Bracklesham Beds	Clay, silty, laminated, with fine quartz partings, greyish brown	1.8	6.0
	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, lignitic, dark greyish brown. Thin laminated clay beds at intervals	3.0+	9.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
34	52	14	0.5–0.7	34	32	17	3	10	4	0
7	31	62	0.7–1.7	12	4	17	8	31	28	0
			1.7–3.0	7	4	16	12	37	24	0
			3.0–4.2	3	6	13	12	36	30	0
			Mean	7	5	15	11	35	27	0
27	73	0	4.2–6.0	clay						
			6.0–7.0	27	65	7	1	0	0	0
			7.0–8.0	25	66	9	0	0	0	0
			8.0–9.0	28	64	7	1	0	0	0
			Mean	27	65	7	1	0	0	0

SZ 19 NE 4 1552 9776 Nr Court Farm **Block B**

Surface level +11.7 m (+38.5 ft)
Water struck at +8.0 m
Shell and Auger 152 mm diameter
October 1977

Overburden 1.0 m
Mineral 3.4 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown	0.1	0.1
Brickearth	Silt, sandy, fine quartz with scattered fine subangular flint	0.9	1.0
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint Sand: medium and coarse with some fine subangular to subrounded quartz and flint, yellow-orange	3.4	4.4
Bracklesham Beds	Sand Sand: fine with some medium subrounded to well-rounded quartz, very lignitic, dark brownish grey	3.0+	7.4

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
42	53	5	0.1–1.0	42	31	20	2	2	3	0
8	38	54	1.0–2.0	10	12	10	10	36	22	0
			2.0–3.0	10	3	22	12	36	17	0
			3.0–3.7	6	5	14	16	41	18	0
			3.7–4.4	5	13	20	19	24	19	0
			Mean	8	8	17	13	35	19	0
5	95	0	4.4–5.4	7	73	19	1	0	0	0
			5.4–6.4	2	83	15	0	0	0	0
			6.4–7.4	5	75	20	0	0	0	0
			Mean	5	77	18	0	0	0	0

SZ 19 NE 5 1529 9657 Nr Sopley **Block C**

Surface level +4.8 m (+15.5 ft)
Water struck at +4.2 m
Shell and Auger 152 mm diameter
September 1977

Overburden 0.6 m
Mineral 3.3 m
Bedrock 4.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty loam, dark brown	0.2	0.2
Alluvium	Clay, sandy, soft, silty, mottled orange and grey	0.4	0.6
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with some coarse and fine subangular to subrounded quartz and flint, orange-brown	3.3	3.9
Bracklesham Beds	Clay, silty, laminated, brownish grey with fine quartz sand partings	1.6	5.5
	'Clayey' sand Sand: fine with medium subrounded to well-rounded quartz, silty, dark brownish grey	2.5+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
4	35	61	0.6–1.6	7	3	19	12	34	25	0
			1.6–2.6	2	4	21	6	30	37	0
			2.6–3.6	0	6	23	9	38	24	0
			3.6–3.9	8	5	31	9	30	17	0
			Mean	4	4	22	9	33	28	0
11	89	0	3.9–5.5	clay						
			5.5–7.0	13	54	33	0	0	0	0
			7.0–8.0	8	67	25	0	0	0	0
			Mean	11	59	30	0	0	0	0

SZ 19 NE 6 1551 9545 Nr Coward's Marsh **Block C**

Surface level +3.9 m (+13 ft)
Water struck at +2.4 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.0 m
Mineral 4.0 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand	0.2	0.2
Alluvium	'Clayey' pebbly sand Gravel: fine with some coarse subangular to subrounded flint Sand: fine with some medium quartz, silty, brown	0.8	1.0
River Terrace Deposits (1st Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces subrounded to well-rounded fine flint, vein-quartz and sandstone Sand: fine with some medium and coarse subangular to subrounded quartz and flint, yellow-grey	4.0	5.0
Bracklesham Beds	'Clayey' sand Sand: fine well-rounded to subrounded quartz, lignitic, greyish brown; thin grey clay laminae	3.0+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
13	75	12	0.2–1.0	13	46	27	2	7	5	0
9	42	49	1.0–2.0	6	3	30	9	33	19	0
			2.0–3.0	2	5	10	7	30	46	0
			3.0–3.8	9	18	11	6	22	34	0
			3.8–5.0	18	58	3	1	5	15	0
			Mean	9	26	10	6	22	27	0
18	82	0	5.0–6.2	18	79	2	1	0	0	0
			6.2–7.0	20	78	1	1	0	0	0
			7.0–8.0	17	82	1	0	0	0	0
			Mean	18	80	1	1	0	0	0

SZ 19 NE 7 1662 9931 Nr North Ripley **Block A**

Surface level +15.2 m (+50 ft)
Water struck at +10.6 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.8 m
Mineral 6.6 m
Bedrock 2.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown	0.2	0.2
Brickearth	'Very clayey' pebbly sand Sand: fine subangular to subrounded quartz, silty, orange-brown Gravel: fine subangular flint	0.6	0.8
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, yellow-brown	6.6	7.4
Bracklesham Beds	'Clayey' sand Sand: fine and medium subrounded to well-rounded quartz, silty, lignitic, greyish brown, with scattered fine patinated subangular flint	2.6+	10.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
39	54	7	0.2–0.8	39	42	11	1	4	3	0
9	36	55	0.8–1.8	21	4	18	11	35	11	0
			1.8–2.8	8	4	15	13	36	24	0
			2.8–3.8	7	5	13	16	38	21	0
			3.8–4.6	8	10	26	15	34	7	0
			4.6–5.6	1	1	7	4	18	69	0
			5.6–6.4	1	2	10	6	32	49	0
			6.4–7.4	13	23	49	3	6	6	0
			Mean	9	7	20	9	28	27	0
10	87	3	7.4–8.4	9	45	39	3	3	1	0
			8.4–9.4	11	45	40	1	3	0	0
			9.4–10.0	10	54	32	1	1	2	0
			Mean	10	47	38	2	2	1	0

SZ 19 NE 8 1671 9841 Nr Ripley **Block B**

Surface level +13.1 m (+43 ft)
Water struck at +11.4 m
Shell and Auger 152 mm diameter
September 1977

Overburden 0.9 m
Mineral 7.8 m
Bedrock 7.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown	0.1	0.1
Brickearth	Clay, sandy, silty fine quartz, brown	0.8	0.9
River Terrace Deposits (?2nd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium and coarse subangular to subrounded quartz and flint, orange	7.8	8.7
Bracklesham Beds	Sandy gravel Gravel: coarse with fine subangular to subrounded flint, occasional subrounded flint cobbles Sand: medium with some fine and coarse subangular to subrounded quartz and flint, orange	3.6	12.3
	Sand Sand: medium with some fine and coarse subangular to subrounded quartz, lignitic, greyish brown; thin laminated clay from 14.6 m to 14.8 m	3.5+	15.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
41	51	8	0.1–0.9	41	36	13	2	3	5	0
4	21	75	0.9–1.9	10	4	20	11	34	21	0
			1.9–2.9	4	4	17	15	39	21	0
			2.9–3.7	1	3	10	12	40	34	0
			3.7–4.7	2	1	6	5	38	48	0
			4.7–5.7	4	1	10	11	46	28	0
			5.7–6.7	2	1	2	6	40	49	0
			6.7–7.7	3	1	4	6	33	53	0
			7.7–8.7	7	3	10	2	32	46	0
			Mean	4	2	10	9	37	38	0
3	68	29	8.7–9.2	5	8	47	6	9	25	0
			9.2–10.2	2	8	56	8	12	14	0
			10.2–11.3	2	7	49	6	17	19	0
			11.3–12.3	4	13	54	7	10	12	0
			Mean	3	9	52	7	13	16	0
7	93	0	12.3–13.8	7	6	83	4	0	0	0
			13.8–14.8	8	4	81	7	0	0	0
			14.8–15.8	5	4	86	5	0	0	0
			Mean	7	5	83	5	0	0	0

SZ 19 NE 9 1632 9723 Nr Clapcott's Farm **Block B**

Surface level +12.5 m (+41 ft)
Water struck at +9.2 m
Shell and Auger 152 mm diameter
September 1977

Overburden 0.8 m
Mineral 3.7 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown with scattered fine subangular flint	0.2	0.2
Brickearth	'Very clayey' pebbly sand Gravel: fine subangular flint Sand: fine with some medium subangular to subrounded quartz, brown	0.6	0.8
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with coarse subangular to subrounded quartz and flint, brown	3.7	4.5
Bracklesham Beds	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, brownish grey; laminated clay bed from 4.5 m to 4.9 m	3.2+	7.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
36	52	12	0.2–0.8	36	34	15	3	6	6	0
8	33	59	0.8–1.6	10	5	24	9	35	17	0
			1.6–2.6	12	5	21	9	31	22	0
			2.6–3.5	4	3	24	12	31	26	0
			3.5–4.5	4	2	15	8	41	30	0
			Mean	8	3	21	9	35	24	0
27	72	1	4.5–5.5	33	47	15	2	2	1	0
			5.5–6.5	21	64	14	1	0	0	0
			6.5–7.7	26	58	16	0	0	0	0
			Mean	27	56	15	1	1	0	0

SZ 19 NE 10 **1637 9644** **Nr Winkton** **Block B**

Surface level +10.8 m (+35.5 ft)
Water struck at +7.5 m
Shell and Auger 152 mm diameter
September 1977

Overburden 1.2 m
Mineral 6.0 m
Bedrock 3.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown	0.2	0.2
Brickearth	Clay, sandy, fine and medium quartz, silty	1.0	1.2
River Terrace Deposits (2nd Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, traces subrounded sandstone Sand: medium with coarse and some fine subangular to subrounded quartz and flint, orange-brown	6.0	7.2
Bracklesham Beds	'Clayey' sand Sand: fine and medium subrounded to well-rounded quartz, silty, lignitic, greyish brown; thin laminated clay beds at 7.2 m, and below 9.5 m	3.1+	10.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
41	53	6	0.2–1.2	41	31	20	2	4	2	0
7	32	61	1.2–2.2	16	4	18	10	37	15	0
			2.2–3.3	2	4	20	18	38	18	0
			3.3–4.3	10	3	7	11	48	21	0
			4.3–5.3	7	1	4	6	42	40	0
			5.3–6.3	2	5	24	8	34	27	0
			6.3–7.2	5	24	21	2	21	27	0
			Mean	7	7	15	10	37	24	0
10	90	0	7.2–8.2	3	44	52	1	0	0	0
			8.2–9.2	7	50	43	0	0	0	0
			9.2–10.3	18	53	28	1	0	0	0
			Mean	10	49	40	1	0	0	0

SZ 19 NE 11 1672 9528 Nr Burton Hall **Block B**

Surface level +9.4 m (+31 ft)
Water struck at +6.1 m
Shell and Auger 152 mm diameter
March 1977

Overburden 2.1 m
Mineral 2.9 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam with scattered fine subangular flint	0.9	0.9
Brickearth	Clay, sandy, fine and medium quartz, silty, yellow-orange, with scattered fine subangular flint	1.2	2.1
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded quartz and flint, traces fine well-rounded flint, occasional subrounded flint cobbles Sand: medium and coarse with some fine subangular to subrounded quartz and flint, yellow-brown	2.9	5.0
Bracklesham Beds	Clay, silty, laminated dark bluish grey	0.2	5.2
	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, lignitic, greyish brown	3.0+	8.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
53	43	4	0.9–2.1	53	27	14	2	2	2	0
6	24	70	2.1–3.1	8	8	22	10	42	10	0
			3.1–4.1	3	2	5	8	39	43	0
			4.1–5.0	6	4	5	7	32	46	0
			Mean	6	4	11	9	37	33	0
20	80	0	5.0–5.2	clay						
			5.2–6.2	12	81	5	1	0	1	0
			6.2–7.2	19	66	14	1	0	0	0
			7.2–8.2	30	62	8	0	0	0	0
			Mean	20	70	9	1	0	0	0

SZ 19 NE 12 1752 9975 Nr Whistler's Copse **Block D**

Surface level +25.3 m (+83 ft)
Water struck at +23.1 m
Shell and Auger 152 mm diameter
October 1977

Overburden 0.7 m
Mineral 2.3 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sand, dark brown	0.2	0.2
Brickearth	Clay, sandy, fine quartz sand, brown	0.5	0.7
River Terrace Deposits (5th Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint, subrounded flint cobbles at 3.0 m Sand: medium with coarse subangular to subrounded quartz and flint, silty, yellow	2.3	3.0
Barton Clay	Clay, firm, silty, mottled orange and yellow becoming light bluish grey below 3.4 m	2.0+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
51	40	9	0.2–0.7	51	28	9	3	9	0	0
10	34	56	0.7–1.7	15	1	10	10	30	34	0
			1.7–2.2	13	4	24	23	30	6	0
			2.2–3.0	3	5	24	10	27	31	0
			Mean	10	3	18	13	29	27	0

SZ 19 NE 13 1763 9851 Nr Elmer's Copse **Block B**

Surface level +17.4 m (+57 ft)
Water struck at +12.7 m
Shell and Auger 152 mm diameter
September 1977

Overburden 0.7 m
Mineral 7.8 m
Bedrock 6.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, dark brown with scattered fine subangular flint	0.2	0.2
Brickearth	Clay, silty, mottled orange and grey with scattered fine subangular flint	0.5	0.7
River Terrace Deposits (3rd Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint, subrounded cobbles of flint below 6.7 m Sand: medium with some coarse and fine subangular to subrounded quartz and flint, silty, orange-brown	7.8	8.5
Bracklesham Beds	Sand Sand: medium with fine subrounded to well-rounded quartz, lignitic, greyish brown, with thin laminated clay beds below 13.8 m	6.0+	14.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
12	36	52	0.7–1.7	17	4	14	13	36	16	0
			1.7–2.7	21	4	18	12	36	9	0
			2.7–3.6	29	9	23	7	29	3	0
			3.6–4.6	13	15	27	6	29	10	0
			4.6–5.6	2	7	26	11	37	17	0
			5.6–6.7	6	5	33	13	30	13	0
			6.7–7.7	2	1	5	5	35	52	0
			7.7–8.5	3	1	25	6	30	35	0
			Mean	12	5	22	9	33	19	0
3	97	0	8.5–9.5	1	4	95	0	0	0	0
			9.5–10.5	1	6	93	0	0	0	0
			10.5–11.5	2	13	85	0	0	0	0
			11.5–12.5	2	35	63	0	0	0	0
			12.5–13.5	2	34	64	0	0	0	0
			13.5–14.5	7	33	60	0	0	0	0
			Mean	3	20	77	0	0	0	0

SZ 19 NE 14 1786 9730 North Bockhampton **Block B**

Surface level +14.9 m (+49 ft)
Water struck at +10.5 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.5 m
Mineral 2.2 m
Waste 1.6 m
Mineral 6.2 m
Bedrock 3.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown, with scattered fine subangular flint	0.5	0.5
River Terrace Deposits (2nd Terrace)	'Clayey' gravel Gravel: fine with some coarse subangular patinated flint Sand: medium and coarse with fine subangular to subrounded quartz and flint, orange-brown	2.2	2.7
	Clay, sandy, fine and medium quartz sand, silty with scattered fine subangular flint	1.6	4.3
	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles below 9.3 m Sand: medium with some coarse and fine subangular to subrounded quartz and flint, grey-brown	6.2	10.5
Bracklesham Beds	Pebbly sand Gravel: fine, angular to subangular patinated flint Sand: medium with fine and some coarse subangular to subrounded quartz, lignitic, greyish brown	3.5+	14.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
14	36	50	0.5–1.5	12	10	13	12	33	20	0
			1.5–2.7	15	9	14	14	36	12	0
			Mean	14	9	14	13	35	15	0
48	31	21	2.7–4.3	48	19	8	4	12	9	0
4	32	64	4.3–5.3	2	7	23	10	33	25	0
			5.3–6.3	6	6	21	8	28	31	0
			6.3–7.3	2	1	5	10	45	37	0
			7.3–8.3	2	3	6	14	44	31	0
			8.3–9.3	4	8	22	4	24	38	0
			9.3–10.5	5	9	34	4	18	30	0
			Mean	4	5	19	8	32	32	0
6	83	11	10.5–11.5	8	17	65	9	1	0	0
			11.5–12.5	7	23	55	5	6	4	0
			12.5–14.0	4	18	56	3	11	8	0
			Mean	6	19	58	6	6	5	0

SZ 19 NE 15 1745 9664 Middle Bockhampton **Block B**

Surface level +11.5 m (+37.5 ft)
Water struck at +9.5 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.7 m
Mineral 6.9 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, silty, dark brown	0.7	0.7
River Terrace Deposits (2nd Terrace)	Gravel Gravel: coarse and fine subangular to subrounded flint, traces fine well-rounded flint, occasional subrounded flint cobbles Sand: medium with some fine and coarse subangular to subrounded quartz and flint, orange-brown	6.9	7.6
Bracklesham Beds	'Very clayey' sand Sand: fine with some medium subrounded to well-rounded quartz, silty, lignitic, greyish brown	3.0+	10.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	30	65	0.7–1.7	11	8	21	11	38	11	0
			1.7–2.7	4	6	18	9	35	28	0
			2.7–3.7	2	3	19	6	23	47	0
			3.7–4.7	8	3	6	4	23	56	0
			4.7–5.7	1	1	7	5	27	59	0
			5.7–6.7	5	6	30	4	19	36	0
			6.7–7.2	8	11	23	6	21	31	0
			7.2–7.6	2	28	9	3	13	45	0
			Mean	5	7	16	7	26	39	0
21	78	1	7.6–8.6	13	66	18	1	1	1	0
			8.6–9.6	20	71	8	1	0	0	0
			9.6–10.6	29	65	6	0	0	0	0
			Mean	21	67	11	0	1	0	0

SZ 19 NE 16 1741 9528 Nr Burton Hall **Block B**

Surface level +10.0 m (+33 ft)
Watr struck at +8.3 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.5 m
Mineral 5.1 m
Bedrock 1.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, silty, dark brown	0.5	0.5
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces fine subrounded to well-rounded flint and sandstone Sand: medium with some fine and coarse subangular to subrounded quartz and flint, brown	5.1	5.6
Bracklesham Beds	Sand Sand: fine and medium subrounded to well-rounded quartz, orange, becoming lignitic, brown below 6.8 m	1.8+	7.4

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	38	56	0.5–1.7	21	15	20	6	24	14	0
			1.7–2.7	2	2	10	10	39	37	0
			2.7–3.7	0	4	17	6	37	36	0
			3.7–4.7	2	3	29	5	23	38	0
			4.7–5.6	3	29	34	3	6	25	0
			Mean	6	11	21	6	27	29	0
6	94	0	5.6–6.6	4	50	46	0	0	0	0
			6.6–7.4	9	50	40	1	0	0	0
			Mean	6	50	44	0	0	0	0

SZ 19 NE 17 1853 9766 Bransgore **Block D**

Surface level +23.5 m (+77 ft)
Water struck at +20.9 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.6 m
Mineral 2.3 m
Bedrock 1.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, silty sand, brown	0.6	0.6
River Terrace Deposits (5th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint Sand: medium and coarse subangular to subrounded quartz and flint, silty, light brown	2.3	2.9
Barton Clay	Clay, sandy, fine to medium quartz in orange-brown clay matrix, becoming bright green and brown mottled	1.4+	4.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
11	35	54	0.6–1.6	13	4	15	12	34	22	0
			1.6–2.6	11	4	18	17	36	14	0
			2.6–2.9	7	4	16	15	30	28	0
			Mean	11	4	17	14	35	19	0

SZ 19 NE 18 1905 9685 Nr Godwinscroft **Block E**

Surface level +25.5 m (+83.5 ft)
Water struck at +24.0 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.5 m
Mineral 4.4 m
Bedrock 1.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy loam, brown with scattered fine subangular flint	0.5	0.5
River Terrace Deposits (5th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint and sandstone, occasional subrounded flint cobbles below 3.5 m	4.4	4.9
Barton Clay	Clay, sandy, orange-brown, becoming mottled grey and bright green below 6.2 m	1.9+	6.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	36	58	0.5–1.5	13	7	17	14	32	17	0
			1.5–2.5	7	7	22	15	26	23	0
			2.5–3.5	1	4	25	5	25	40	0
			3.5–4.5	3	4	22	5	30	36	0
			4.5–4.9	2	3	18	12	33	32	0
			Mean	6	5	21	10	29	29	0

SZ 19 NE 19 1823 9565 Waterditch Farm **Block B**

Surface level +10.6 m (+35 ft)
Water struck at +10.0 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.6 m
Mineral 5.1 m
Bedrock 5.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, sandy loam, dark brown	0.6	0.6
River Terrace Deposits (3rd Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint and sandstone Sand: medium with coarse subangular to subrounded quartz and flint, brown	5.1	5.7
Bracklesham Beds	Sand Sand: medium with fine subrounded to subangular quartz, orange changing to greyish brown below 8.7 m	5.3+	11.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
3	25	72	0.6–1.6	3	2	12	11	40	32	0
			1.6–2.6	3	3	21	7	37	29	0
			2.6–3.6	4	2	10	8	33	43	0
			3.6–4.6	1	4	11	4	35	45	0
			4.6–5.7	2	3	19	7	35	34	0
			Mean	3	2	15	8	36	36	0
6	94	0	5.7–6.6	3	8	87	2	0	0	0
			6.6–7.6	4	9	86	1	0	0	0
			7.6–8.7	1	7	92	0	0	0	0
			8.7–9.6	9	19	71	1	0	0	0
			9.6–11.0	13	43	43	1	0	0	0
			Mean	6	20	73	1	0	0	0

SZ 19 NE 20 1961 9814 Bransgore House **Block D**

Surface level +51.1 m (+167.5 ft)
Water not struck
Shell and Auger 152 mm diameter
August 1976

Overburden 0.3 m
Mineral 3.3 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam, brown with scattered fine subangular flints	0.3	0.3
River Terrace Deposits (8th Terrace)	'Very clayey' sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded flint and vein-quartz Sand: medium with fine and coarse subangular to subrounded quartz and flint, clayey and silty, yellow-orange	3.3	3.6
Barton Sand	'Very clayey' sand Sand: fine subrounded to well-rounded quartz, silty, yellow	3.0+	6.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
20	44	36	0.3–1.3	21	12	18	11	20	18	0
			1.3–2.4	18	6	25	13	26	12	0
			2.4–3.6	21	14	25	8	23	9	0
			Mean	20	11	23	10	23	13	0
22	77	1	3.6–4.6	16	77	3	2	2	0	0
			4.6–5.6	23	74	1	2	0	0	
			5.6–6.6	26	73	1	0	0	0	0
			Mean	22	74	2	1	1	0	0

SZ 19 NE 21 1952 9627 Nr Allensworth Wood Block E

Surface level +24.8 m (+81.5 ft)
Water struck at +22.2 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.3 m
Mineral 4.6 m
Bedrock 3.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty sand, dark brown	0.3	0.3
River Terrace Deposits (5th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces fine well-rounded black flint, subrounded flint cobbles below 4.4 m Sand: medium with some fine and coarse subangular to subrounded quartz and flint, brown	4.6	4.9
Barton Clay	Clay, sandy, fine to medium quartz in mottled orange and green clay, becoming mottled brown and green below 5.4 m; brown silty sand between 7.3 m and 7.7 m	3.1+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
5	34	61	0.3–1.3	6	9	25	7	29	14	0
			1.3–2.6	2	3	17	6	32	40	0
			2.6–3.6	4	4	17	8	39	28	0
			3.6–4.6	9	3	23	5	25	35	0
			4.6–4.9	5	5	23	4	20	43	0
			Mean	5	5	22	7	30	31	0

SZ 19 NE 22 **1944 9522** **Burton Common** **Block E**

Surface level +23.1 m (+76 ft)
Water struck at +20.1 m
Shell and Auger 152 mm diameter
March 1977

Mineral 3.9 m
Bedrock 2.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
River Terrace Deposits (5th Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded cobbles below 3.0 m Sand: medium with some fine and coarse subangular to subrounded quartz and flint, silty, yellow-orange	3.9	3.9
Barton Clay	Clay, sandy, fine to medium quartz in mottled green and brown clay matrix; becoming silty fine sand below 5.4 m	2.1+	6.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
13	32	55	0.0–1.0	6	7	25	7	29	26	0
			1.0–2.0	10	8	19	13	34	16	0
			2.0–3.0	28	5	13	5	34	15	0
			3.0–3.9	9	4	12	8	37	30	0
			Mean	13	6	18	8	34	21	0

SZ 29 NW 1 2087 9884 Nr Hill Farm **Block E**

Surface level +65.1 m (+213.5 ft)
Water struck at +61.6 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.3 m
Mineral 4.5 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam with scattered fine subangular flints	0.3	0.3
Brickearth	Clay, sandy, with traces of fine patinated subangular flint, mottled yellow and orange	1.0	1.3
River Terrace Deposits (9th Terrace)	Gravel Gravel: fine to coarse subangular to subrounded black flint, traces of fine subrounded to rounded vein-quartz and sandstone Sand: medium with coarse and some fine subangular to subrounded quartz and flint, yellow	4.5	5.8
Headon Beds	Sand Sand: fine subrounded to rounded quartz, yellow	1.1	6.9
Headon Beds	Clay, silty, orange and brown mottled, becoming dark greenish grey below 7.1 m; silty between 8.4 m and 8.8 m, and molluscan fossil shells at 8.8 m	2.1+	9.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	35	57	1.3–2.3	16	4	27	11	31	11	0
			2.3–3.3	10	5	25	16	31	13	0
			3.3–4.3	2	3	15	12	37	31	0
			4.3–5.3	3	2	17	12	32	34	0
			5.3–5.8	6	14	6	5	22	47	0
			Mean	8	4	20	11	32	25	0
8	91	1	5.8–6.9	8	87	3	1	1	0	0

SZ 29 NW 2 **2020 9764** **Nr Beech House** **Block E**

Surface level +51.5 m (+169 ft)
Water struck at +48.2 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.3 m
Mineral 3.7 m
Bedrock 1.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, humic loam, dark brown	0.3	0.3
River Terrace Deposits (8th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, traces fine subrounded to well-rounded vein-quartz and sandstone Sand: medium with some coarse traces of fine, subangular to subrounded quartz and flint, yellow	3.7	4.0
Barton Sand	Clay, sandy, medium subrounded quartz in pale grey clay matrix	1.4+	5.4

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
7	42	51	0.3–1.3	7	6	22	11	27	27	0
			1.3–2.3	8	4	25	13	28	22	0
			2.3–3.3	8	5	34	10	25	18	0
			3.3–4.0	4	2	22	10	28	34	0
			Mean	7	4	26	12	27	24	0

SZ 29 NW 3 2064 9681 North Hinton Park **Block E**

Surface level +53.7 m (+176 ft)
Water not struck
Shell and Auger 152 mm diameter
March 1977

Overburden 0.7 m
Mineral 2.6 m
Bedrock 3.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil and subsoil, clayey loam, dark brown, scattered fine subangular flint	0.7	0.7
River Terrace Deposits (8th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces fine subrounded to well-rounded vein-quartz and flint Sand: medium and coarse subangular to subrounded quartz and flint, brownish grey	2.6	3.3
Barton Sand	'Very clayey' sand Sand: fine well-rounded to subrounded quartz, very silty, mottled orange and yellow, becoming pale yellow below 4.8 m	3.5+	6.5

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	35	57	0.7–1.7	3	5	24	13	32	23	0
			1.7–2.7	9	1	14	16	28	32	0
			2.7–3.3	14	2	19	10	30	25	0
			Mean	8	3	19	13	30	27	0
37	63	0	3.3–4.8	52	47	0	0	1	0	0
			4.8–5.8	31	69	0	0	0	0	0
			5.8–6.8	19	81	0	0	0	0	0
			Mean	37	63	0	0	0	0	0

SZ 29 NW 4 **2029 9554** **Nr Tilley Plantation** **Block E**

Surface level +27.6 m (+90.5 ft)
Water struck at +25.3 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.4 m
Mineral 7.1 m
Bedrock 1.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam with scattered fine subangular flints	0.4	0.4
River Terrace Deposits (5th Terrace)	'Clayey' gravel, sandy between 3.1 m and 3.8 m Gravel: fine and coarse subangular to subrounded flint Sand: medium with some fine and coarse subangular to subrounded quartz and flint, silty, yellow-orange	7.1	7.5
Barton Clay	Clay, soft mottled orange and brown becoming stiff bluish green clay below 7.9 m	1.8+	9.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
11	31	58	0.4–1.4	21	5	11	11	31	21	0
			1.4–2.3	25	7	19	9	29	11	0
			2.3–3.1	7	4	21	13	41	14	0
			3.1–3.8	31	23	27	7	9	3	0
			3.8–4.8	2	4	12	7	43	32	0
			4.8–5.8	2	8	21	8	32	29	0
			5.8–6.8	2	2	9	9	35	43	0
			6.8–7.5	6	3	8	5	25	53	0
			Mean	11	7	16	8	32	26	0

SZ 29 NW 5 2174 9879 Plain Heath **Block E**

Surface level +63.8 m (+209.5 ft)
Water struck at +60.3 m
Shell and Auger 152 mm diameter
August 1976

Overburden 1.4 m
Mineral 3.4 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam with scattered fine subangular flints	0.2	0.2
Brickearth	Clay, sandy, silty fine quartz sand with scattered fine subangular flint mottled yellow and brown becoming mottled orange and grey below 1.0 m	1.2	1.4
River Terrace Deposits (9th Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded vein-quartz and sandstone Sand: medium with coarse subangular to subrounded quartz and flint, yellow	3.4	4.8
Headon Beds	Clay, laminated yellow and grey becoming bluish green silty clay below 5.1 m; abundant molluscan shells at 6.3 m	3.2+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
64	28	8	0.2–1.0	68	17	5	6	4	0	0
			1.0–1.4	57	8	15	5	13	2	0
			Mean	64	14	8	6	7	1	0
9	41	50	1.4–2.4	15	5	28	14	28	10	0
			2.4–3.4	12	3	29	18	29	9	0
			3.4–4.4	3	0	12	15	39	31	0
			4.4–4.8	4	2	15	15	30	34	0
			Mean	9	3	22	16	31	19	0

SZ 29 NW 6 2138 9740 Nr North Hinton Farm **Block E**

Surface level +56.9 m (+186.5 ft)
Water struck at +54.0 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.9 m
Mineral 2.7 m
Bedrock 2.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown loam, with scattered fine subangular flint	0.3	0.3
Brickearth	Clay, silty, light brown, with scattered fine subangular flint	0.6	0.9
River Terrace Deposits (8th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces fine well-rounded to subrounded vein-quartz and flint Sand: medium with coarse subangular to subrounded quartz and flint; yellow-brown, becoming greyish green below 2.3 m	2.7	3.6
Barton Sand	Clay, pale grey-fawn, becoming stiff pale bluish grey clay below 3.8 m	1.1	4.7
Barton Sand	Silt, clayey, with fine rounded quartz, light grey-brown, lignitic	1.0+	5.7

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
19	36	45	0.9–1.3	37	2	15	7	22	17	0
			1.3–2.3	18	3	25	10	27	17	0
			2.3–3.3	13	4	27	12	29	15	0
			3.3–3.6	8	7	11	11	30	33	0
			Mean	19	3	23	10	27	18	0

SZ 29 NW 7 2139 9665 East Close Copse **Block E**

Surface level +54.2 m (+178 ft)
Water struck at +51.2 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.9 m
Mineral 4.0 m
Bedrock 1.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, brown loam, with scattered fine subangular flint	0.3	0.3
Brickearth	Clay, firm, silty, light brown	0.6	0.9
River Terrace Deposits (8th Terrace)	'Clayey' gravel Gravel: fine and coarse subangular to subrounded flint, traces fine subrounded to well-rounded vein-quartz and flint Sand: medium with some coarse subangular to subrounded quartz and flint, silty, orange-brown	4.0	4.9
Headon Beds	Clay, silty, orange-brown becoming dark greyish brown laminated silty clay (lignitic) below 5.1 m	0.6	5.5
	Clay, stiff pale greyish green	0.4+	5.9

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
11	36	53	0.9–1.9	25	2	19	17	25	12	0
			1.9–2.9	13	4	36	8	18	21	0
			2.9–3.9	7	1	19	11	34	28	0
			3.9–4.9	0	1	12	13	34	40	0
			Mean	11	2	22	12	28	25	0

SZ 29 NW 8 **2114 9557** **Nr Hinton** **Block E**

Surface level +42.5 m (+139.5 ft)
Water struck at +40.5 m
Shell and Auger 152 mm diameter
March 1977

Overburden 0.7 m
Mineral 3.3 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown loam	0.7	0.7
River Terrace Deposits (7th Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, occasional subrounded flint cobbles and traces of well-rounded vein-quartz Sand: coarse and medium subangular to subrounded quartz and flint, yellow-orange	3.3	4.0
Barton Sand	Sand, silty, fine quartz with grey clay laminae, orange-yellow becoming greyish green below 6.0 m	3.0+	7.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
8	29	63	0.7–1.7	20	4	18	12	33	13	0
			1.7–2.7	2	1	11	16	42	28	0
			2.7–4.0	4	0	7	18	39	32	0
			Mean	8	2	11	16	38	25	0
45	55	0	4.0–5.0	47	52	1	0	0	0	0
			5.0–6.0	45	54	1	0	0	0	0
			6.0–7.0	43	56	0	1	0	0	0
			Mean	45	54	1	0	0	0	0

SZ 29 NW 9 2258 9931 Nr Little Wootton Enclosure **Block E**

Surface level +63.4 m (+208 ft)
Water struck at +60.3 m
Shell and Auger 152 mm diameter
September 1976

Overburden 1.6 m
Mineral 3.8 m
Bedrock 23.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, soft, peaty loam	0.2	0.2
Brickearth	Clay, silty, yellow and grey mottled	0.4	0.6
River Terrace Deposits (9th Terrace)	Clay, pebbly (non-mineral), mottled orange and grey sandy clay with scattered fine to coarse subangular to subrounded flint	1.0	1.6
River Terrace Deposits (9th Terrace)	Sandy gravel Gravel: fine and coarse subangular to subrounded flint, traces fine well-rounded to subrounded flint, vein-quartz and sandstone Sand: medium with some coarse subangular to subrounded quartz and flint, yellow-brown	3.8	5.4
Headon Beds	Clay, yellow-brown becoming firm pale greenish grey below 5.7 m. Thin sand beds, fossiliferous throughout	20.9	26.3
?Barton Sand	Sand Sand: fine well-rounded to subrounded quartz, silty, dark grey	2.3+	28.6

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
45	30	25	0.6–1.6	45	6	16	8	11	14	0
8	46	46	1.6–2.6	18	4	33	11	23	11	0
			2.6–3.6	7	3	22	9	33	26	0
			3.6–4.6	2	5	27	9	25	32	0
			4.6–5.4	5	5	46	14	17	13	0
			Mean	8	4	32	10	25	21	0
9	91	0	5.4–26.3	clay						
			26.3–27.9	10	87	2	1	0	0	0
			27.9–28.6	8	89	2	1	0	0	0
			Mean	9	88	2	1	0	0	0

SZ 29 NW 10 2215 9843 Nr Forest Lodge **Block E**

Surface level +62.8 m (+206 ft)
Water struck at +59.8 m
Shell and Auger 152 mm diameter
August 1976

Overburden 0.3 m
Mineral 3.4 m
Bedrock 2.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, light brown silty loam with scattered fine subangular flint	0.3	0.3
River Terrace Deposits (9th Terrace)	'Clayey' sandy gravel Gravel: fine with coarse subangular to subrounded flint, traces well-rounded flint, vein-quartz and sandstone Sand: medium with coarse and some fine subangular to subrounded quartz and flint, silty, yellow	3.4	3.7
Headon Beds	Clay, silty mottled yellow and orange becoming pale bluish grey below 5.1 m; soft buff silty mudstone from 4.7 m to 5.1 m	2.6+	6.3

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
16	44	40	0.3–1.3	31	11	21	7	21	9	0
			1.3–2.3	14	6	35	11	23	11	0
			2.3–3.3	4	3	22	17	31	23	0
			3.3–3.7	13	2	23	13	25	24	0
			Mean	16	6	26	12	25	15	0

SZ 29 NW 11 2242 9755 Nr Bramble Copse **Block E**

Surface level +54.6 m (+179 ft)
Water struck at +53.1 m
Shell and Auger 152 mm diameter
March 1977

Overburden 1.0 m
Mineral 2.6 m
Bedrock 2.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown clayey loam	0.4	0.4
Brickearth	Clay, silty, laminated, mottled grey and orange with scattered fine subangular flint below 0.8 m	0.6	1.0
River Terrace Deposits (8th Terrace)	Gravel Gravel: fine with coarse subangular to subrounded flint, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium and coarse subangular to subrounded quartz and flint, yellow-orange	2.6	3.6
Headon Beds	Clay, firm, silty, laminated orange and yellow mottled, becoming stiff laminated, greyish brown silty clay (lignitic)	2.2+	5.8

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
9	32	59	1.0–1.5	25	3	16	12	27	17	0
			1.5–2.5	5	0	14	15	41	25	0
			2.5–3.6	5	1	22	13	31	28	0
			Mean	9	1	18	13	34	25	0

SZ 29 NW 12 2208 9615 Nr Beckley Farm **Block E**

Surface level +49.6 m (+163 ft)
Water not struck
Shell and Auger 152 mm diameter
March 1977

Overburden 0.9 m
Mineral 1.1 m
Bedrock 2.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, brown loam	0.3	0.3
Brickearth	Clay, laminated, silty, yellow	0.6	0.9
River Terrace Deposits (8th Terrace)	'Clayey' sandy gravel Gravel: fine and coarse subangular to subrounded flint Sand: medium with fine and coarse subangular to subrounded quartz and flint, silty, orange-brown	1.1	2.0
Barton Sand	Clay, silty, laminated, lignitic, mottled grey and yellow becoming greenish grey below 2.5 m	1.0	3.0
	Clay, sandy, silty fine sand, lignitic, pale yellow-grey	1.2+	4.2

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
19	51	30	0.9–2.0	19	11	31	9	14	16	0
68	31	1	2.0–3.0 3.0–4.2	clay 68	29	1	1	0	1	0

SZ 29 NW 13 2232 9508 Nr Hinton House **Block E**

Surface level +41.0 m (+134.5 ft)
Water not struck
Shell and Auger 152 mm diameter
August 1976

Overburden 0.4 m
Mineral 4.7 m
Bedrock 3.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty loam, light brown with scattered fine subangular flint	0.4	0.4
River Terrace Deposits (7th Terrace)	'Clayey' gravel Gravel: fine with coarse subangular to subrounded flint, traces well-rounded flint, vein-quartz and sandstone Sand: medium and coarse subangular to subrounded quartz and flint, silty, orange-brown	4.7	5.1
Barton Sand	Clay, silty, fine quartz sand with thin dark grey clay laminae, orange and grey mottled silty clay between 6.9 m and 7.7 m	3.0+	8.1

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
13	39	48	0.4–1.4	14	4	26	14	28	14	0
			1.4–2.4	13	5	20	15	32	15	0
			2.4–3.4	14	6	17	13	32	18	0
			3.4–4.4	13	5	16	16	30	20	0
			4.4–5.1	10	4	16	15	30	25	0
			Mean	13	5	19	15	30	18	0
41	58	1	5.1–5.8	34	57	2	3	3	1	0
			5.8–6.9	44	55	1	0	0	0	0
			6.9–7.7	clay						
			7.7–8.1	47	52	1	0	0	0	0
			Mean	41	55	2	1	1	0	0

SZ 29 NW 14 2294 9554 Nr Beckley Moor Copse **Block E**

Surface level +42.5 m (+139.5 ft)
Water struck at +40.0 m
Shell and Auger 152 mm diameter
March 1977

Overburden 2.5 m
Mineral 3.6 m
Bedrock 1.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, loam, grey-buff	0.2	0.2
Brickearth	Silt, sandy, clayey, fine quartz with scattered fine subangular flint below 2.4 m	2.3	2.5
River Terrace Deposits (7th Terrace)	Gravel Gravel: fine and coarse subangular to subrounded flint, occasional subrounded flint cobbles, traces fine subrounded to well-rounded flint, vein-quartz and sandstone Sand: medium with coarse subangular to subrounded quartz and flint, orange-brown	3.6	6.1
Headon Beds	Clay, firm, mottled yellow and brown becoming stiff greenish grey, laminated silty clay below 7.1 m	1.9+	8.0

GRADING

Mean for deposit *percentages*			Depth below surface (m)	*percentages*						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$
6	32	62	2.5–3.5	7	3	13	13	40	24	0
			3.5–4.5	4	1	19	16	32	28	0
			4.5–5.5	5	1	21	12	29	32	0
			5.5–6.1	7	2	15	12	29	35	0
			Mean	6	1	18	13	33	29	0

APPENDIX G

List of workings

The main active and abandoned workings within the sheet area are listed below. Locally, other smaller, abandoned workings may be found.

Location	*Grid reference*	*Deposit*	*Status*
Near Moortown	165 045	4th Terrace	restored to fishing lakes
Sandford	173 017	6th Terrace	worked out
Goatspen Plain	227 018	9th Terrace	restored to open space
Holmsley Ridge	215 011	9th Terrace	working
Poors Common	201 985	8th Terrace	partially restored to agriculture
Neacroft	185 965	5th Terrace	restored, backfilled refuse tip
Burton Common	195 952	5th Terrace	worked out
St Catherine's Hill	145 955	8th Terrace	worked out

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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INSTITUTE OF GEOLOGICAL SCIENCES

INDUSTRIAL MINERALS ASSESSMENT UNIT

THE SAND & GRAVEL RESOURCES NORTH OF BOURNEMOUTH, DORSET.

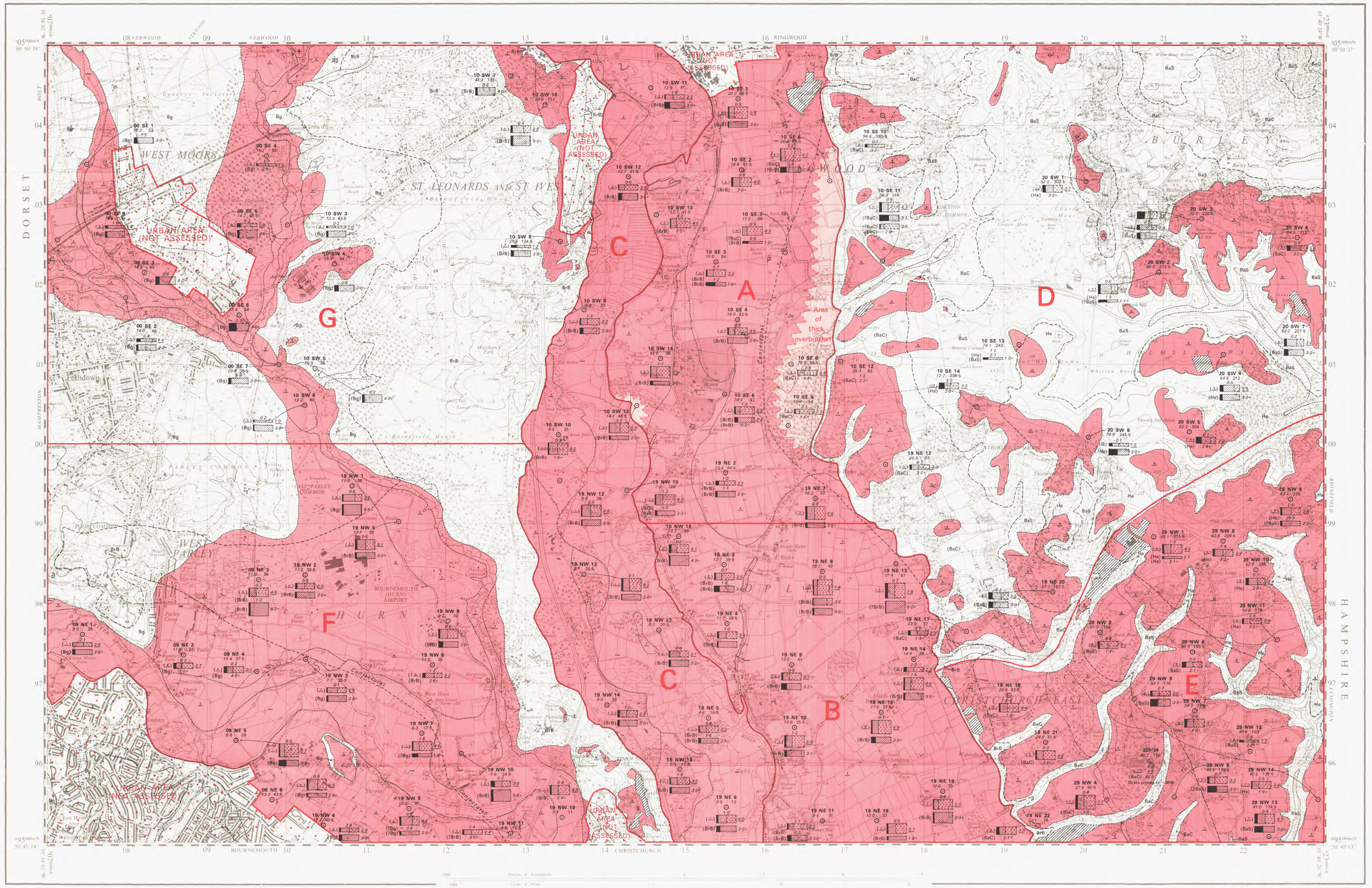
Scale 1:25 000 or about 2½ Inches to 1 Mile

ORDNANCE SURVEY

PARTS OF SHEETS SU 00, 10, 20, SZ 09, 19 & 29

PROVISIONAL EDITION

THE SAND & GRAVEL RESOURCES NORTH OF BOURNEMOUTH, DORSET.
(Parts of sheets SU 00, 10, 20, SZ 09, 19 and 29)



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

EXPLANATION OF SYMBOLS AND ABBREVIATIONS

51

DRIFT

- **Peat** — dark brown partially decomposed organic matter. P-4
- **Alluvium** - mottled orange and grey silts and sandy clays. A-34
- **River Terrace Deposits** — subangular to subrounded flint gravels and quartz sands of the 1st to 10th terraces.
- **Older River Gravels** — clayey, subangular flint gravels (levels 1 to 3).

QUATERNARY — RECENT AND PLEISTOCENE — RT-16 OR-14

SOLID

- **He** — **Headon Beds** — fossiliferous bluish grey clays with thin sand partings.
- **BaS** — **Barton Sand** — pale yellow and grey silty fine quartz sands.
- **BaC** — **Barton Clay** — dark greyish green silty clays, becoming more sandy and more glauconitic at their base.
- **BrB** — **Bracklesham Beds** — dark greyish brown lignitic sands with interbedded laminated silty clays.
- **Bg** — **Bagshot Beds** — dark greyish brown lignitic sands with interbedded laminated silty clays.

TERTIARY — OLIGOCENE — EOCENE

Worked-out areas of sand and gravel WO-9

BOUNDARY LINES

- Geological boundary, Drift
- Geological boundary, Solid (broken line denotes uncertainty).
- Inferred boundary between categories of deposits recognized.
- Resource Block boundary

BOREHOLE DATA

SITE LOCATIONS

- Industrial Minerals Assessment Unit (I.M.A.U.) Boreholes
- Other Boreholes

I.M.A.U. BOREHOLES

Borehole Registration Number — 20 SW 5 (62·2 204) — Surface level in metres and feet above O.D. (Newlyn)
Borehole site — 0·1 — Overburden
Grading diagram — 3·2 — Minerals (sand and gravel)
Geological classification — (Ba) (He) 2·4 — Bedrock
Thicknesses in metres

Notes
1. Figures underlined denote thickness used in the assessment of resources.
2. The + sign indicates that the base of the deposit was not reached.
3. The surface level in feet is a conversion of a measurement recorded in metres
4. The geological classification is given only for sand and gravel and bedrock

Borehole Registration Number
Each I.M.A.U. borehole is identified by a registration number, eg SW 5. The letters refer to the quarter sheet and the figures to the I.G.S. serial number for that quarter. The unique designation for borehole SW 5 is SU 20 SW 5

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

Sand (+1/16 -4mm) / Fines (-1/16mm) Gravel (+4mm)

The height of the diagram is proportional to the mineral thickness
The widths of the divisions show the proportions of **Fines**, **Sand** and **Gravel**.

OTHER BOREHOLES

The layout of information is the same as for I.M.A.U. boreholes although data available may not be as comprehensive. Some Hydrogeological Department records are registered according to the One-Inch Geological Sheet on which they occur, for example **329/34** signifies Hydrogeological Department borehole 34 on sheet 329.

CATEGORIES OF DEPOSITS

- **Exposed mineral, assessed.** CAT - E2
- **Continuous or almost continuous spreads of mineral beneath overburden.** CAT - C1
- **Sand and Gravel either not potentially workable (see Report) or absent.** CAT - A2
- **Sand and Gravel not assessed.** CAT - N1

RESOURCE BLOCKS

For assessment purposes 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, Industrial Minerals Assessment Unit, Institute of Geological Sciences, Keyworth, Nottingham. NG12 5GG

Made and published by the Director General of the Ordnance Survey, Southampton, for the Institute of Geological Sciences, Natural Environment Research Council.

The representation on this map of a Road, Track, or Footpath, is no evidence of the existence of a right of way.

Geological lines from a survey at the scale of six inches to one mile by C. Reid in 1891-99. Sir Archibald Geikie, F.R.S., Director General.
Boundaries amended by M. R. Clarke in 1978
Sand and gravel survey by M. R. Clarke, A. J. Dixon, M. Kubala and R. A. Sobey in 1976-77.
1: 25 000 Sand and Gravel Resource Sheet published in 1979.
R. G. Thurrell, Head, Industrial Minerals Assessment Unit.
Austin W. Woodland, C.B.E., Director, Institute of Geological Sciences
1100.80

The GRID lines on this sheet are at 1 Kilometre interval
Heights are in Feet above Mean Sea Level at Newlyn
Contour values are in feet
1 square inch on this map represents 09·639 acres on the ground

Data quoted for an individual borehole refer strictly to that site; reliable conclusions cannot be drawn about the thickness and grading elsewhere in the deposit, particularly in material as variable as sand and gravel. However, estimates of the volume and mean grading of the mineral as a whole in each Resource Block are given in the Report.

Compiled from 6" sheets last revised 1900-16
Other partial systematic revision 1938-59 has been incorporated
Major roads revised 1961-72

SU 01	SU 11	SU 21
	314	315
SU 00	SU 10	SU 20
SZ 09	329 SZ 19	330 SZ 29

Diagram showing the relationship of the National Grid, 1:25 000 sheets with the New Series One Inch Geological sheets 314, 315, 329 and 330. (in red)