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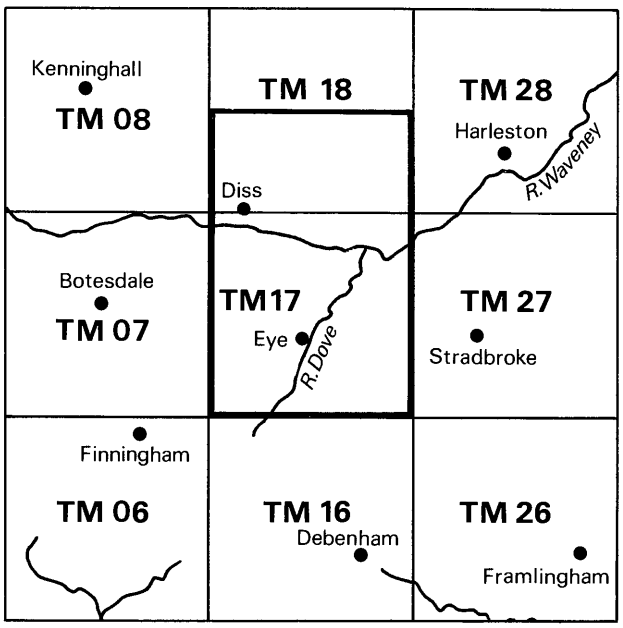

The sand and gravel resources of the country around Diss, Norfolk

Description of 1:25 000 sheet TM 17 and part of TM 18

C. J. Wilcox and R. Stanczyszyn

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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 No. 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 front cover indicates that part of a sheet adjacent to that quoted is 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 Industrial Minerals Assessment Unit (formerly the Mineral Assessment Unit) began systematic surveys in 1968. The work is now being financed by the Department of the Environment and is being undertaken with the co-operation of the Sand and Gravel Association of Great Britain.

This report describes the sand and gravel resources of the country around Diss (Norfolk), shown on the accompanying 1:25 000 resource map TM 17 and part of TM 18. The survey was conducted by R. Stanczyszyn and C. J. Wilcox under the supervision of M. R. Clarke. The work is based on 1:10 000 scale geological surveys carried out by A. Horton, T. E. Lawson and C. J. Wilcox in 1979-80.

Mr J. D. Burnell, ISO and Mr G. I. Coleman (Land Agents) were responsible for negotiating access to land for drilling. The ready co-operation of landowners and tenants in this work is gratefully acknowledged.

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SUMMARY

The geological maps of the Institute of Geological Sciences, pre-existing borehole information and 120 boreholes drilled for the Industrial Minerals Assessment Unit form the basis of the assessment of the sand and gravel resources of the country around Diss, Norfolk.

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

The 1:25 000 map is divided into six resource blocks, containing from 7.8 to 34.1 km^2 of sand and gravel; the deposits in each block are described. For all six blocks a statistical assessment of the sand and gravel resources is made and the mineral-bearing areas, the mean thicknesses of overburden and mineral and the mean gradings are given.

The positions of boreholes and data recorded from them, the geology and the outlines of the blocks are shown on the accompanying resources sheet.

Notes

Each borehole registered with the Institute is identified by a four-element code (e.g. TM 18 SE 44). The first two elements define the 10-km square (of the National Grid) in which the borehole is situated; the third element defines a quadrant of that square, and the fourth is the accession number of the borehole. In the text of the report the borehole is normally referred to by the last three elements alone (e.g. 18 SE 44).

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

Bibliographical reference

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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, neither the economic nor the social factors used to decide whether a deposit may be workable in the future can 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, 1981; 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 geologic evidence. The sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to permit the mineral bodies to be outlined completely or the grade established throughout" (Bureau of Mines and Geological Survey, 1948, p. 15).

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

a The deposit should average at least 1 m in thickness.
b The ratio of overburden to sand and gravel should be no more than 3:1.
c The proportion of fines (particles passing the No. 240-mesh B.S. 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 that 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.

Pre-Pleistocene rocks, which are usually consolidated and devoid of potentially workable sand and gravel, are referred to as 'bedrock'; 'waste' is any material other than bedrock or mineral; 'overburden' is waste that occurs between the surface and an underlying body of mineral.

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, 64 mm has been adopted. The boundaries between fines (that is, the clay and silt fractions) and sand, and between sand and gravel material, are placed at $\frac{1}{16}$ mm and 4 mm respectively (see Appendix C).

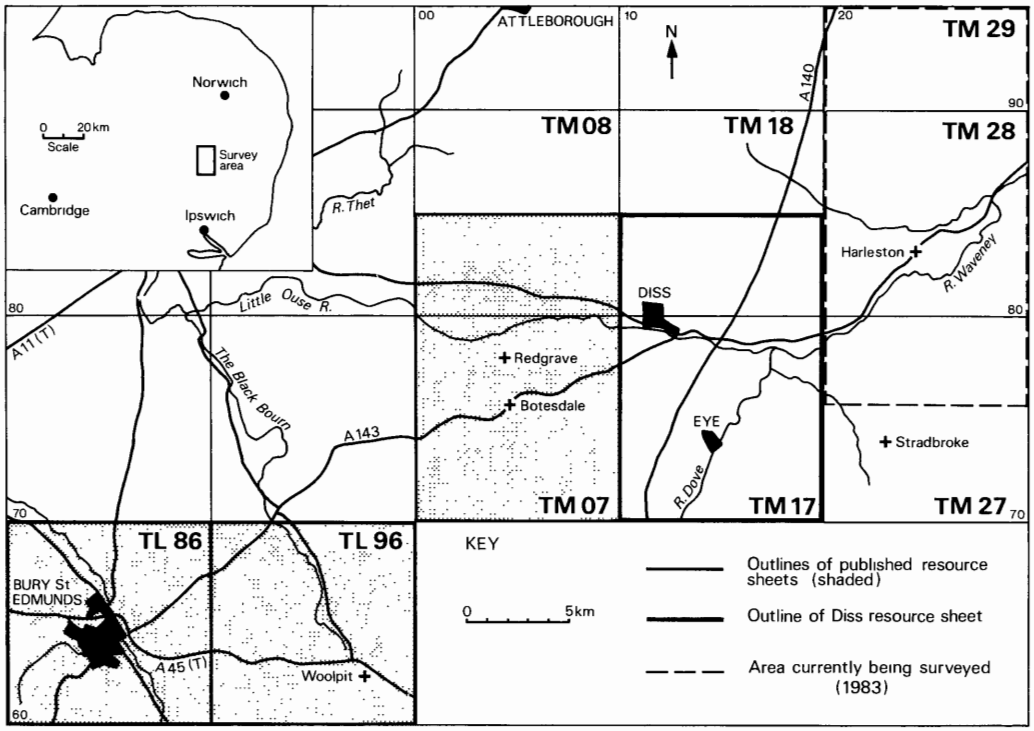


Figure 1 The location of the resource sheet area and its relationship to adjacent survey areas.

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 or land of 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 mineral in parts of a block, except in the immediate vicinity of the actual sample points.

DESCRIPTION OF THE DISTRICT

General

This assessment of the sand and gravel resources of 150 km^2 of country around the market town of Diss in Norfolk (Figure 1) identifies 109.8 km^2 of mineral-bearing ground, containing an estimated 1178 million m^3 ($\pm$11 per cent) of potentially workable sand and gravel (Table 5). These resources (described in resource blocks A, B, C, D, E and F; see Figure 2) are found as deposits of Crag, Beccles Beds, Glacial Sand and Gravel, Head Gravel and River Terrace Deposits. No assessment has been made of the sand and gravel resources within the urban area of Diss, which covers 3.1 km^2 of the resource sheet area. The adjacent Redgrave resource sheet, to the west, has been described by Auton (1982). A survey of the sand and gravel resources of the Harleston district is currently being carried out.

Topography

The principal topographical feature of the area is the valley of the River Waveney (Figure 3) which crosses the centre of the district from west to east. A major tributary, the River Dove, flows north-eastwards through the town of Eye [147 738] to join the River Waveney at The Crotch [1776 7842], 1 km north-west of Hoxne. The ground rises rapidly from the river valleys to the gently undulating clay plateaux which rise to over +45 m OD in the north and +53 m OD in the south.

Geology

The western part of the area was first surveyed on the one-inch (1:63 360) scale by F J Bennett in 1879-81 and published on Old Series Sheet 50 NW in 1882; the accompanying descriptive memoir (Bennett 1884) was published shortly afterwards. The eastern part of the area was surveyed by Bennett in 1882 and the results published on Old Series Sheet 50 NE; the descriptive memoir by Whitaker and Dalton was published in 1887. The area was remapped at the scale of 1:10 000 by A. Horton, T. E. Lawson and C. J. Wilcox in 1979-80. The geological deposits of the area are classified in Table 1, and a brief account of the nature of each deposit is given below.

SOLID

Chalk The Chalk consists of massively bedded soft white limestone with layers of nodular flint. The Upper Chalk, which forms the bedrock across the northern part of the area, is almost entirely covered by drift, with the exception of small outcrops near Marsh Farm, Thrandeston [110 767] and Stuston Common [136 787]. The Chalk surface is extremely irregular (Figure 4). In the southern part of the area a Chalk ridge extends at an elevation of +10 m to +20 m OD north-eastwards from Occold to south of Hoxne. On its north-western flank there is a deep depression reaching at least -30 m OD - the Brome Trough of Clarke and others (1982) and this account. The south-eastern flank of the ridge drops away to -40 m OD at the margin of a larger depression previously described (Nottcutt, 1978) as the Stradbroke Trough. Locally, drift-filled buried channel systems have been cut into the surface of the Chalk. A water well (17 NW 23 [1142 7956]) at Diss proved the surface of the Chalk at a depth of -40.2 m OD and at Stuston Common (1.5 km to the south-east) Chalk was proved in a water well (17 NW 7) at -26.2 m OD, thus demonstrating the easterly continuation of the buried channel beneath the River Waveney found in the Redgrave area (Auton 1982). This channel becomes indistinct east of Stuston. Similar, unexpectedly thick drift sequences occur in the Dickleburgh and Rushall area, with chalk proved at - 8.6 m OD in a water well (18 SE 17) at Rushall.

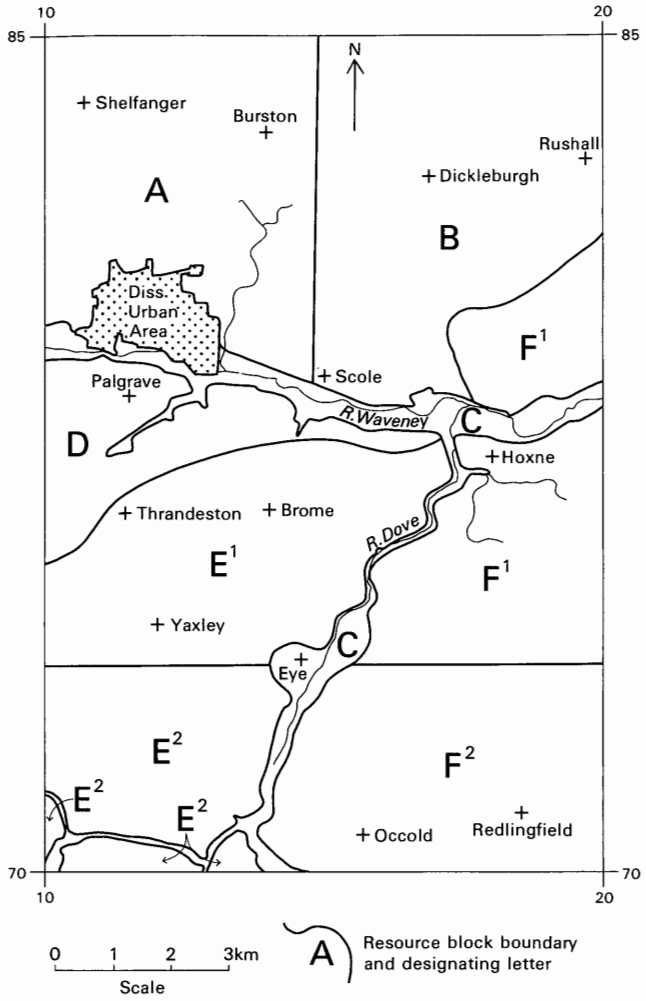


Figure 2 The location of the resource block boundaries.

Crag Crag sands rest unconformably on the eroded surface of the Chalk, and are in turn unconformably overlain by drift deposits. The north-western limit of the Crag extends north-eastwards across the central part of the Diss sheet from Thrandeston in the west to Rushall in the east. The former extent of the Crag is uncertain. A water well (18 SE 14) at Rushall proved 16.5 m of possible Crag sediments, which may have extended further before removal by glacial erosion (see horizontal section A-A1 at foot of resource map). The position of the sub-drift Crag boundary shown on the resource map is conjectural.

The lithology of the Crag is fairly uniform throughout the area: it consists mainly of sand with some 'clayey' sand (for nomenclature see Appendix C). The 'clayey' fraction frequently occurs as discrete laminae of clay, silty clay and clayey silt within the sand sequence. In an unweathered state the Crag sand has a greenish grey colour due to the presence of glauconite. In the weathered zone the sands become iron-stained and, being variably leached, range from yellow to orange-brown in colour. Iron from the decomposed glauconite may be redistributed to form thin layers of secondary iron-pan, as proved, for example, in boreholes 17 SE 33 and 17 NE 42. Below the leached material or 'weathered layer', the Crag is commonly shelly with some occurrences of loosely cemented shelly sandstone. Scattered pebbles, generally less than 8 mm diameter, are composed of flint, quartzite and vein-quartz.

Forty-four assessment boreholes were drilled into the Crag which has a minimum proved thickness of 7.0 m, observed in borehole 17 NW 45 south of Rectory Farm, Thrandeston. The maximum recorded thickness, 22.5 m, was penetrated in borehole 17 NE 42, south west of The Hall, Brockdish, but the base was not proved. Total thicknessess of the Crag of about 60 to 75 m are predicted in the Brome and Stradbroke Troughs respectively (Figure 4) with an attenuated Crag thickness of about 17 m over the intervening chalk ridge.

Table 1 Geological classification of the deposits of the Diss area.

DRIFT	
Recent and Pleistocene	
Peat	Soft dark brown silty to clayey peat
Alluvium	Silty clay, shelly and peaty in part
River Terrace Deposits	Sands and flint gravels
Head and Head Gravel	Variable deposit of poorly sorted, clayey, pebbly sand to sandy clay derived by solifluxion from adjacent deposits
Hoxne Beds	Organic sands, silts and clays
Boulder Clay	Dark grey, light grey and brown, silty to sandy clays with pebbles of chalk and flint
Glacial Drift, undifferentiated (Channel-Fill Deposits)	Silty clays, sands and pebbly sands
Glacial Laminated Deposits	Silts, silty fine sands and clays
Glacial Sand and Gravel	Poorly sorted sand and gravel, locally clayey, consisting mainly of flint pebbles with quartz, quartzite and some chalk
Beccles Beds (including the Kesgrave Sands and Gravels)	Fine and medium sands, and gravels with flint, quartz and quartzite pebbles
Ingham Sand and Gravel	Sand and gravel with abundant 'Bunter' quartzite pebbles; proved only in borehole 18 SE 43
SOLID	
Pleistocene	
Crag	Quartz sand, glauconitic in part, some layers of silty clay, occasional rounded flint and quartz pebbles
Upper Cretaceous	
Upper Chalk	Soft white limestone with flints

DRIFT

Ingham Sand and Gravel An iron-stained deposit of sand and gravel, rich in reddish brown 'Bunter' quartzites (probably derived from the Sherwood Sandstone Group of the Midlands), termed the Ingham Sand and Gravel, has been described from the Regrave area of the Waveney Valley by Clarke and Auton (1982) and Auton (1982).

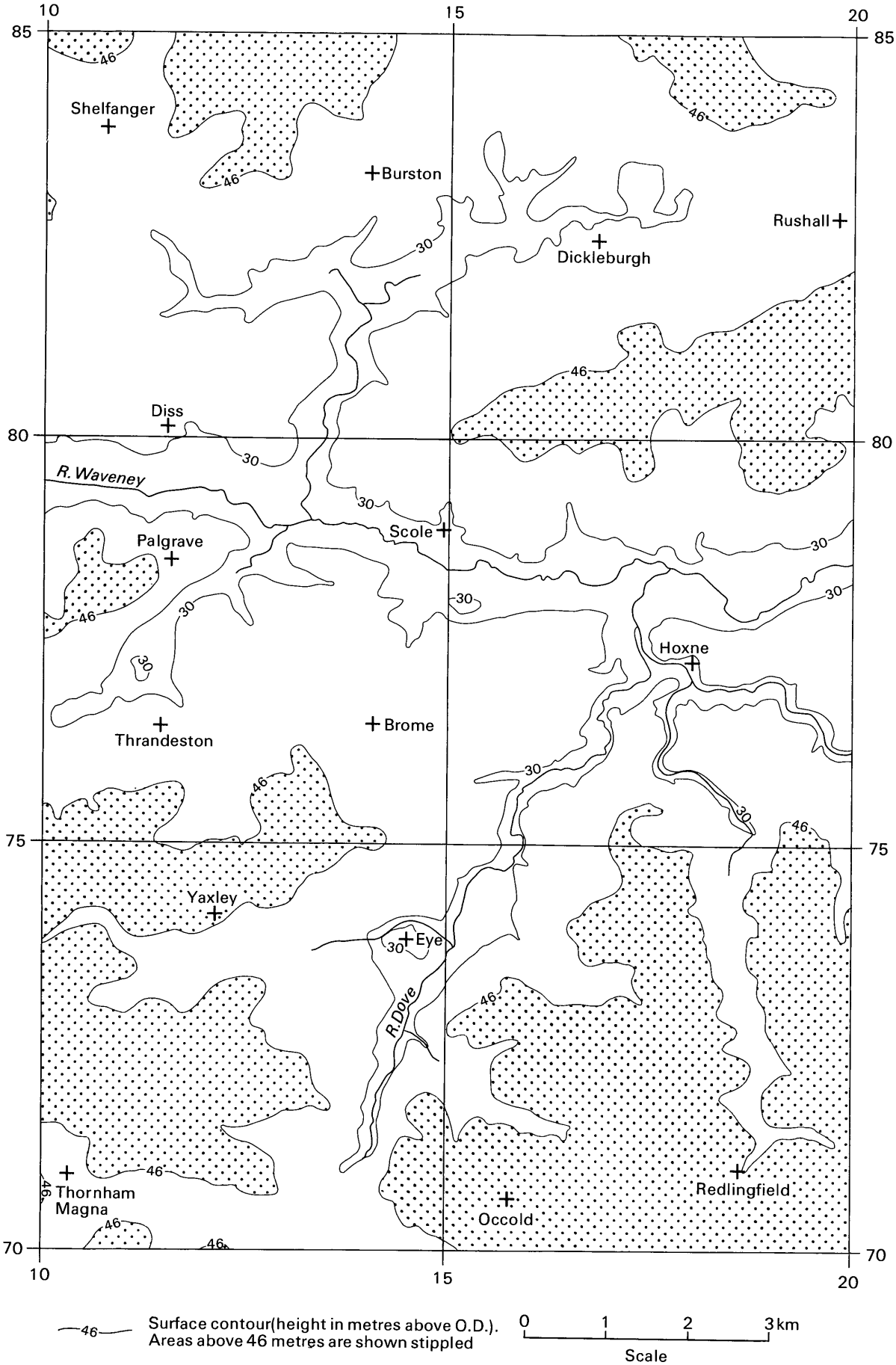


Figure 3 The topography of the resource sheet area.

Similar Bunter-rich sand and gravel was proved in assessment borehole 18 SE 43 at Scole, near Diss. In this borehole, 3.4 m of iron-stained sand and gravel with abundant quartzite, vein-quartz and some iron-stained mudstone pebbles overlie the chalk at +22.2 m OD; they are overlain by 2.6 m of ?Kesgrave Sands and Gravels. The exact stratigraphical relationship of the Ingham Sand and Gravel is uncertain. Two assessment boreholes (18 SW 42, and SW 45) at Shelfanger, north of Diss, proved sand and gravel with a lithology similar to the Kesgrave Sands and Gravels but with a higher percentage of reddish brown quartzite pebbles. These two isolated deposits have proved difficult to correlate with known occurrences of Ingham Sand and Gravel and have been classified in the borehole logs (Appendix E) as ?Kesgrave Sands and Gravels.

Beccles Beds A diverse suite of sands and gravels which crop out in this survey area have, for the purposes of field mapping, been classified as the Beccles Beds. Assessment boreholes have demonstrated that, in the Diss area, the Beccles Beds comprise quartzite-rich gravels overlying fine sands. They underlie the Boulder Clay and overlie shelly Crag, and were first informally described in the Bungay to Beccles area (Wilcox and Horton 1982; Lawson 1982). The sands and gravels are regarded as distinct from the chalk-rich and flint-rich glacial gravels which were observed locally to underlie the Boulder Clay (for example boreholes 17 NE 56 and 18 SE 40).

The sequence is best demonstrated by assessment borehole 17 NE 37 east of the Rectory at Brockdish. In this borehole, 9.7 m of Glacial Sand and Gravel overlie 2.3 m of soft, sandy, yellowish brown boulder clay. This boulder clay was proved only at this locality in the Diss area but crops out 7 km to the north-east in the Harleston area; it was informally named the Starston Till by Lawson (1982) and included by him within the Beccles Beds. The Starston Till in borehole 17 NE 37 overlies 5.7 m of quartz and quartzite-rich gravels comparable to the Kesgrave Sands and Gravels of Essex and Suffolk (see Rose and Allen, 1977) and they are so named here. This deposit, which has been included within the Beccles Beds (see legend on resource map), has been recognised over much of the Diss area. The Kesgrave Sands and Gravels overlie the Crag or rest unconformably on the eroded Chalk surface. They were proved in 45 assessment boreholes and range in thickness from 0.7 m (in borehole 17 NE 42) to 8.8 m (borehole 17 SW 48). The lithology is fairly uniform, varying from pebbly sand to sandy gravel which is often 'clayey'.

Fine yellow sands of the Beccles Beds, underlying the Kesgrave Sands and Gravels at Brockdish, show lithological affinities with Crag sands drilled in adjacent asessment boreholes (17 NE 42, 17 NE 37), and it seems probable that the Beccles Beds include, at least in part, decalcified sands of Crag age.

Glacial Sand and Gravel North of the River Waveney, extensive spreads of sand and gravel underlying the Boulder Clay and resting on the eroded Chalk surface (as proved in boreholes 18 SE 40, 18 SW 58) are widespread north of a line from Diss to Scole [150 790] and Rushall [198 827]. In part they represent glacially re-worked Kesgrave Sands and Gravels, but for assessment purposes may be considered as Glacial Sand and Gravel. South of the River Waveney, Glacial Sand and Gravel is rarely found beneath the Boulder Clay, but occurs as thin, impersistent, beds within it (e.g. boreholes 17 SE 27, 17 SE 29, 17 NE 46). Glacial Sand and Gravel crops out extensively along the major river valleys and is often associated with the drift-filled buried channels (see cross-sections at foot of resource map) in which anomalously thick sand and gravel sequences have been proved in assessment boreholes (such as 17 SW 50, 17 NE 44, 18 SE 37) and in a water well at Palgrave (17 NW 16). Glacial channel sediments frequently show rapid variations in lithology; in the buried drift-filled channel which extends from Rushall to Shimpling, thick (15.8 m+) Glacial Sand and Gravel sequences were proved in an assessment borehole (18 SE 37). An adjacent assessment borehole (18 SE 38) showed 6.7 m of glacial sand interbedded with 18.3 m+ Boulder Clay and glacial silt.

The Glacial Sand and Gravel was proved in 69 assessment boreholes to be extremely variable in thickness, ranging from 0.4 m (in borehole 17 SE 27) to more than 15.8 m (borehole 18 SE 37). It is also very variable in lithology and ranges from sand to gravel which is often 'clayey' or 'very clayey'; no regional pattern of variation is apparent.

Glacial Laminated Deposits These deposits occur only locally at the surface, the most extensive outcrop occurring south of the Alder Carr, Oakey [154 779]. They consist of yellow to grey silts with silty clays and clays and are often finely laminated; some layers of chalk sand occur. The silts are commonly found within the drift-filled channel systems where they are seen to alternate with thin layers of Boulder Clay. Thick successions of laminated silts and clays were proved in assessment boreholes drilled in the drift-filled buried channel beneath the River Waveney at Brockdish (borehole 17 NE 43) and Scole (borehole 17 NE 38) and in a channel at Rushall (borehole 18 SE 38). Laminated silts also occur within the Boulder Clay sequence, where they range from thin 'partings' several centimetres thick to a maximum of 2.5 metres (assessment borehole 17 NE 39).

Glacial Drift, undifferentiated (Channel-Fill Deposits) Variable glacial deposits comprising alternating boulder clays, silty clays, sands and pebbly sands have been mapped on the slopes south of Millers Lane, Scole [143 792] and at Billingford [168 789]. An assessment borehole (17 NW 31) at Millers Lane showed an alternating sequence of 10.6 m of Boulder Clay, Glacial Sand and Gravel and silt, on Chalk. At Billingford, borehole 17 NE 39 proved 11.0 m of Boulder Clay and silt overlying 9.8 m of Glacial Sand and Gravel on Chalk bedrock. An excavation in a small disused pit south-east of Billingford Hall [1720 7888] proved 2.5 m of poorly sorted chalk and flint gravel overlying 1.2 +m of Boulder Clay. Thin layers of poorly laminated chalky clay (0.1 to 0.3 m thick) within the Glacial Sand and Gravel indicate waterlain deposits, and it is possible that the rapidly alternating lithologies observed elsewhere within the sequence may represent deposition within a glacial channel.

Boulder Clay The Boulder Clay cover is extensive, with the greatest thicknesses proved on the plateaux in the northern and southern parts of the district, where the base undulates gently from approximately +28 to +38 m OD. However, many channels filled with Boulder Clay cut into the underlying deposits. One such channel was recognised at Rushall [198 827], where assessment borehole 18 SE 38 proved a sequence of glacial sediments to +11.2 m OD without reaching the base. An assessment borehole (18 SW 54) at Burston Bridge proved Boulder Clay to below +5.7 m OD which may occupy the westward continuation of the drift-filled channel at Rushall, although the course of such buried channels is often difficult to detect due to a lack of sufficient borehole information.

The three lithologically distinct boulder clays which occur in the Diss area are closely similar to those identified in the Redgrave area by Clarke and Auton (1982). The sequence demonstrated in boreholes comprises, in descending order:

a) Boulder Clay, sandy to silty, dark olive grey to bluish grey; abundant chalk, flint and mudstone pebbles.

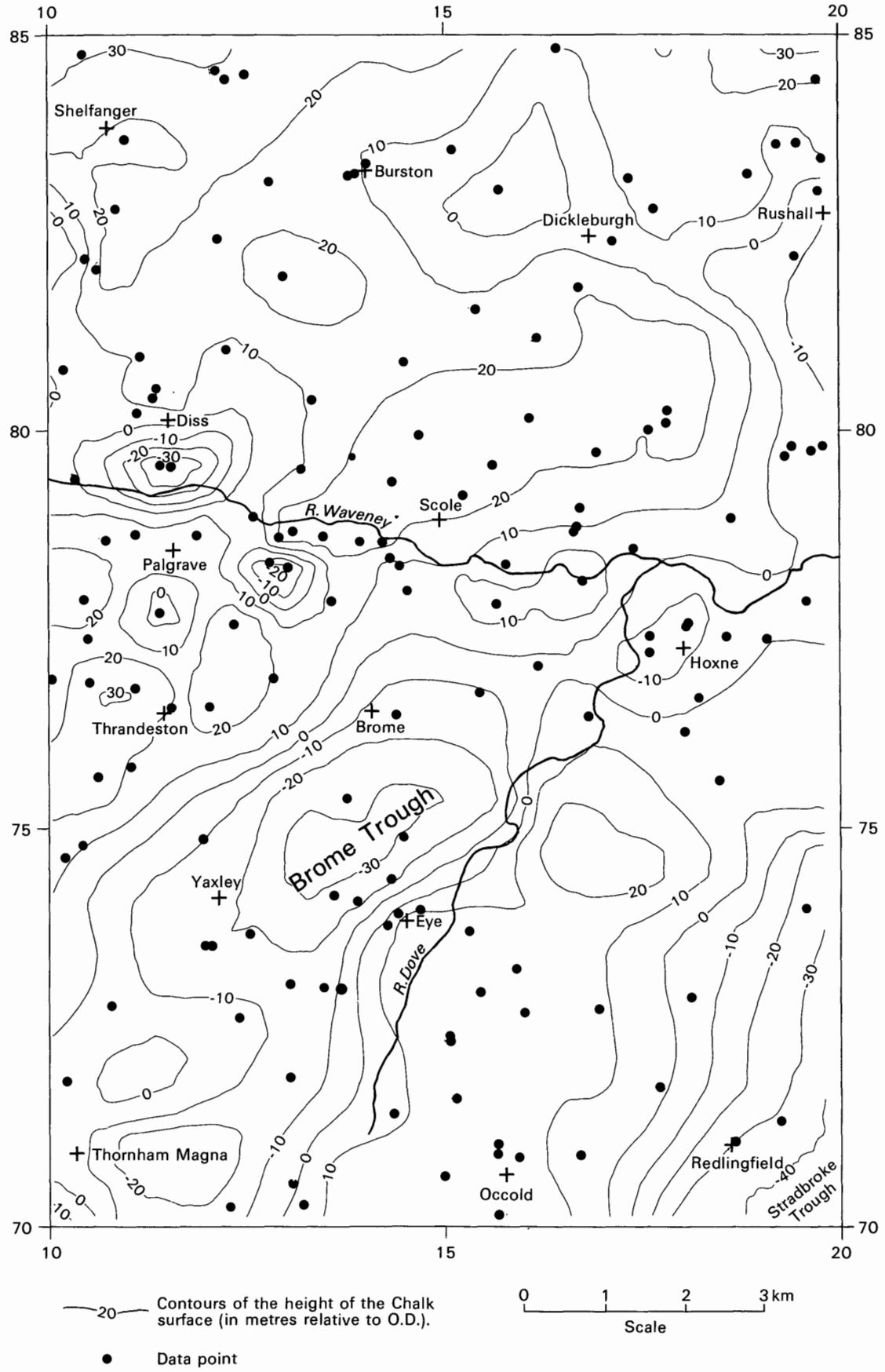


Figure 4 Computer-generated contour map of the surface of the Chalk.

b) Boulder Clay, soft, sandy, pale grey; much finely comminuted chalk and chalk 'flour'; no mudstone clasts noted.

c) Boulder Clay, very sandy, brown to brownish grey; rare chalk, numerous rounded white quartz and quartzite pebbles; no mudstone clasts noted.

These deposits are commonly separated by thin beds of sand and gravel, although the tri-partite sequence is not necessarily developed everywhere. Good examples of the Boulder Clay lithologies were noted in assessment boreholes 18 SW 44, 17 NE 36, 17 NE 54, 17 SE 36 and 17 SE 42.

Where the Boulder Clay is exposed, the uppermost metre is commonly decalcified to a buff-brown sandy clay. The weathered zone passes downwards through mottled grey and brown clay to unweathered Boulder Clay at approximately 3.5-4.0 m depth.

Hoxne Beds (and other organic deposits) Organic lacustrine deposits at Banham's Brickpit, Hoxne, were selected by West (1956) as the type section for the Hoxnian (interglacial) Stage of the Pleistocene. The pit is now disused and with the exception of two small outcrops [177 768 and 173 766] the deposits have been almost entirely worked-out. The lacustrine sediments were deposited in a depression within the Boulder Clay and were subsequently overlain by Head Gravel, deposited in a periglacial regime during post-Hoxnian times (Horton 1982).

Assessment boreholes west of Chestnut Farm, Eye (17 NW 50), and north of Cross Street, Hoxne (17 NE 55), showed organic sediments in an analogous stratigraphical situation to that of the type Hoxnian site. The deposit at Chestnut Farm has not been mapped, but is believed to be of only local occurrence.

Organic deposits of probable Devensian or late Glacial age were drilled in valley sites at Waterloo Plantation, Eye (borehole 17 SE 26), and near Grove Farm, Thornham Magna (borehole 17 SW 56). At Waterloo Plantation the organic deposits are overlain by River Terrace Deposits, and at Grove Farm they lie beneath Alluvium. Organic deposits of uncertain age underlie ?Glacial Sand and Gravel at Frenze Hall, Scole (borehole 18 SW 57).

Head and Head Gravel Deposits of Head occur along the sides of the Waveney and Dove valleys and floor many of the minor tributary valleys. The deposits, formed principally by solifluxion, tend to be variable in lithology, reflecting the parent materials from which they are derived. Their thickness (proved in six assessment boreholes), ranges from 0.4 m (in borehole 17 NW 45) to 2.7 m (in borehole 17 NW 50); the mean thickness is 1.4 m. The deposits vary from sand to clayey pebbly sand; they generally contain a high percentage of fines. Due to their extreme variability and high clay content, the Head deposits are not regarded as a resource and have not been assessed.

Deposits of Head Gravel occur on the uplands south of the River Waveney. The most extensive outcrop occurs at Fairstead Farm [175 765], where the Head Gravel overlies the Hoxnian interglacial deposits of Banham's brickpit and extends beyond them to rest on Boulder Clay and Glacial Sand and Gravel. Assessment borehole 17 NE 53 at Fairstead Farm proved 3.3 m of 'clayey' sandy gravel (Head Gravel) overlying Glacial Sand and Gravel. North of Cross Street, Hoxne [190 768], a deposit of Head Gravel overlies Boulder Clay. In assessment borehole 17 NE 55, Head Gravel 5.0 m thick was proved to overlie 1.9 m of ?organic silts resting on Boulder Clay (see cross-section A-A1 on accompanying resource map) in an analogous situation to the type Hoxnian deposits. At Gissing Farm, south of Hoxne [171 754], 3.3 m of 'very clayey' sandy gravel rest on Boulder Clay. The deposit at Gissing Farm has not been mapped, but is believed to be of only localised occurrence.

River Terrace Deposits Extensive spreads of River Terrace Deposits occur along the Waveney and Dove valleys and other tributaries. The deposits, proved in 12 assessent boreholes, vary from sand to gravel with a variable fines content; they range from 0.9 m thick (in borehole 17 SW 57) to 8.8 m (in borehole 17 NW 28) with a mean thickness of 3.0 m. Three main terrace levels have been recognised.

In several boreholes the base of the terrace sequence may be accurately defined. In the Waveney Valley south-east of The Hall, Brockdish, assessment borehole 17 NE 43 proved 1.3 m of First Terrace gravel resting on glacial silts at +18.2 m OD. At Elm Vale, Palgrave, (assessment borehole 17 NW 29) 4.4 m of Second Terrace sands overlie chalky glacial gravels at +19.9 m OD. Six kilometres downstream, at Oakley, borehole 17 NE 40 proved 3.5 m of gravel mapped as Second Terrace resting on Chalk at +18.5 m OD. In some boreholes (eg. 17 NW 35, 17 NW 37, 17 NE 44) it has been more difficult to separate the terrace deposits from underlying Glacial Sand and Gravel. No clear break in grading is evident and the Glacial Sand and Gravel (for example in borehole 17 NW 37) is distinguished purely by its higher proportion of chalk pebbles. North of Oak Farm, Palgrave, 8.8 m of First Terrace sands were drilled in assessment borehole 17 NW 28; this sequence is anomalously thick and may include some glacial sand although it has not proved possible to differentiate the deposit.

Table 2 Mean gradings of the mineral deposits.

Deposit	No. of samples	Mean grading percentages						
		$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	+1 -4	+4 -16	+16 -64	+64 mm
River Terrace Deposits	34	6	20	57	5	7	5	0
Head Gravel	11	16	24	28	8	14	10	0
Glacial Sand and Gravel	343	8	17	43	8	15	9	0
Kesgrave Sands and Gravels	147	6	13	43	12	16	10	0
Crag	247	7	48	42	2	1	0	0

Note: Graded overburden and graded waste samples have not been included in the mean grading calculations.

Peat and Alluvium Deposits of alluvium and peat cover the floodplain of the River Waveney and its tributary valleys. The alluvium consists of silt and clay with local shelly peat. Alluvial deposits were proved in 16 boreholes and range in thickness from 0.4 m in borehole 17 NE 44 to 4.4 m in borehole 17 SW 50; the mean thickness is 2.1 m. The deposits are non-mineral.

Composition of the Sand and Gravel Deposits

Five potentially workable sand and gravel deposits ocur within the sheet area: Crag, Kesgrave Sands and Gravels, Glacial Sand and Gravel, Head Gravel and River Terrace Deposits. The mean grading characteristics of these deposits proved in assessment boreholes are shown in Table 2 and Figure 5, and the mean composition of part (+8 -16 mm) of the fine gravel fraction of each deposit is given in Table 3. The grading characteristics of the mineral deposits, obtained from the mean grading of the sand and gravel proved in each assessment borehole, shown are Figures 6 and 7.

Crag The overwhelmingly sandy deposits of the Crag were proved in 41 assessment boreholes; their mean grading is fines 7 per cent, sand 92 per cent and gravel 1 per cent. There is little lateral variation in the nature of the deposits across the area (Figure 7), the greatest variation being in the fines content.

Pebbles are uncommon and comprise mainly flint, with some quartzite and quartz; iron pan and shell fragments may occur as minor constituents of the gravel fraction.

The sand fraction is composed mainly of subrounded to well rounded quartz with some mica, with abundant glauconite below the water table; it has a mean grading of fine sand 48 per cent, medium sand 42 per cent and coarse sand 2 per cent. The fines occur mainly as thin, pale grey to greenish grey partings (10-50 mm thick) of silt and silty clay found at intervals through the sequence.

Kesgrave Sands and Gravels These deposits have a mean grading of fines 6 per cent, sand 68 per cent and gravel 26 per cent, and are thus classified as sandy gravel. They have been proved in 39 assessment boreholes where they generally consist of pebbly sands and sandy gravels which are locally 'clayey'; they have little apparent regional variation in grading or composition throughout the area (Figure 7).

The +8-16 mm material from the fine gravel fraction is composed predominantly of flint (about 20 per cent of which is rounded), quartzite and vein-quartz; minor constitutents such as ironstone, sandstone and pinhole chert (Lower Greensand) account for 2 per cent of the material studied (Table 3).

The sand fraction is mainly composed of subrounded quartz with some angular flint, and the fines are generally disseminated throughout the deposit. The mean grading of the sand is fine sand 13 per cent, medium sand 43 per cent and coarse sand 12 per cent.

Glacial Sand and Gravel The Glacial Sand and Gravel was proved in 54 assessment boreholes and the samples have a mean grading of fines 8 per cent, sand 68 per cent and gravel 24 per cent, giving an overall classification of sandy gravel. The deposit is characteristically very variable across the area (Figure 6) and ranges from sand to gravel which in some places may be 'clayey' to 'very clayey'.

The pebble-count (+8-16 mm) faction is mainly composed of angular flint with quartzite, vein-quartz and chalk (mean 8 per cent, see Table 3). The proportion of chalk in the pebble-counted samples is very variable and ranges from nil to 72 per cent (in borehole 17 NW 42) and often varies in abundance in samples within an individual borehole. The minor constituents (4 per cent) include many sedimentary rock types and some igneous and metamorphic lithologies.

The sand fraction is composed of angular to subrounded flint and quartz with a variable proportion of chalk in some samples. It has a mean grading of fine sand 17 per cent, medium sand 43 per cent and coarse sand 8 per cent. The fines content may occur as discrete 'clayey' layers or be disseminated through the deposit.

Head Gravel Three assessment boreholes (17 NE 53, 17 NE 55, 17 NE 58) were drilled in Head Gravel; the deposits are classified as 'clayey' sandy gravel and have a mean grading of fines 16 per cent, sand 60 per cent and gravel 24 per cent.

The +8-16 mm gravel fraction is composed dominantly of angular flint (90 per cent) with subordinate quartzite and vein quartz.

The sand fraction is mainly composed of angular to subrounded flint and quartz. Its mean grading is fine sand 24 per cent, medium sand 28 per cent and coarse sand 8 per cent. The fines content is generally disseminated throughout the deposit but may be concentrated at certain levels to produce a 'very clayey' sandy gravel.

River Terrace Deposits Proved in 11 assessment boreholes, River Terrace Deposits have a mean grading of

Table 3 Mean composition of the +8 -16 mm gravel fraction of the mineral deposits.

Deposit	No. of samples	Percentage by weight					
		Angular flint	Rounded flint	Vein quartz	Quartzite	Chalk	Others
River Terrace Deposits	8	82	1	3	12	trace	2
Head Gravel	4	90	-	2	5	-	3
Glacial Sand and Gravel	194	64	2	8	14	8	4
Kesgrave Sands and Gravels	99	43	8	22	25	-	2
Ingham Sand and Gravel	2	32	2	16	36	-	14*

* Mainly sedimentary ironstone

Note The category 'Others' includes shale, sandstone, limestone, ironstone, fossil fragments and various igneous and metamorphic lithologies.

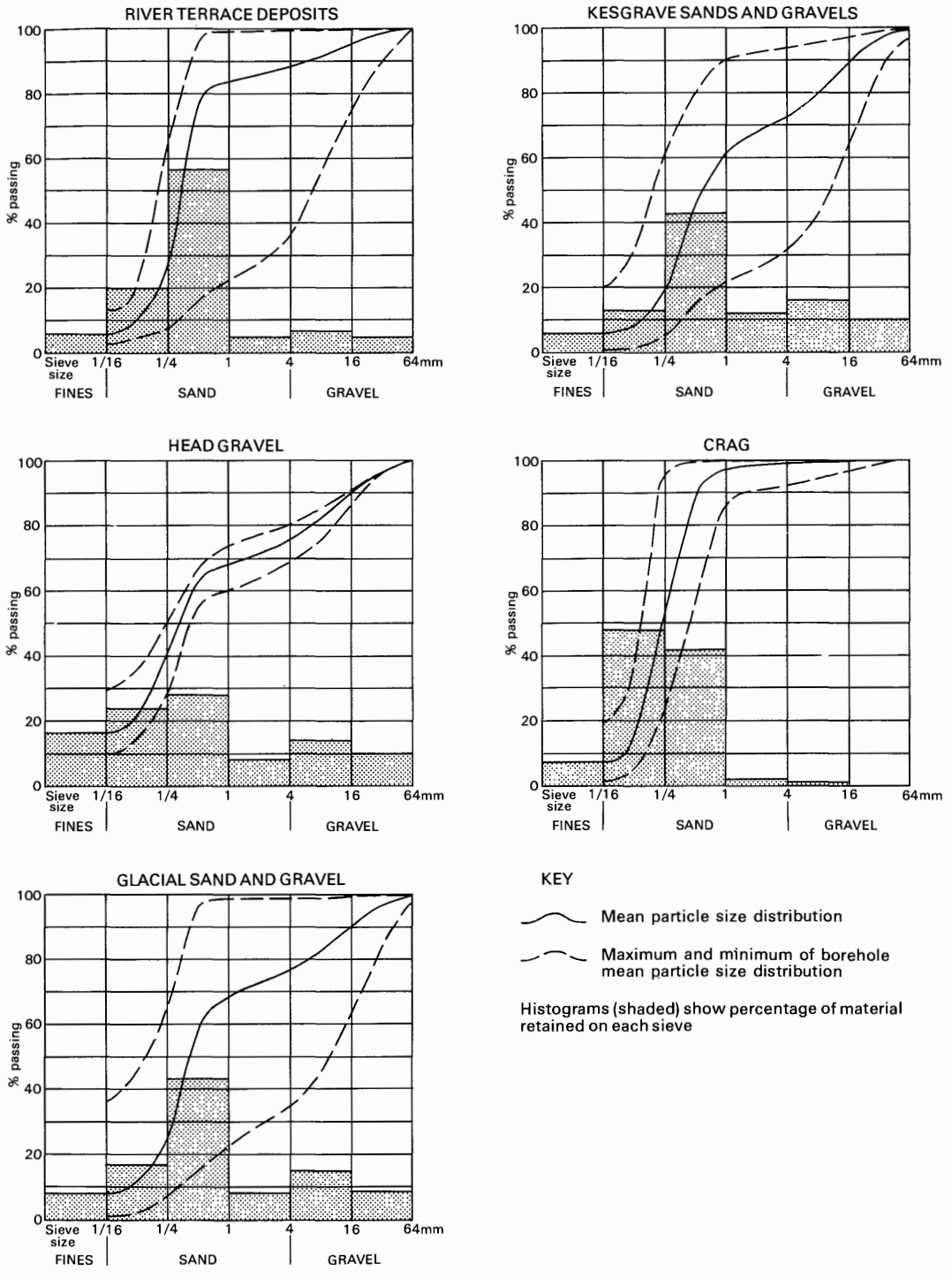


Figure 5 Mean grading characteristics of the mineral deposits.

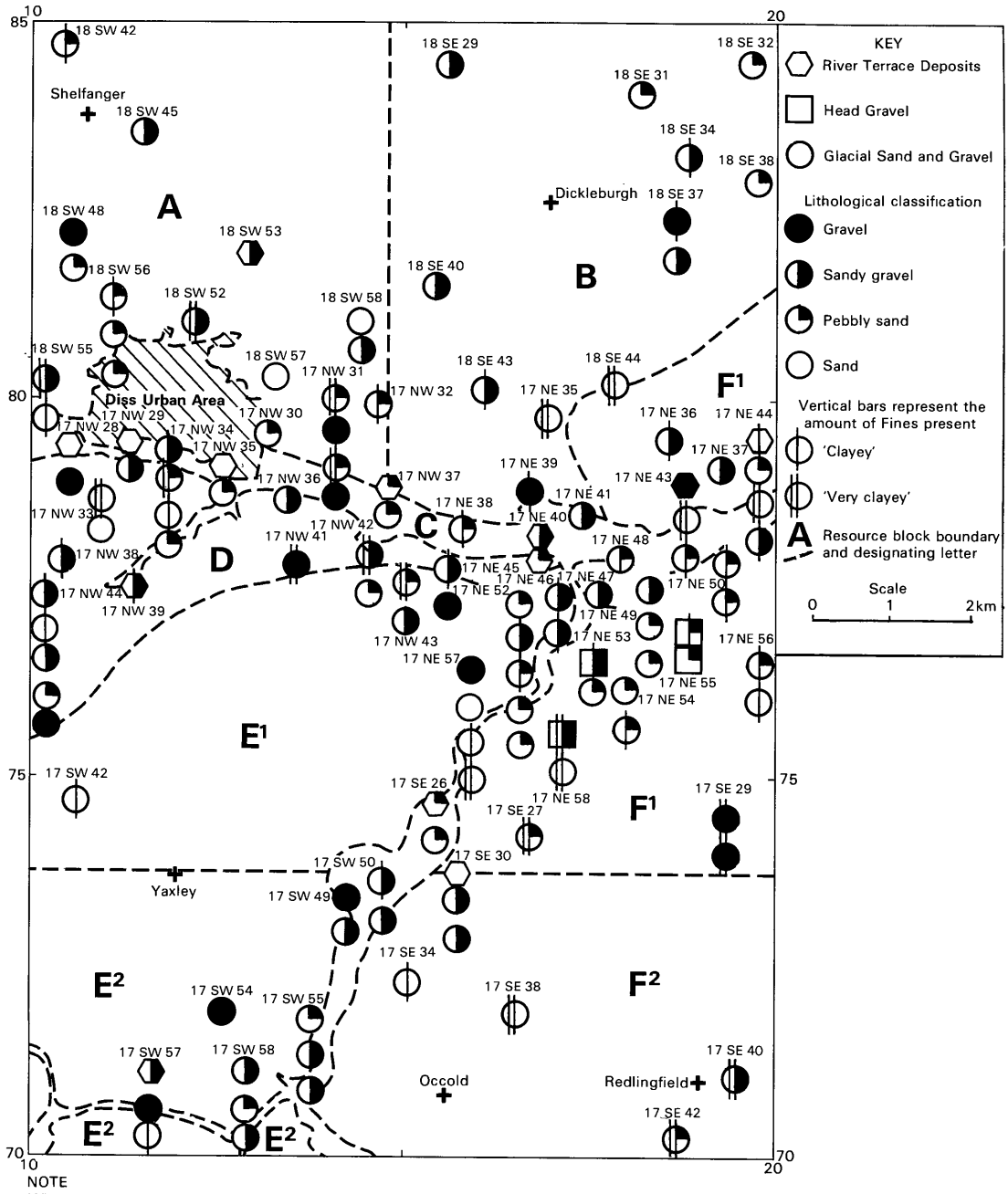
fines 6 per cent, sand 82 per cent and gravel 12 per cent and are thus classified as pebbly sand. Although three terrace levels have been mapped in this area, the deposits have not been separated for assessment purposes. Along the Waveney Valley, three assessment boreholes (17 NW 35, 17 NW 37, 17 NE 44) proved River Terrace Deposits overlying lithologically similar Glacial Sand and Gravel, the latter deposit being distinguished by the higher proportion of chalk pebbles in the gravel fraction.

The gravel fraction is composed of angular flint with subordinate quartzite and vein quartz and traces of chalk (Table 3).

The sand fraction is mainly composed of angular to subrounded quartz and flint, with fines disseminated throughout the deposit. The sand has a mean grading of fine sand 20 per cent, medium sand 57 per cent and coarse sand 5 per cent.

Mechanical and Physical Properties of the Aggregate

A series of mechanical and physcial tests have been conducted on oven-dried bulked samples of the +10-14 mm gravel fraction of the mineral deposits proved in assessment boreholes. Measurements of aggregate impact value (AIV), aggregate crushing value (ACV), relative density (on both oven-dried and surface-dried basis), apparent relative density and water absorption have been made in accordance with BS 812 (British Standards Institution, 1975)and the results are shown in Table 4. The Glacial Sand and Gravel deposits have been split into two categories for assessment of mechanical and physical properties to demonstrate the effect of chalk pebbles in the aggregate. The two categories are as follows: chalk-poor Glacial Sand and Gravel (≤15 per cent by weight chalk pebbles) and chalk-rich Glacial Sand and Gravel (>15 per cent by weight of chalk pebbles). Insufficient material was available to perform



NOTE
Where possible the mid-point of the borehole array corresponds to the actual position of the borehole on the map.
The figures include some non-mineral deposits.

Figure 6 The grading characteristics of the River Terrace Deposits, Glacial Sand and Gravel and Head Gravel proved in assessment boreholes.

aggregate tests on samples from the Crag, Ingham Sand and Gravel, and Head Gravel.

The resistance of an aggregate to both sudden load (AIV) and slowly-applied compressive load (ACV) affects its potential quality, particularly its suitability for use as roadstone or as concreting aggregate. The AIV for the chalk-rich Glacial Sand and Gravel was 36, which is above the level of reliability (30) specified for the test in BS 812. The AIV values for the three other deposits ranged from 22 to 24. Only sufficient material was available to perform aggregate crushing value tests on the chalk-poor Glacial Sand and Gravel and the Kesgrave Sands and Gravels, which gave results of 16 and 14 respectively.

The aggregate impact values are somewhat higher than might be expected and are well above the average calculated from Edwards (1970) for currently worked English gravels (AIV 17.5). The relative weakness of the chalk-rich Glacial Sand and Gravel is largely due to the presence of soft chalk in the aggregate. In the Kesgrave Sands and Gravels, the relative weakness of the aggregate may be due to the presence of some soft sandstone and ironstone pebbles. The higher ACV for the chalk-poor Glacial Sand and Gravel is due to the limited presence of chalk ($\leq$15 per cent) and soft sedimentary pebbles.

An important factor determing the load-bearing capacity and weather-resistance of concrete is its drying shrinkage, which is a function of the amount of water the aggregate can absorb. The water absorption values of the River Terrace Deposits (0.6) and Kesgrave Sands and Gravels (1.1) are below the average for currently worked English gravels (1.12). The higher water absorption values for the chalk-poor Glacial Sand and Gravel (1.6) and chalk-rich Glacial Sand and Gravel (3.8) reflect the abundance of porous chalk and soft sedimentary pebbles such as sandstone, limestone and mudstone.

The values for relative density show little variation between the deposits and cannot be correlated with known compositional differences.

Table 4 Results of mechanical and physical tests (conducted in accordance with BS 812 on oven-dried, bulked samples from assessment boreholes).

Deposit	Aggregate Impact Value	Aggregate Crushing Value	Relative Density		Apparent Relative Density	Water Absoption (%)
			Oven-dried	Surface-dried		
River Terrace Deposits	22	*	2.56	2.58	2.60	0.6
Glacial Sand and Gravel (Chalk-poor)	23	16	2.52	2.56	2.62	1.6
Glacial Sand and Gravel (Chalk-rich)	36	*	2.40	2.49	2.64	3.8
Kesgrave Sands and Gravels	24	14	2.54	2.57	2.62	1.1

* Insufficient material available for test

The Map

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

Geological data The geological boundary lines, symbols, etc., shown, are taken from the geological map of this area, which was surveyed recently at the scale of 1:10 000 by staff in the Institute's East Anglia and South East England Unit. The geological boundaries are the best interpretation of the information available at the time of survey. However, it is inevitable that local irregularities and discrepancies will be revealed as new evidence from boreholes and excavations becomes available.

Borehole data, which include the stratigraphic relations, thicknesses and mean particle size distribution of the sand and gravel samples collected during the assessment survey, are also shown on the map.

Mineral resource information The mineral-bearing ground is divided into resource blocks (see Appendix A). Within a resource block the mineral is subdivided into areas where it is exposed, that is where the overburden averages less than 1 m in thickness, and areas where it is present in continuous, or almost continuous, spreads beneath overburden. 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 and the distribution of barren boreholes within a block. 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, where boreholes indicate absence of sand and gravel beneath cover and where sand and gravel beneath cover is interpreted to be not potentially workable, are uncoloured on the map; where appropriate, the relevant criterion is noted. In such cases it has been assumed that mineral is absent except in infrequent and relatively minor patches that can neither be outlined nor assessed quantitatively in the context of this survey. Areas of unassessed sand and gravel, for example in built-up areas, are indicated by a red stipple.

The area of the mineral-bearing ground is measured, where possible, from the mapped geological boundary lines. The whole of this area is considered as mineral-bearing, even though it may include small areas where sand and gravel is not present or is not potentially workable. Inferred boundaries have been inserted to delimit areas where sand and gravel beneath cover is interpreted to be not potentially workable or absent. Such boundaries (for which a distinctive zigzag symbol is used) are drawn primarily for the purpose of volume estimation. The symbol is intended to indicate an approximate location within a likely zone of occurrence rather than to represent the breadth of the zone, its size being determined only by cartographic considerations. For the purpose of measuring areas the centre line of the symbol is used.

Results

The statistical assessment of resources for the whole sheet area is summarised in Table 5; a separate assessment is given for the resources of the Crag which occur in resource blocks C, E and F. Fuller grading particulars are shown in Figures 5, 6 and 7 and Table 2.

Accuracy of results For the six resource blocks, the accuracy of the results at the 95 per cent probability level (that is, on average nineteen out of every twenty sets of limits constructed in this way contain the true value for the volume of mineral) varies between 15 per cent and 53 per cent (Appendix B). However, the true volumes are more likely to be nearer the figure estimated than either of the limits. Moreover, it is probable that roughly the same percentage limits would apply for the statistical estimate of mineral volume within a very much smaller parcel of ground (say 100 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 would be required, even if the area were quite small. This point can be illustrated by considering the whole of the potentially workable sand and gravel in blocks A to F. The total volume (1178 million m^3) can be estimated to limits of $\pm$ 11 per cent at the 95 per cent probability level by a calculation based on the data from the 121 sample points spread across the four 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, as 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

The resource sheet has been subdivided into six resource blocks (A to F). The Crag, which is distributed between blocks, C, E and F, has been assessed both separately and

Table 5 Statistical assessment of the sand and gravel resources.

Resource block	Area		Mean Thickness		Volume of Mineral	Limits at the 95 % probability level		Mean grading percentages					
	Block	Mineral	Over-burden	Mineral			± volume	Fines	Sand			Gravel	
	km²	km²	m	m	$10^6 m^3$	± %	$10^6 m^3$	$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	+1-4	+4-16	+16-64 mm
A (15)*	24.7	17.3	9.2	6.1	106	30	32	8	19	45	7	12	9
B (14)	27.9	12.2	12.6	7.5	92	47	43	8	11	41	9	17	13
C (16)	8.6	8.6	4.0	8.3	71	35	25	7	22	48	7	10	6
D (11)	9.7	7.8	5.2	8.6	67	53	36	9	12	45	8	15	11
E (28)	35.1	29.8	11.1	12.1	361	15	54	7	31	45	6	8	3
F (37)	40.9	34.1	10.9	14.1	481	16	77	7	37	41	5	6	4
A to F	**146.9**	**109.9**	**9.4**	**10.6**	**1178**	**11**	**130**	**7**	**29**	**43**	**6**	**9**	**6**
Sub blocks													
E¹ (17)	20.7	18.4	9.9	13.2	242	16	39	8	34	46	5	5	2
E² (11)	14.4	11.4	12.7	10.5	119	37	44	3	21	43	9	17	7
F¹ (20)	20.0	19.9	9.0	15.9	311	24	75	7	33	42	6	8	4
F² (17)	20.9	14.2	12.9	12.1	170	23	40	8	48	36	3	3	2
Separate assessment of the Crag													
Crag (56)	-	68.9	-	9.9	682	15	102	7	48	42	2	1	0

* Figures in parentheses show the total number of sample points used in the statistical assessment of resources

together with the other mineral deposits in those blocks (Table 5). In the remaining blocks (A, B and D), the potentially workable sand and gravel has been assessed as a single mineral deposit. Since Blocks E and F cover large areas (35.1 and 40.9 km² respectively) they have been divided, for convenience, into sub-blocks (E¹ E² and F¹, F²) for which separate assessments of resources have been made, together with an assessment of each block as a whole. The volume of mineral for each block and its mean grading is given in Table 5.

In general, the deposits of Head (excluding Head Gravel) are considered to be not potentially workable, since they are often less than one metre thick and generally contain more than 40 per cent fines. However, where there is evidence to suggest that the Head deposits are mineral (as in borehole 17 NE 48), they have been included in the assessment of resources.

Block A Block A covers an area of 24.7 km², of which 17.3 km² are mineral-bearing. Much of the area is covered by Boulder Clay, which is very thick in the north around the village of Burston. The main mineral deposits in this block are Glacial Sand and Gravel and the Kesgrave Sands and Gravels. The former crops out along the southern margin of the block, where the River Waveney and an un-named stream north of Frenze Bridge have cut through the Boulder Clay overburden.

Several of the boreholes drilled on the Boulder Clay plateau (for example boreholes 18 SW 52, 55, and 56) proved Glacial Sand and Gravel within the Boulder Clay sequence. The lateral persistence of these sands and gravels is unknown; they are thought to be lenticular in form. Kesgrave Sands and Gravels underlie the Boulder Clay in the north-west around Shelfanger, where they were proved in four assessment boreholes (18 SW 42, 43, 45, and 49); they have a mean grading classification of sandy gravel. Assessment borehole 18 SW 53 proved mineral in the valley of an un-named tributary of the River Waveney which flows across the Boulder Clay plateau north-east of Diss. The mineral horizon (1.6 m thick, but of unknown lateral extent) underlies alluvium and may represent a river terrace.

The assessment of the mineral-bearing ground is based on data from 13 IMAU boreholes and the records of two auxiliary boreholes. The mineral has a maximum recorded thickness of 12.6 m in borehole 18 SW 56 and a minimum of 1.0 m in borehole 18 SW 52. The mean thickness of mineral is 6.1 m, and its estimated volume 106 million m³ (±30 per cent). Its mean grading is fines 8 per cent, sand 71 per cent and gravel 21 per cent, giving an overall classification of pebbly sand.

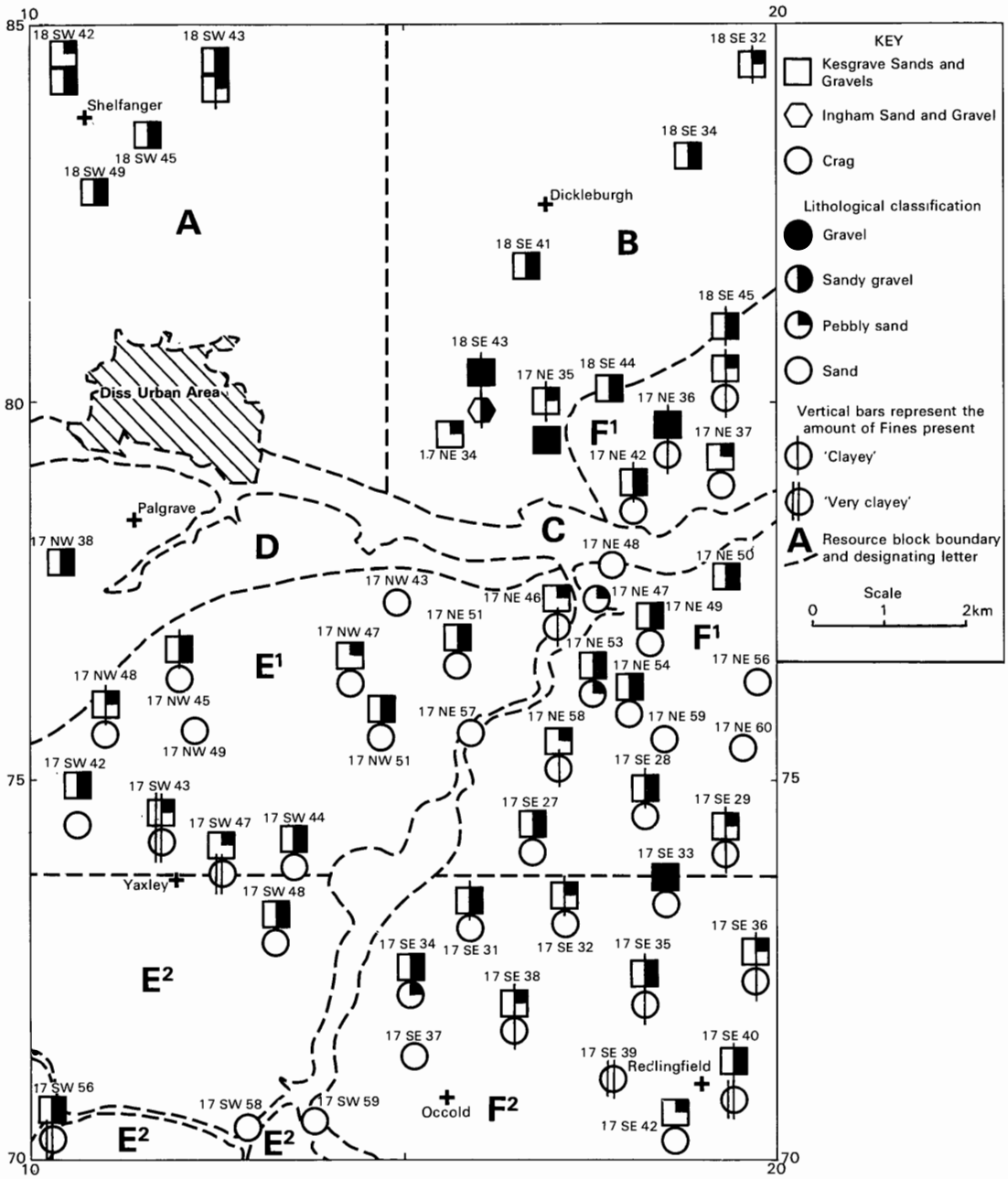
The overburden comprises mainly Boulder Clay with some Glacial Silt and has a mean thickness of 9.2 m; it ranges from 0.2 m in borehole 18 SW 57 (which was drilled within a patch of exposed sand and gravel) to 17.6 m in borehole 18 SW 55.

There are no active sand and gravel workings in the area, but there is a small disused gravel pit at Roydon [102 800] west of Diss.

Block B This block covers 27.9 m², of which 12.2 km² are mineral-bearing. Glacial Sand and Gravel crops out along the Waveney Valley at the southern margin of the block, with the remainder of the area covered by an extensive spread of Boulder Clay. In the north, in the Shimpling and Dickleburgh area, the Boulder Clay overburden becomes very thick and the underlying sand and gravel (which may be absent locally) is not potentially workable. This area forms an eastward extension of the thick Boulder Clay described at Burston in block A. At Rushall in the north-east there is an area of mineral beneath overburden, (see resource map and cross-section B-B1). In this area glacial sediments classified as mineral alternate with Boulder Clay and Glacial Silt. The varied nature of the sediments is demonstrated by three assessment boreholes (18 SE 34, 37, and 38) and four auxiliary boreholes (18 SE 14, 22, 24, and 28 in two of which, 18 SE 24 and SE 28 mineral is absent); the lateral persistence of these deposits is uncertain.

The assessment is based on data from ten IMAU boreholes and the records of four auxiliary boreholes. The mineral has a mean thickness of 7.5 m and ranges from 3.8 m in borehole 18 SE 34 to 17.6 m in borehole 18 SE 37; mineral is absent in three boreholes (18 SE 24, 28, and 43). The estimated volume of resources is 92 million m³ (±47 per cent). The overall classification of the mineral is sandy gravel with a mean grading of fines 8 per cent, sand 61 per cent and gravel 31 per cent.

Overburden is composed mainly of Boulder Clay and has a mean thickness of 12.6 m; it ranges in thickness from 7.2 m in borehole 18 SE 37 to 24.0 m in borehole 18 SE 43.



NOTE
Where possible the mid-point of the borehole array corresponds to the actual position of the borehole on the map.
The figures include some non-mineral deposits.

Figure 7 The grading characteristics of the Kesgrave Sands and Gravels, Ingham Sand and Gravel and Crag proved in assessment boreholes.

There are no active sand and gravel workings in the area, but there are small disused gravel pits east of Scole [160 785] and at Billingford [172 789].

Block C Block C covers 8.6 km² of mineral-bearing ground along the valleys of the River Waveney and the River Dove and its tributaries. The mineral deposits are formed principally by River Terrace Deposits and the underlying Glacial Sand and Gravel but also include sediments found within the glacial channel proved beneath the Waveney Valley (as in boreholes 17 NE 38, 43, and 44). In several boreholes (e.g. 17 NW 35, 17 NW 37 and 17 NE 44) it has proved difficult to separate the terrace deposits from underlying Glacial Sand and Gravel. In other boreholes (e.g. 17 NW 29, 17 NW 39, 17 NE 43 and 17 SE 26) the River Terrace Deposits overlie thick waste, although sand and gravel classified as 'mineral' may be present beneath.

Based on data from 16 IMAU boreholes, the mean thickness of the mineral is 8.3 m. Proved thicknesses range from 1.3 m in borehole 17 NW 39 to 17.4 m in borehole 17 NE 44. The estimated total volume of mineral present within this block is 71 million m³ (±35 per cent). The mean grading of the mineral is fines 7 per cent, sand 77 per cent and gravel 16 per cent, which corresponds to a classification of pebbly sand.

Overburden occurs mainly as peat and alluvium and some Boulder Clay forms waste within the mineral sequence. Together they have a mean thickness of 4.0 m and combined thicknesses range from 0.2 m in borehole 17 NW 39, which was drilled within and area of second terrace, to 13.5 m in borehole 17 NE 43, where the sequence includes Boulder Clay and Glacial Silt.

There are no active or disused sand and gravel workings within the block although similar deposits are worked beneath the floodplain of the River Waveney at Weybread, 6 km downstream.

Block D This block, covering 9.7 km², is bounded to the north by the Waveney valley and to the south by the

conjectural northern limit of the Crag; it contains 7.8 km² of mineral-bearing ground. A barren area (in which the ratio of thickness of overburden to that of mineral exceeds 3 to 1) occurs east of Stuston, where three assessment boreholes (17 NW 39, 40, and 41) and an auxiliary borehole (18 NW 7) proved a very thick Boulder Clay sequence infilling a glacial channel (see cross-section A-A¹ at foot of resource map). The main mineral deposit is the Glacial Sand and Gravel which crops out along the valley sides and is present both beneath the Boulder Clay and as irregular shaped bodies within it. A linear body of Glacial Sand and Gravel crops out on the Boulder Clay plateau south-west of Palgrave.

The assessment of resources is based on seven IMAU boreholes and the records of four auxiliary boreholes. The mineral has a mean thickness of 8.6 m, and values ranging from 1.7 m in borehole 17 NW 36 to 19.8 m in borehole 17 NW 22 have been included in the calculation. The estimated volume of resources is 67 million m³ (±53 per cent). The overall classification of the mineral is sandy gravel, based on a mean grading of fines 9 per cent, sand 65 per cent and gravel 26 per cent.

Overburden is composed mainly of Boulder Clay with some thin Head and alluvial deposits in the valley bottoms. It has a mean thickness of 5.2 m but ranges from 0.0 m in borehole 17 NW 22 to 18.0 m in borehole 17 NW 33. There are no active sand and gravel workings in the block.

Block E Block E covers 35.1 km², of which 29.8 km² are mineral-bearing. The block has been divided for convenience into two sub-blocks E¹ and E². Sub-block E¹ covers 20.7 km² (18.4 km² are mineral-bearing) on the northern part of block E with the northern block boundary coincident with the conjectural limit of the Crag. The southern part of the block (sub-block E²) covers 14.4 km² with 11.4 km² of mineral-bearing ground. A separate resource assessment has been made for each sub-block (Table 5). The main mineral deposits in the block are the Kesgrave Sands and Gravels and Crag. The Kesgrave Sands and Gravels form a sub-horizontal sheet beneath the Boulder Clay and overlie the thick deposits of Crag infilling the Brome Trough (see cross-section B-B¹ at foot of resource map). Some Glacial Sand and Gravel crops out along the Dove Valley and part of the Waveney Valley. Much of the area is covered by Boulder Clay, which becomes very thick around Chestnut Farm, Eye (sub-block E¹) and Braiseworth (sub-block E²).

The block assessment is based on data from 18 IMAU boreholes and 10 auxiliary boreholes. The mineral has a mean thickness of 12.1 m and ranges from 4.8 m in borehole 17 SW 1 to 20.6 m in borehole 17 NW 43; mineral is absent in one borehole (17 SW 46). The estimated volume of the resource is 361 million m³ (±15 per cent) with the resources of sub-blocks E¹ and E² being 242 million m³ (±16 per cent) and 119 million m³ (±37 per cent) respectively.

Overall classification of the mineral deposit is pebbly sand with a mean grading of fines 7 per cent, sand 82 per cent and gravel 11 per cent. Mean gradings of the sub-blocks are: E¹, fines 8 per cent, sand 85 per cent and gravel 7 per cent giving a classification of pebbly sand; E², fines 3 per cent, sand 73 per cent and gravel 24 per cent which also falls within the category of pebbly sand. The higher proportion of pebbles in the mineral resources of sub-block E² is due to pebbly Glacial Sand and Gravel being thicker along the eastern margin of the Dove Valley than in sub-block E¹. The Kesgrave Sands and Gravels are also slightly thicker than in sub-block E¹.

Overburden is predominantly Boulder Clay and has a mean thickness of 11.1 m for the block as a whole with mean thicknesses of 9.9 m and 12.7 m for sub-blocks E¹ and E² respectively. It ranges from 0.6 m (borehole 17 NW 45) to 17.0 m (borehole 17 SW 5) in sub-block E¹ and from 4.5 m (borehole 17 SW 58) to 16.8 m thick (borehole 17 SW 31) in sub-block E².

Block F Block F covers 40.9 km², of which 34.1 km² are mineral-bearing: it has been sub-divided into a northerly sub-block (F¹), and a southerly sub-block, (F²). Sub-block F¹ covers 20.0 km², of which 19.9 km² are mineral bearing; the northern boundary is coincident with the conjectural limit of the Crag and includes the area around Brockdish north of the River Waveney. The southern part of the block (sub-block F²) covers 20.9 km² with 14.2 km² of mineral-bearing ground. The River Dove forms the western margin of both sub-blocks. Much of the area is Boulder Clay plateau, which rises to over +56 m OD around Occold and Redlingfield in the southern part of the block, where the overburden is very thick. Glacial Sand and Gravel crops out along the valleys of the Waveney and the two tributaries of the River Dove which flow through Hoxne. The Glacial Sand and Gravel outcrop at Hoxne may include some Kesgrave Sands and Gravels, although these have not been differentiated on the accompanying resource map. The Kesgrave Sands and Gravels form a sub-horizontal sheet beneath the Boulder Clay and overlie the Crag which fills the Stradbroke Trough.

The assessment of resources for the block as a whole is based on data from 27 IMAU boreholes and records from 10 auxiliary boreholes. The mean thickness of the mineral is 14.1 m and recorded thicknesses range from 5.0 m in borehole 17 NE 55 to 24.4 m in 17 NE 48; mineral is absent in two boreholes (17 NE 36, 17 SE 13). The estimated total volume of mineral present within the block is 481 million m³ (±16 per cent), with the resources of sub-blocks F¹ and F² amounting to 311 million m³ (±24 per cent) and 170 million m³ (±23 per cent) respectively. The mean grading of the mineral is fines 7 per cent, sand 83 per cent and gravel 10 per cent, giving an overall classification of pebbly sand. Mean gradings of the sub-blocks are similar to that of the block as a whole (Table 5) although sub-block F² has an overall classification of sand.

Overburden comprises mainly Boulder Clay with some Head and alluvial deposits and has a mean thickness for the block of 10.9 m, with mean thicknesses of 9.0 m and 12.9 m for sub-blocks F¹ and F² respectively. It ranges in thickness from 0.3 m in borehole 17 NE 55, which was drilled within an outcrop of Head Gravel, to 16.8 m (borehole 17 SE 29) in sub-block F¹, and from 1.1 m (borehole 17 SE 33) to 17.8 m (borehole 17 SE 35) in sub-block F².

There are no active sand and gravel workings in the area, but there is a small disused gravel pit at Hoxne [186 771]. The pit shown on the resource map at Fairstead Farm, Hoxne, [176 767] is Banham's Brickpit, which is now worked out.

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APPENDIX A

FIELD AND LABORATORY PROCEDURES

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

The mineral shown on each 1:25 000 sheet is divided into resource blocks. The arbitrary size selected 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.

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.

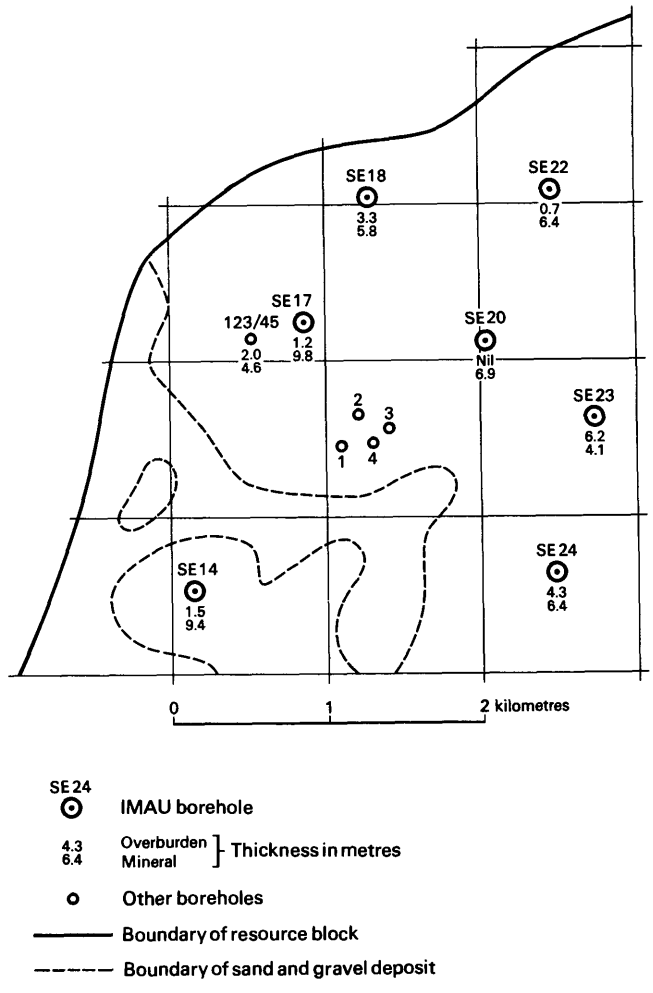
The drilling machine employed should be capable of providing a continuous sample representative of all unconsolidated deposits, so that the in-situ grading can be determined, if necessary, to a depth of 30 m at a diameter of about 200 mm, beneath different types of overburden. It should be reliable, 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 B.S. 1337 (British Standards Institution, 1967). Random checks of the accuracy of the grading are made in the Institute's laboratories.

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 E.

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



Example of resource block assessment: map of a fictitious block

APPENDIX B

STATISTICAL PROCEDURE

Statistical assessment

1 A statistical assessment is made of an area of mineral greater than 2 km^2, if there are at least 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 (Hull, 1981). Conventional symmetrical confidence limits are calculated for the 95 per cent probability level, that is, on average nineteen out of every twenty sets of limits constructed in this way contain the true value for the volume of mineral.

3 The volume estimate (V) for the mineral in a given block is the product of 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

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

4 The above relationship may be transposed such that

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

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 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

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

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

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

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 a deposit). Where the area is not defined by a mapped boundary, that is, where the boundary is inferred, a distinctive symbol is used. Experience suggests that the errors in determining area are small relative to those in thickness. The relationship $S_A / S_{\bar{l}_m} \leqq 0.\dot{3}$ is assumed in all cases. It follows from Equation [2] that

$$S_{\bar{l}_m} \leqq S_V \leqq 1.05\ S_{\bar{l}_m} \qquad [3]$$

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 in *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:

$$L_{\bar{l}_m} \leqq L_V \leqq 1.05\, L_{\bar{l}_m}.$$

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

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

per cent,

and when n is greater than 20, as

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

per cent.

11 The application of this procedure to a fictitious area is illustrated in the accompanying Figure and example of a block calculation.

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 on the basis of 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 needs to 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 with the zone as the weighting factor.

Block calculation

Scale: 1:25 000
Block: Fictitious

Area
Block: 11.08 km²
Mineral: 8.32 km²

Mean thickness
Overburden: 2.5 m
Mineral: 6.5 m

Volume
Overburden: 21 million m³
Mineral: 54 million m³

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 m³

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	
123/45	½	2.0		4.6		Hydrogeology Unit record
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	$\lvert(wl_m - \overline{wl}_m)\rvert$	$(wl_m - \overline{wl}_m)^2$
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

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

$= 1.05 \times (2.365/6.5)\ \sqrt{[15.82/(8 \times 7)]} \times 100$

$= 20.3$

$\simeq 20$ per cent.

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 (< $\frac{1}{16}$ mm) and coarser than pebbles (> 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 considered to be not 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 the accompanying Figure). The procedure is as follows:

1 Classify according to the ratio of sand to gravel.

2 Describe the 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 Appendix D)

Many differing proposals have been made 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 (see the accompanying table), which is used in the 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 fine gravel (+4 -16 mm), from larger pebbles. The boundary at 64 mm distinguishes pebbles from cobbles.

The size distribution of borehole samples is determined by sieve analysis, which is presented by the laboratory as logarithmic cumulative curves (see, for example, British Standards Institution, 1967). In this report the grading is tabulated on the borehole record sheets (Appendix E), 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 roughly 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 constitutents 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. Origninal 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.

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

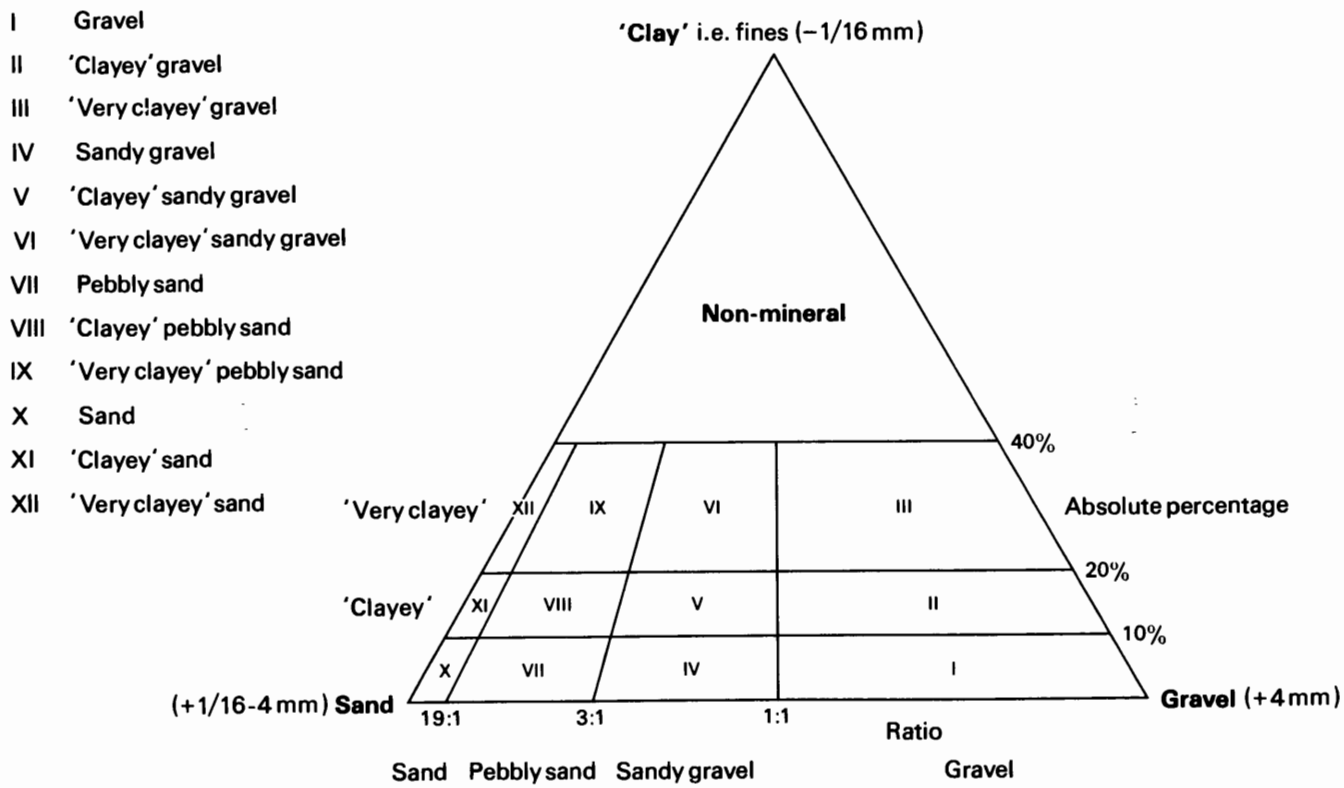


Diagram showing the descriptive categories used in the classification of sand and gravel

APPENDIX D

EXPLANATION OF THE BOREHOLE RECORDS

Annotated fictitious example

CK 66 NW 5[1] **6191 6962**[2] **Northfields**[3] **Block B**

Surface level c.+49.7 m (+163 ft)[4]
Water struck at +45.9 m[5]
October 1972[6]

Overburden[7] 2.8 m
Mineral 5.4 m
Waste 1.1 m
Mineral 1.4 m
Bedrock 0.7 m+[8]

LOG

Geological classification	Lithology[9]	Thickness m	Depth m
	Soil	0.2	0.2
Alluvium	Clay, silty, dark brown	2.6	2.8
River Terrace Deposits	**a** Gravel Gravel: fine to coarse, with cobbles towards base, angular to rounded flint and limestone with ironstone and some quartz and chalk Sand: medium with coarse and some fine, quartz and limestone	5.4	8.2
Boulder Clay	Clay, sandy and pebbly, red-brown	1.1	9.3
Glacial Sand and Gravel	**b** Sand, 'clayey' in part: fine, subangular to rounded, quartz with some coal	1.4	10.7
Lias	Mudstone, blue-grey, fossiliferous	0.7+	11.4

GRADING[10]

	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 mm
a	5	46	49	2.8-3.9	20	14	62	2	2	0	0
				3.8-4.8	2	2	12	18	42	24	0
				4.8-5.8	1	3	24	13	35	24	0
				5.8-6.8	0	4	21	20	26	29	0
				6.8-8.2	4	3	23	10	23	30	7
				Mean	**5**	**5**	**28**	**13**	**25**	**22**	**2**
b	5	95	0	9.3-10.3	3	73	23	1	0	0	0
				10.3-10.7	9	85	5	1	0	0	0
				Mean	**5**	**77**	**17**	**1**	**0**	**0**	**0**
a+b	**5**	**56**	**39**	**Mean**	**5**	**20**	**26**	**10**	**20**	**17**	**2**

COMPOSITION[11]

Depth below surface (m)	percentages by weight in the +8-16 mm fraction					
	Flint	Quartz	Limestone	Chalk	Ironstone	Others
3.8-4.8	40	5	50	1	3	1
4.8-5.8	38	3	45	5	8	1
5.8-6.8	45	2	42	5	6	trace
6.8-8.2	18	6	61	3	11	1
Mean	**34**	**4**	**51**	**3**	**7**	**1**

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

1 Borehole Registration Number
Each Industrial Minerals Assessment Unit (IMAU) borehole is identified by a Registration Number. This consists of two statements.

a The number of the 1:25 000 sheet on which the borehole lies, here CK 66.
b The quarter of the 1:25 000 sheet on which the borehole lies and the number of the borehole in a series for that quarter, here NW 5.

Thus the full Registration Number is CK 66 NW 5.

2 National Grid Reference
All National Grid References fall in the 100 km square identified by the first two letters of the Registration Number. Grid references are given to eight figures, accurate to within 10 m.

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 the borehole lies is stated.

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

5 Groundwater conditions
If groundwater was present the level at which it was encountered is normally given (in metres relative to Ordnance Datum).

6 Type of drill and date of drilling
The type of rig used, the diameter of the casing and the month and year of completion of drilling 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 The plus sign (+) indicated that the base of the deposit was not reached during drilling.

9 Lithological description
When sand and gravel is recorded a general description based on the grading characteristics (for details see Appendix C) is followed by more detailed particulars of the gravel and/or sand fraction. Where more than one bed of mineral is recognised each is designated by a letter, e.g. **a, b,** etc. The description of other deposits is based on visual examination in the field.

10 Grading data
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 or at every 1 m of depth.

For each bulk sample the percentages of 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 (+16-64 mm) and cobble gravel (+64 mm) are stated.

The mean grading of groups of samples making up an identified bed of mineral are also given in detail and in summary. Where more than one bed is recognised the mean grading for the whole of the mineral in the borehole may be given. Where necessary, in calculating mean gradings, data for individual samples are weighted by the thickness represented. If, exceptionally, grading results are not available for a sample, an attempt may be made to estimate the grading by comparing the grading and field descriptions of adjacent samples with the sample in question. Such estimates are shown in square brackets. Alternatively, in calculating means, the sample may be allotted the mean grading of other samples in the deposit.

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

11 Composition
Details of the composition of part of the fine gravel fraction (+8 -16 mm) may be given. The category 'others' includes igneous and sedimentary rocks which occur in trace amounts.

APPENDIX E
INDUSTRIAL MINERALS ASSESSMENT UNIT BOREHOLE RECORDS

TM 17 NW 28 1035 7938 North of Oak Farm, Palgrave **Block C**

Surface level +22.6 m (+74 ft)
Water struck at +21.2 m
Shell and auger 152 mm
June 1981

Overburden 0.6 m
Mineral 8.8 m
Waste 3.9 m
Mineral 1.4 m
Waste 7.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil	0.1	0.1
Peat	Peat, silty and clayey, black, very soft, contains wood fragments and decayed rootlets	0.5	0.6
?River Terrace Deposits	**a** Sand Sand: medium with fine, rounded to subangular quartz, pale yellowish brown becoming dark yellowish brown below 1.4 m	8.8	9.4
?Glacial Silt	Silt, dark yellowish brown, soft to firm, rare thin (1-2 mm) laminae of orange sand	3.9	13.3
Glacial Sand and Gravel	**b** Gravel Gravel: fine with coarse, mostly angular to subangular flint with rounded quartz and quartzite Sand: coarse and medium with some fine, rounded quartz and quartzite	1.4	14.7
Glacial Silt	Silt, dark yellowish brown, poorly laminated	4.8	19.5
Boulder Clay	Clay, slightly silty, olive grey, hard, many fine pebbles of rounded chalk and some subangular chalk	2.5+	22.0

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 mm
a	7	93	0	0.6-1.6	5	26	67	1	1	0	0
				1.6-2.6	4	16	79	1	0	0	0
				2.6-3.6	7	25	68	0	0	0	0
				3.6-4.6	10	14	76	0	0	0	0
				4.6-5.6	6	12	82	0	0	0	0
				5.6-6.6	8	17	74	1	0	0	0
				6.6-7.6	5	12	83	0	0	0	0
				7.6-9.4	9	17	74	0	0	0	0
				Mean	7	**17**	**76**	**trace**	**trace**	**0**	**0**
b	4	35	61	13.3-14.3	5	3	16	15	47	14	0
				14.3-14.7	4	3	17	16	42	18	0
				Mean	**4**	**3**	**16**	**16**	**46**	**15**	**0**
a+b	**6**	**86**	**8**	**Mean**	**6**	**15**	**69**	**2**	**6**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	13.3-14.3	75	0	13	10	0	2
	14.3-14.7	70	1	12	14	1	2

TM 17 NW 29 1138 7922 Elm Vale, Palgrave **Block C**

Surface level +24.3 m (+80 ft)
Water struck at +22.7 m
Shell and auger 152 mm
June 1981

Overburden 0.3 m
Mineral 4.9 m
Waste 15.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, dusky yellowish brown	0.3	0.3
River Terrace Deposits	**a** Sand, with rare flint pebbles Sand: medium and fine, subrounded to subangular quartz, yellowish orange	4.1	4.4
Glacial Sand and Gravel	**b** Sandy gravel Gravel: coarse with fine, subangular to subrounded flint with rounded chalk, quartzite and some quartz	0.8	5.2
Boulder Clay	Pebbly clay, sandy, light olive grey becoming dark grey below 6.4 m, firm, some chalk pebbles above 6.4 m, abundant rounded chalk and some angular flint and subangular grey siltstone below 6.4 m	11.8	17.0
Glacial Silt	Silt, dark grey, hard, some flint sand and a trace of flint pebbles, becoming laminated and softer below 18.6 m	3.8+	20.8

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 mm
a	5	94	1	0.3-1.3	5	47	46	1	1	0	0
				1.3-2.3	5	40	52	1	2	0	0
				2.3-3.3	5	53	40	1	1	0	0
				3.3-4.4	6	42	48	1	1	2	0
				Mean	**5**	**46**	**47**	**1**	**1**	**trace**	**0**
b	7	64	29	4.4-5.2	7	25	36	3	8	21	0
a+b	**5**	**89**	**6**	**Mean**	**5**	**42**	**46**	**1**	**2**	**4**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	4.4-5.2	75	0	1	5	12	7

TM 17 NW 30 **1320 7952** **North of Frenze Bridge, Diss** **Block A**

Surface level +23.0 m (+75 ft)
Water struck at +19.2 m
Shell and auger 152 mm
July 1981

Overburden 3.8 m
Mineral 9.6 m
Bedrock 6.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey, dusky yellowish brown, firm	0.2	0.2
Peat	Peat, silty, rare sand grains, brownish black, soft, some nodules of brown clay as below	1.5	1.7
	Clay, silty, dark yellowish brown, firm	0.1	1.8
	Peat, with wood fragments at top and shell fragments in basal 1 metre	2.0	3.8
Glacial Sand and Gravel	Pebbly sand Gravel: fine and coarse, angular to subrounded flint with quartzite and some quartz and chalk Sand: medium and fine with coarse, subrounded to rounded quartz with subangular to subrounded flint and some rounded chalk	9.6	13.4
Upper Chalk	Chalk, firm	6.7+	20.1

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 mm
9	69	22	3.8-4.8	3	5	29	14	24	25	0
			4.8-6.0	3	5	27	14	24	27	0
			6.0-7.0	26	9	42	7	10	6	0
			7.0-8.0	5	18	58	8	10	1	0
			8.0-9.0	1	13	38	8	18	19	3
			9.0-9.8	4	38	40	4	10	4	0
			9.8-11.0	9	72	19	0	0	0	0
			11.0-13.4	13	46	25	4	7	5	0
			Mean	**9**	**29**	**33**	**7**	**12**	**10**	**trace**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
3.8-4.8	87	1	5	7	trace	0
4.8-6.0	87	0	6	5	trace	2
6.0-7.0	93	0	3	3	1	0
7.0-8.0	91	2	1	0	6	trace
8.0-9.0	88	1	1	3	7	0
9.0-9.8	83	2	4	3	7	1
Mean	**88**	**1**	**4**	**4**	**3**	**trace**

TM 17 NW 31 **1434 7935** **Miller's Lane, Scole** **Block A**

Surface level +36.5 m (+120 ft)
Water struck at +28.2 m
Shell and auger 152 mm
July 1981

Overburden 6.1 m
Mineral 1.3 m
Waste 0.9 m
Mineral 2.3 m
Bedrock 1.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.5	0.5
Boulder Clay	Pebbly clay, silty, mottled dark yellowish brown and moderate yellowish brown with dark yellowish orange, hard, pebbles of rounded chalk, angular to subrounded flint and rounded siltstone	3.3	3.8
Glacial Sand and Gravel	**a** 'Very clayey' pebbly sand with small nodules of sandy silty clay, becoming sandy clay below 4.4 m Gravel: fine and coarse, subrounded to subangular flint and rounded quartz and quartzite Sand: medium and fine, rounded to subrounded quartz	1.0	4.8
?Boulder Clay	Clay, silty to sandy, dusky yellow green, with some flint pebbles	1.3	6.1
?Glacial Sand and Gravel	**b** 'Clayey' gravel, nodules of pale brown silty clay Gravel: fine and coarse, rounded to subangular flint with rounded quartz and quartzite Sand: medium with coarse and fine, flint, quartz and quartzite	1.3	7.4
?Glacial Silt	Silt, yellowish grey, very hard, with layers of yellowish orange sand, trace of flint pebbles	0.9	8.3
?Glacial Sand and Gravel	**c** 'Very clayey' pebbly sand with nodules of silty clay Gravel: fine, mostly flint Sand: medium with fine and some coarse, rounded iron-stained quartz	0.7	9.0
Glacial Sand and Gravel	**d** Gravel Gravel: coarse and fine, angular to subrounded flint, rounded quartz and quartzite with subangular chert and rounded igneous clasts Sand: medium with coarse and some fine, rounded to subrounded quartz and quartzite with some subangular flint	1.6	10.6
Upper Chalk	Chalk, orange-white	1.9+	12.5

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 mm
a	31	54	15	3.8-4.4	25	22	29	4	10	10	0
				4.4-4.8	40	24	26	2	4	4	0
				Mean	**31**	**23**	**28**	**3**	**8**	**7**	**0**
b	12	42	46	6.1-7.4	12	9	21	12	29	17	0
c	20	75	5	8.3-9.0	20	26	45	4	5	0	0
d	2	39	59	9.0-10.0	1	3	24	12	25	35	0
				10.0-10.6	3	4	25	12	28	28	0
				Mean	**2**	**3**	**24**	**12**	**26**	**33**	**0**
b+c+d	**9**	**48**	**43**	**Mean**	**9**	**10**	**27**	**11**	**23**	**20**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	6.1-7.4	45	0	29	23	0	3
d	9.0-10.0	32	0	31	27	0	10
	10.0-10.6	34	0	26	29	1	10

TM 17 NW 32 **1469 7994** **Long House, Scole** **Block A**

Surface level +43.7 m (+143 ft)
Water struck at +26.8 m
Shell and auger 152 mm
July 1981

Overburden 11.9 m
Mineral 4.8 m
Waste 0.2 m
Bedrock 2.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty and sandy, dark brown	0.4	0.4
Boulder Clay	Pebbly clay, mottled medium grey with greyish orange becoming dark grey below 1.5 m, very hard, many pebbles of chalk with some flints below 1.5 m	8.7	9.1
	Clay, very silty, dark yellowish brown, firm to hard, fine pebbles of rounded chalk with angular to subangular flint and subangular to subrounded quartz and quartzite	2.8	11.9
Glacial Sand and Gravel	'Clayey' pebbly sand Gravel: fine and coarse, angular to subangular flint and rounded to subrounded quartzite and quartz Sand: medium with fine and coarse, rounded to subrounded quartz with some subangular flint fragments	4.8	16.7
Boulder Clay	Clay, sandy, deep yellowish brown, very hard, many pebbles of rounded quartzite with some flint	0.2	16.9
Upper Chalk	Chalk, brownish white	2.1+	19.0

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 mm
13	66	21	11.9-12.9	13	32	44	4	5	2	0
			12.9-13.9	17	12	68	2	1	0	0
			13.9-15.0	15	12	41	10	13	9	0
			15.0-16.0	13	8	30	14	24	11	0
			16.0-16.7	3	2	27	17	29	22	0
			Mean	**13**	**14**	**43**	**9**	**13**	**8**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
13.9-15.0	21	0	26	49	0	4
15.0-16.0	46	0	26	25	0	3
16.0-16.7	39	1	34	20	0	6
Mean	**37**	**trace**	**30**	**29**	**0**	**4**

TM 17 NW 33 **1073 7861** **Millway Road, Palgrave** **Block D**

Surface level +45.2 m (+148 ft)
Water struck at +26.0 m
Shell and auger 152 mm
June 1981

Overburden 18.0 m
Mineral 7.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy brown	0.3	0.3
Boulder Clay	Clay, sandy, mottled dusky yellowish brown, moderate yellowish brown and strong yellowish orange, firm to hard, some pebbles of flint above 1.6 m and fine pebbles of chalk and flint below 1.6 m	3.0	3.3
	Silt, clayey, medium dark grey, firm	0.9	4.2
	Pebbly clay, silty, dark grey becoming olive black below 7.1 m, hard, many pebbles of rounded to subangular chalk with angular to subangular flint	13.8	18.0
Glacial Sand and Gravel	**a** 'Very clayey' sand Sand: fine with medium, brownish grey	1.2	19.2
	b Sand Sand: medium with fine, angular to subrounded flint, quartz and some shale, dark yellowish brown	5.8+	25.0

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 mm
a 35	62	3	18.0-19.2	35	43	17	2	3	0	0
b 3	95	2	19.2-21.2	5	24	70	1	0	0	0
			21.2-23.2	3	9	87	1	0	0	0
			23.2-25.0	1	10	79	3	4	3	0
			Mean	**3**	**14**	**79**	**2**	**1**	**1**	**0**
a+b 9	**88**	**3**	**Mean**	**9**	**19**	**67**	**2**	**2**	**1**	**0**

TM 17 NW 34 **1188 7868** **Rose Lane, Palgrave** **Block D**

Surface level +42.4 m (+139 ft)
Water struck at +38.6 m
Shell and auger 152 mm
June 1981

Overburden 0.3 m
Mineral 4.9 m
Waste 10.3 m
Mineral 6.4 m
Bedrock 2.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy and pebbly, brown	0.3	0.3
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: fine and coarse, angular to subrounded flint with rounded quartzite and quartz and some flint Sand: medium with fine and coarse, subrounded quartz and subangular flint, heavily iron-stained	4.5	4.8
	b 'Very clayey' pebbly sand Gravel: fine with coarse, angular flint Sand: medium with fine and some coarse, subrounded quartz and angular flint	0.4	5.2
Boulder Clay	Pebbly clay, silty, moderate yellowish brown to dark yellowish brown, becoming dark grey below 5.9 m, soft to hard, many subrounded chalk pebbles with subangular flint and subrounded siltstone	7.1	12.3
	Clay, sandy, light grey becoming greyish yellowish brown below 14.4 m, subangular to subrounded chalk and angular flint pebbles	3.2	15.5
Glacial Sand and Gravel	**c** 'Clayey' sand, thin layers of silt above 18.5 m Sand: medium with fine, rounded to subrounded quartz with some subrounded to subangular mudstone, light olive brown	4.0	19.5
?Glacial Sand and Gravel	**d** Pebbly sand Gravel: fine with coarse, angular to subrounded flint with rounded quartz and subrounded quartzite and a trace of chalk Sand: medium with coarse and fine, rounded quartz with fragments of flint	2.4	21.9
Upper Chalk	Chalk	2.1+	24.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	14	58	28	0.3-1.3	10	10	43	5	13	19	0
				1.3-2.2	11	13	40	5	15	16	0
				2.2-3.3	14	9	38	9	20	10	0
				3.3-3.8	18	10	49	7	12	4	0
				3.8-4.8	17	5	44	8	14	12	0
				Mean	**14**	**9**	**42**	**7**	**15**	**13**	**0**
b	37	59	4	4.8-5.2	37	13	41	5	3	1	0
c	15	85	0	15.5-16.5	33	40	26	1	0	0	0
				16.5-17-5	15	22	63	0	0	0	0
				17.5-18.5	8	19	73	0	0	0	0
				18.5-19.5	4	12	83	1	0	0	0
				Mean	**15**	**23**	**61**	**1**	**trace**	**0**	**0**
d	3	84	13	19.5-20.5	4	7	66	9	10	4	0
				20.5-21.9	2	10	65	10	12	1	0
				Mean	**3**	**9**	**65**	**10**	**11**	**2**	**0**
a+b+c+d	**13**	**72**	**15**	**Mean**	**13**	**14**	**53**	**5**	**9**	**6**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.3-1.3	85	0	4	8	0	3
	1.3-2.2	84	0	5	10	0	1
	2.2-3.3	88	4	3	4	0	1
	3.3-3.8	91	7	2	0	0	0
	3.8-4.8	84	0	6	7	1	2
	Mean	**86**	**2**	**4**	**6**	**trace**	**1**
d	19.5-21.9	68	0	9	16	1	6

TM 17 NW 35 **1259 7891** **South of the Mill, Palgrave** **Block C**

Surface level +24.7 (+81 ft)
Water struck at +23.6 m
Shell and auger 152 mm
June 1981

Overburden 0.4 m
Mineral 13.2 m
Waste 4.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown, some flint pebbles	0.4	0.4
River Terrace Deposits	**a** Sand Gravel: fine with some coarse, angular to subangular flint with some quartzite and a trace of quartz and chalk Sand: medium with some fine, subrounded quartz with flint, moderate yellowish brown	5.4	5.8
Glacial Sand and Gravel	**b** Pebbly sand Gravel: fine with coarse, angular flint with chalk, limestone and some quartz and quartzite Sand: medium with fine and some coarse, rounded to subrounded quartz with some flint and chalk, greyish yellowish brown	7.8	13.6
Glacial Silt	Silt, olive grey, a trace of subangular flint and rounded quartz pebbles	3.8	17.4
Boulder Clay	Pebbly clay, medium grey, firm, many pebbles of subangular flint with some rounded to subrounded quartzite and rounded chalk	0.8+	18.2

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	3	93	4	0.4-1.1	7	11	79	1	2	0	0
				1.1-1.8	2	13	82	0	2	1	0
				1.8-2.8	2	7	77	2	6	6	0
				2.8-3.8	1	12	81	1	3	2	0
				3.8-4.8	2	9	87	1	1	0	0
				4.8-5.8	1	8	86	2	1	2	0
				Mean	**3**	**10**	**82**	**1**	**2**	**2**	**0**
b	4	86	10	5.8-7.8	3	7	89	1	0	0	0
				7.8-9.8	3	9	80	3	4	1	0
				9.8-11.8	5	7	73	6	9	0	0
				11.8-13.6	5	8	54	7	17	9	0
				Mean	**4**	**8**	**74**	**4**	**8**	**2**	**0**
a+b	**3**	**90**	**7**	**Mean**	**3**	**9**	**78**	**3**	**5**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.8-2.8	96	0	1	6	1	0
b	11.8-13.6	68	0	4	3	18	7

TM 17 NW 36 1347 7866 Stuston Common Block D

Surface level +29.8 m (+98 ft)
Water not struck
Shell and auger 152 mm
June 1981

Overburden 0.5 m
Mineral 1.7 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, dark reddish brown	0.5	0.5
Glacial Sand and Gravel	Sandy gravel Gravel: fine with coarse, angular to subrounded flint, subrounded quartzite and rounded quartz with some siltstone Sand: medium with coarse and fine, rounded to subrounded flint, quartzite and quartz	1.7	2.2
Upper Chalk	Chalk, soft	3.2+	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 mm
4	71	25	0.5-1.5	5	9	47	19	20	0	0
			1.5-2.2	3	7	44	15	17	14	0
			Mean	**4**	**8**	**46**	**17**	**19**	**6**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
0.5-1.5	35	0	31	28	0	6
1.5-2.2	28	5	34	29	0	4
Mean	**31**	**3**	**33**	**28**	**0**	**5**

TM 17 NW 37 1483 7864 North of Scole Bridge, Scole Block C

Surface level +23.8 m (+78 ft)
Water struck at 21.9 m
Shell and auger 152 mm
June 1981

Overburden 0.7 m
Mineral 14.2 m
Waste 7.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, dark brown	0.7	0.7
River Terrace Deposits	**a** Pebbly sand Gravel: fine, angular flint with a trace of quartz, quartzite and chalk Sand: medium with fine, subrounded quartz with angular flint, light brown	4.8	5.5
Glacial Sand and Gravel	**b** Pebbly sand, with some thin (up to 50 mm) grey silt layers below 12.0 m Gravel: fine with coarse, angular flint with subrounded chalk and some quartz and quartzite Sand: medium with fine, subrounded to rounded quartz with flint and chalk, pale yellowish brown	9.4	14.9
Glacial Silt	Silt, with sandy layers and some flint pebbles, soft to firm, becoming homogeneous below 15.5 m, fine pebbles of chalk below 17.5 m	7.6+	22.5

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 mm
a	3	91	6	0.7-1.4	4	13	79	2	2	0	0
				1.4-2.4	2	6	86	2	4	0	0
				2.4-3.5	3	11	58	11	17	0	0
				3.5-4.5	3	24	70	2	1	0	0
				4.5-5.5	6	15	77	1	1	0	0
				Mean	**3**	**14**	**73**	**4**	**6**	**0**	**0**
b	6	75	19	5.5-6.8	2	8	67	5	14	4	0
				6.8-7.8	2	7	58	7	18	8	0
				7.8-8.8	6	23	51	5	10	5	0
				8.8-10.0	13	25	39	5	10	8	0
				10.0-11.0	4	11	50	18	17	0	0
				11.0-12.0	4	8	26	8	35	19	0
				12.0-13.0	14	6	58	6	4	8	4
				13.0-14.9	5	6	82	2	4	1	0
				Mean	**6**	**11**	**58**	**6**	**13**	**6**	**trace**
a+b	**5**	**80**	**15**	**Mean**	**5**	**12**	**63**	**5**	**11**	**4**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	2.4-3.5	94	0	1	2	1	2
b	5.5-6.8	81	0	2	3	14	0
	6.8-7.8	73	0	12	0	14	1
	7.8-8.8	49	0	0	10	41	0
	8.8-10.0	61	0	12	3	24	0
	10.0-11.0	60	0	1	2	34	3
	11.0-12.0	75	0	2	6	13	4
	Mean	**70**	**0**	**4**	**4**	**19**	**3**

TM 17 NW 38 **1046 7787** **North of the Grange, Palgrave** **Block D**

Surface level +48.4 m (+159 ft)
Water struck at approximately +33 m
Shell and auger 203 mm and 152 mm
September 1981

Overburden 0.1 m
Mineral 5.5 m
Waste 12.2 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, light brown	0.1	0.1
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel, with cobbles from 2.0 m to 5.0 m Gravel: fine and coarse, angular to subrounded flint with rounded quartzite and quartz Sand: medium and fine with some coarse, mostly rounded quartz with some angular to subangular flint, dusky brown	5.5	5.6
Boulder Clay	Clay, mottled grey and dark yellowish brown, firm becoming hard below 7.0 m, sand and fine pebbles of rounded to subrounded chalk with some subangular to subrounded flint and rounded brown mudstone	9.4	15.0
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: fine with coarse, rounded quartzite and quartz with angular to rounded flint Sand: medium with coarse and some fine, rounded to subrounded quartz and quartzite with subrounded to subangular flint	2.8	17.8
Upper Chalk	Chalk	2.0+	19.8

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 mm
a	15	47	38	0.1-1.0	18	30	21	6	16	9	0
				1.0-2.0	17	33	33	3	11	3	0
				2.0-3.0	16	23	21	6	12	18	4
				3.0-4.0	17	7	18	10	18	27	3
				4.0-5.0	14	5	20	12	24	23	2
				5.0-5.6	5	2	18	14	32	29	0
				Mean	**15**	**18**	**21**	**8**	**18**	**18**	**2**
b	4	60	36	15.0-16.0	6	4	38	16	24	12	0
				16.0-17.0	2	3	38	21	28	8	0
				17.0-17.8	3	3	49	10	26	9	0
				Mean	**4**	**3**	**41**	**16**	**26**	**10**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.1-1.0	72	0	13	13	0	2
	1.0-2.0	74	0	13	6	0	7
	2.0-3.0	87	0	3	7	0	3
	3.0-4.0	72	2	2	11	0	13
	4.0-5.0	83	0	10	5	trace	2
	5.0-5.6	81	3	4	11	0	1
	Mean	**55**	**trace**	**5**	**37**	**trace**	**3**
b	15.0-16.0	29	trace	40	30	0	1
	16.0-17.0	29	3	32	35	0	1
	17.0-17.8	33	4	36	26	trace	1
	Mean	**30**	**2**	**36**	**31**	**trace**	**1**

TM 17 NW 39 **1141 7770** **Valley Farm, Palgrave** **Block C**

Surface level +27.2 m (+89 ft)
Water not struck
Shell and auger 152 mm
August 1981

Overburden 0.2 m
Mineral 1.3 m
Waste 18.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown, with some coarse flint pebbles	0.2	0.2
River Terrace Deposits	'Clayey' sandy gravel Gravel: coarse and fine, angular to subangular flint Sand: medium and fine, rounded to subrounded quartz with a trace of subangular flint, brown and orange brown	1.3	1.5
Boulder Clay	Pebbly clay, silty and sandy, moderate to dark yellowish brown becoming dark grey with flint pebbles to 2.6 m, firm to very hard below 2.6 m with many pebbles of rounded to subrounded chalk with quartzite, flint and rounded brown mudstone	18.5+	20.0

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 mm
14	53	33	0.2-1.5	14	23	24	6	16	17	0

TM 17 NW 40 **1236 7756** **North of Dairy Farm, Thrandeston** **Block D**

Surface level +37.6 m (+123 ft)
Water struck at +28.3 m
Shell and auger 203 mm and 152 mm
June 1981

Waste 9.3 m
Bedrock 2.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dusky yellowish brown	0.3	0.3
Boulder Clay	'Very clayey' sand, mottled orange and olive brown, rounded to subrounded quartz, with some chalk and flint pebbles	0.6	0.9
	Pebbly clay, light olive grey and moderate yellowish brown becoming dark grey and brown below 1.8 m, many fine pebbles of chalk with some fine and coarse flint and a trace of ironstone nodules and siltstone	2.9	3.8
	Pebbly clay, dark grey, with many fine pebbles of chalk with flint and fossiliferous limestone	2.5	6.3
	Pebbly clay, silty and slightly sandy, light olive grey; many pebbles of chalk and some flint, matrix darkens to olive grey in parts	3.0	9.3
Upper Chalk	Chalk, soft	2.2+	11.5

TM 17 NW 41 **1358 7784** **Church Lane, Stuston** **Block D**

Surface level +34.7 m (+114 ft)
Water struck at +13.9 m
Shell and auger 152 mm
November 1981

Waste 21.4 m
Bedrock 4.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, brown	0.1	0.1
Boulder Clay	Pebbly clay, silty to sandy, mottled dark yellowish brown and dark yellowish orange becoming dark grey below 2.9 m, firm to hard, many pebbles of chalk, flint and mudstone, dusky yellowish brown below 10.5 m with sandy layers towards base	16.9	17.0
	Pebbly clay, silty and sandy, light olive grey, firm to hard, abundant chalk sand and pebbles	3.8	20.8
Glacial Sand and Gravel	'Very clayey' gravel Gravel: coarse and fine, flint and chalk Sand: coarse and medium with fine, quartz, chalk and flint	0.6	21.4
Upper Chalk	Chalk	4.1+	25.5

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 mm
27	27	46	20.8-21.4	27	6	11	10	16	30	0

TM 17 NW 42 **1454 7799** **Warren Hills, Oakley** **Block D**

Surface level +27.1 m (+89 ft)
Water struck at +25.2 m
Shell and auger 152 mm
June 1981

Overburden 0.3 m
Mineral 1.6 m
Waste 0.4 m
Mineral 2.5 m
Waste 14.0 m
Bedrock 1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, brown, with pebbles of flint	0.3	0.3
Glacial Sand and Gravel	**a** 'Very clayey' sandy gravel Gravel: fine with coarse, angular to subrounded flint with rounded to subrounded chalk; some rounded quartzite, quartz and siltstone Sand: medium with coarse and fine, rounded to subrounded quartz and chalk with some flint, strong yellowish orange	1.6	1.9
Glacial Silt	Silt, strong yellowish orange and light grey, soft to firm	0.4	2.3
Glacial Sand and Gravel	**b** Pebbly sand Gravel: fine and coarse, rounded to subrounded chalk with angular to subrounded flint Sand: medium with coarse and fine, rounded chalk with some subangular to subrounded flint and subrounded quartz, strong yellowish orange	2.5	4.8
Glacial Silt	Silt, sandy	0.3	5.1
Boulder Clay	Pebbly clay, olive black becoming olive grey below 12.1 m and dark yellowish brown below 15.8 m, hard to very hard, many pebbles of rounded chalk with subangular to angular flint and some subrounded brown mudstone and siltstone	13.7	18.8
Upper Chalk	Chalk, soft	1.5+	20.3

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 mm
a	20	57	23	0.3-1.9	20	8	38	11	18	5	0
b	9	77	14	2.3-3.3	11	9	46	18	9	7	0
				3.3-4.8	8	11	61	7	6	7	0
				Mean	**9**	**10**	**56**	**11**	**7**	**7**	**0**
a+b	**13**	**69**	**18**	**Mean**	**13**	**10**	**48**	**11**	**12**	**6**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.3-1.9	65	0	1	2	23	9
b	2.3-3.3	24	0	0	1	72	3
	3.3-4.8	24	6	3	1	64	2
	Mean	**24**	**3**	**2**	**1**	**67**	**3**

TM 17 NW 43 **1495 7735** **South-east of Warrenhill Farm, Oakley** **Block E [1]**

Surface level +38.7 m (+127 ft)
Water struck at +28.6 m
Shell and auger 152 mm
August 1981

Mineral	1.8 m
Waste	1.8 m
Mineral	3.9 m
Waste	2.6 m
Mineral	14.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Glacial Sand and Gravel	a 'Very clayey' pebbly sand Gravel: coarse and fine, flint and some quartzite Sand: medium and fine, rounded quartz with some rounded sandstone and subrounded flint, dark brown and orange	1.8	1.8
Boulder Clay	Clay, sandy and silty, greyish orange to moderate yellowish brown, hard to very hard, many pebbles of rounded chalk with some subangular flint	1.8	3.6
Glacial Sand and Gravel	b Sandy gravel Gravel: fine with coarse, subrounded to angular flint with rounded to subrounded quartz, quartzite and some chalk Sand: medium with coarse and fine, rounded to subrounded quartz and quartzite with flint	3.9	7.5
Boulder Clay	Pebbly clay, very sandy and silty, dark yellowish brown, soft to hard, many fine and coarse pebbles of angular to subangular flint, rounded to subrounded quartz and quartzite	2.6	10.1
Crag	c Sand, Sand: fine and medium, rounded quartz with a trace of subrounded flint, glauconite grains below 22.0 m, yellowish orange becoming dusky yellow below 22.0 m	14.9+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	29	64	7	0.0-1.8	29	31	31	2	3	4	0
b	5	71	24	3.6-5.0	6	14	49	18	12	1	0
				5.0-6.5	5	9	43	13	17	13	0
				6.5-7.5	3	5	46	13	17	16	0
				Mean	**5**	**10**	**46**	**15**	**15**	**9**	**0**
c	4	96	0	10.1-11.5	10	30	57	1	2	0	0
				11.5-13.0	4	34	62	0	0	0	0
				13.0-15.0	3	60	37	0	0	0	0
				15.0-17.0	4	63	32	0	1	0	0
				17.0-19.0	4	59	36	0	1	0	0
				19.0-22.0	4	59	37	0	0	0	0
				22.0-25.0	4	58	38	0	0	0	0
				Mean	**4**	**55**	**41**	**trace**	**trace**	**0**	**0**
a+b+c	**6**	**89**	**5**	**Mean**	**6**	**45**	**41**	**3**	**3**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	3.6-5.0	85	0	11	4	0	0
	5.0-6.5	61	5	15	17	2	0
	6.5-7.5	72	2	11	15	0	trace
	Mean	**68**	**3**	**13**	**15**	**1**	**trace**

TM 17 NW 44 **1005 7686** **South-west of the Grange, Palgrave** **Block D**

Surface level +34.4 m (+113 ft)
Water struck at +28.4 m
Shell and auger 203 mm and 152 mm
September 1981

Overburden	0.2 m
Mineral	2.0 m
Waste	3.8 m
Mineral	8.8 m
Waste	0.3 m
Mineral	8.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, dark brown, some flint pebbles	0.2	0.2
Glacial Sand and Gravel	a 'Clayey' sandy gravel, some cobbles Gravel: fine and coarse, angular to subangular flint with some rounded quartz and quartzite Sand: medium with fine and coarse, rounded quartz with some subrounded flint, strong yellowish orange	2.0	2.2
Boulder Clay	Pebbly clay, greyish orange, firm to hard, many fine pebbles of rounded chalk and thin layers of chalk sand	0.6	2.8
Glacial Silt	Silt, with quartz and chalk sand, light grey and dark yellowish orange	3.2	6.0
Glacial Sand and Gravel	b 'Clayey' sand, some pebbles near top Sand: medium with fine, rounded quartz with chalk and mudstone	3.5	9.5
	c Sandy gravel Gravel: fine and coarse, subrounded to subangular flint with rounded quartz and quartzite and a trace of chalk Sand: medium with coarse and fine, subrounded quartz and chalk with some flint and mudstone	5.3	14.8
Glacial Silt	Silt, chalky	0.3	15.1
Glacial Sand and Gravel	d Pebbly sand Gravel: fine with coarse, flint with quartz, quartzite and a trace of chalk Sand: medium, quartz and chalk with some flint	2.5	17.6
	e Gravel Gravel: fine and coarse, subangular flint with rounded quartz and quartzite Sand: medium with coarse and some fine, subrounded quartz with some chalk and flint	6.1+	23.7

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 mm
a	11	50	39	0.2-2.2	11	16	26	8	21	16	2
b	14	82	4	6.0-7.1	21	31	33	4	9	2	0
				7.1-8.3	15	12	71	1	1	0	0
				8.3-9.5	7	22	70	1	0	0	0
				Mean	**14**	**21**	**59**	**2**	**3**	**1**	**0**
c	2	68	30	9.5-10.5	3	11	66	6	8	6	0
				10.5-11.5	2	9	50	15	17	7	0
				11.5-12.7	2	6	44	10	24	14	0
				12.7-13.7	3	3	48	10	18	18	0
				13.7-14.8	2	3	52	11	20	12	0
				Mean	**2**	**6**	**52**	**10**	**18**	**12**	**0**
d	3	80	17	15.1-16.5	3	8	74	3	6	6	0
				16.5-17.6	3	7	60	5	18	7	0
				Mean	**3**	**8**	**68**	**4**	**11**	**6**	**0**
e	1	36	63	17.6-18.6	1	5	22	10	38	24	0
				18.6-19.6	1	3	13	9	45	29	0
				19.6-20.6	2	2	22	12	43	19	0
				20.6-21.6	1	4	30	15	35	15	0
				21.6-22.7	1	4	19	8	40	28	0
				22.7-23.7	1	4	24	8	32	31	0
				Mean	**1**	**4**	**22**	**10**	**38**	**25**	**0**
a+b+c +d+e	**5**	**60**	**35**	**Mean**	**5**	**9**	**43**	**8**	**21**	**14**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.2-2.2	90	0	4	5	0	1
b	6.0-7.1	35	0	3	3	56	3
c	9.5-10.5	83	0	12	5	0	trace
	10.5-11.5	65	0	14	17	1	3
	11.5-12.7	65	0	19	14	0	2
	12.7-13.7	69	3	12	12	1	3
	13.7-14.8	66	0	16	15	trace	3
	Mean	**68**	**1**	**15**	**13**	**trace**	**3**
d	15.1-16.5	62	1	17	19	1	0
	16.5-17.6	74	0	12	9	1	4
	Mean	**68**	**1**	**14**	**14**	**1**	**2**
e	17.6-18.6	65	1	19	14	1	trace
	18.6-19.6	63	0	18	17	0	2
	19.6-20.6	74	0	9	16	0	1
	20.6-21.6	74	0	9	15	0	2
	21.6-22.7	63	0	12	18	0	7
	22.7-23.7	50	0	21	24	0	5
	Mean	**65**	**trace**	**15**	**17**	**trace**	**3**

TM 17 NW 45 **1203 7652** **South of Rectory Farm, Thrandeston** **Block E [1]**

Surface level +32.5 m (+107 ft)
Water struck at +31.0 m
Shell and auger 152 mm
November 1981

Overburden 0.6 m
Mineral 7.9 m
Bedrock 1.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, moderate brown	0.2	0.2
Head	Clay, silty, greyish yellowish brown with light brown mottling, soft to firm, with some wood fragments	0.4	0.6
Kesgrave Sands and Gravels	**a** 'Clayey' sandy gravel Gravel: coarse and fine, angular to subrounded flint with rounded quartz, quartzite and flint Sand: fine and medium with some coarse, subrounded to rounded quartz and flint	0.9	1.5
Crag	**b** Sand Sand: fine with medium, subrounded to rounded quartz with some angular to subangular flint, greyish brown becoming orange below 5.5 m	7.0	8.5
Upper Chalk	Chalk, brownish white	1.6+	10.1

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 mm
a	13	62	25	0.6-1.5	13	37	22	3	9	16	0
b	6	94	0	1.5-3.5	11	76	10	2	1	0	0
				3.5-5.5	6	84	10	0	0	0	0
				5.5-8.5	3	77	20	0	0	0	0
				Mean	**6**	**79**	**14**	**1**	**trace**	**0**	**0**
a+b	7	**90**	**3**	**Mean**	**7**	**74**	**15**	**1**	**1**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.6-1.5	66	7	14	13	0	0

TM 17 NW 46 **1296 7634** **Home Farm, Thrandeston** **Block E [1]**

Surface level +45.1 m (+148 ft)
Water not struck
Shell and auger 152 mm
June 1981

Waste 20.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty sandy clay, brown	0.5	0.5
Boulder Clay	Pebbly clay, very sandy, strong yellowish orange, with sand layer from 0.9 m to 1.6 m, becoming dark grey, stiff to hard, with many fine pebbles of chalk, flint and siltstone; merges to clayey silt from 13.4 m to 14.2 m, becoming olive grey, silty, firm, clay below 14.2 m	19.3	19.8
	Pebbly clay, silty and sandy, light olive grey, much rounded chalk debris with a trace of flint pebbles	0.2+	20.0

TM 17 NW 47 **1430 7647** **Church Farm, Brome** **Block E [1]**

Surface level +42.5 m (+139 ft)
Water struck at +29.9 m
Shell and auger 152 mm
September 1981

Overburden 11.8 m
Mineral 13.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.4	0.4
Glacial Silt	Sand, dark yellowish orange, medium and fine, quartz	0.3	0.7
	Silt, very sandy, dark yellowish brown with streaks of light brown, soft to firm, with several thin layers of brown sand	1.0	1.7
Boulder Clay	Pebbly clay, dark grey with moderate olive brown mottling near top, firm to hard, many pebbles of rounded chalk with a trace of subrounded iron-stained siltstone, rounded mudstone and subangular flint	1.7	3.4
	Pebbly clay, silty, dark yellowish brown, coarse pebbles of chalk and flint above 4.4 m with fine chalk and some flint below	8.4	11.8
Kesgrave Sands and Gravels	a Pebbly sand Gravel: fine with coarse, angular to subrounded flint, rounded quartz and quartzite with flint Sand: medium with coarse and fine, rounded quartz with some subangular to subrounded flint	7.8	19.6
Crag	b Sand, with a trace of quartzite and flint pebbles Sand: medium with fine, rounded to subrounded quartz and quartzite with some subrounded flint	5.4+	25.0

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 mm
a	9	70	21	11.8-12.6	31	18	39	3	8	1	0
				12.6-13.6	11	8	31	13	30	7	0
				13.6-14.6	3	6	41	22	27	1	0
				14.6-15.6	23	3	46	16	11	1	0
				15.6-16.6	2	3	72	11	10	2	0
				16.6-17.6	2	4	56	11	19	8	0
				17.6-18.6	1	2	43	21	23	10	0
				18.6-19.6	2	21	55	12	6	4	0
				Mean	**9**	**8**	**48**	**14**	**17**	**4**	**0**
b	3	97	0	19.6-20.6	4	27	68	1	0	0	0
				20.6-21.6	3	22	74	1	0	0	0
				21.6-22.6	2	34	64	0	0	0	0
				22.6-24.0	2	31	66	0	1	0	0
				24.0-25.0	2	34	64	0	0	0	0
				Mean	**3**	**29**	**68**	**trace**	**trace**	**0**	**0**
a+b	**6**	**81**	**13**	**Mean**	**6**	**17**	**56**	**8**	**10**	**3**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	11.8-12.6	37	4	26	33	0	0
	12.6-13.6	28	4	38	30	0	trace
	13.6-14.6	34	8	28	30	0	0
	14.6-15.6	49	2	29	18	0	2
	15.6-16.6	35	5	26	32	0	2
	16.6-17.6	33	11	33	20	0	3
	17.6-18.6	37	7	35	17	0	4
	Mean	**35**	**6**	**32**	**25**	**0**	**2**

TM 17 NW 48 **1105 7577** **Green Lane, Thrandeston** **Block E [1]**

Surface level +45.5 m (+149 ft)
Water struck ast +33.5 m
Shell and auger 152 mm
June 1981

Overburden 10.0 m
Mineral 15.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.2	0.2
Boulder Clay	'Very clayey' sand, fine and medium, rounded quartz with some subrounded mudstone and subangular flint	0.9	1.1
	Pebbly clay, silty at top, mottled yellowish orange, pale brown and light grey becoming darker grey downwards; pebbles of subrounded to rounded chalk with angular to subangular flint	5.5	6.6
Glacial Silt	Silt, with dark yellowish orange sand layers and light grey patches of degraded chalk pebbles; with some pebbles of flint and chalk	0.5	7.1
Boulder Clay	Clay, silty becoming sandy, dusky yellowish brown, many pebbles of chalk with a trace of subrounded white quartzite and subangular flint	2.9	10.0
Kesgrave Sands and Gravels	**a** 'Clayey' pebbly sand, 1 m to 10 mm thick silt layers near top Gravel: fine and coarse, angular to subangular flint and rounded to subrounded quartzite Sand: medium with fine and coarse, subrounded to rounded quartz, dusky yellow to light olive grey	4.0	14.0
Crag	**b** Sand, Sand: medium with fine, quartz with some mudstone and glauconite below 18.8 m, olive grey becoming greenish black below 18.8 m	11.0+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	12	79	9	10.0-11.0	19	17	61	2	1	0	0
				11.0-12.0	15	16	50	9	10	0	0
				12.0-13.0	9	8	63	11	4	5	0
				13.0-14-0	6	23	40	13	8	10	0
				Mean	**12**	**16**	**54**	**9**	**5**	**4**	**0**
b	5	94	1	14.0-15.0	8	27	62	3	0	0	0
				15.0-17.0	6	21	73	0	0	0	0
				17.0-18.0	6	25	69	0	0	0	0
				18.0-18.8	4	23	73	0	0	0	0
				18.8-20.8	3	31	65	1	0	0	0
				20.8-22.0	4	24	70	2	0	0	0
				22.0-24.0	4	19	74	2	1	0	0
				24.0-25.0	5	23	65	2	4	1	0
				Mean	**5**	**24**	**69**	**1**	**1**	**trace**	**0**
a+b	**7**	**90**	**3**	**Mean**	**7**	**22**	**65**	**3**	**2**	**1**	**0**

TM 17 NW 49 **1223 7566** **Goswold Hall, Thrandeston** **Block E [1]**

Surface level +39.5 m (+130 ft)
Water struck at +27.1 m
Shell and auger 152 mm
June 1981

Overburden 12.3 m
Mineral 12.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, moderate brown, some flint pebbles	0.5	0.5
Boulder Clay	Clay, mottled strong yellowish orange and pale yellowish brown becoming darker downwards, soft to firm, abundant chalk sand and some pebbles of rounded chalk and angular flint, less chalk sand below 6.8 m	11.8	12.3
Crag	Sand, some thin silt layers Sand: medium with fine, rounded quartz and rounded to subrounded glauconite with a trace of subrounded to subangular flint, greyish yellow becoming dark greenish grey below 15.8 m	12.7+	25.0

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
7	93	0	12.3-13.8	16	51	32	1	0	0	0
			13.8-15.8	13	66	20	1	0	0	0
			15.8-16.8	5	21	74	0	0	0	0
			16.8-19.0	7	19	74	0	0	0	0
			19.0-21.0	3	17	80	0	0	0	0
			21.0-23.0	3	31	65	1	0	0	0
			23.0-25.0	5	30	64	1	0	0	0
			Mean	**7**	**34**	**59**	**trace**	**0**	**0**	**0**

TM 17 NW 50 **1378 7546** **West of Chestnut Farm, Eye** **Block E [1]**

Surface level +42.0 m (+138 ft)
Water not struck
Shell and auger 152 mm
June 1981

Waste 19.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown, flint pebbles	0.4	0.4
Head	Clay, sandy and silty, moderate olive brown to dark yellowish orange, soft to firm, some pebbles of flint, a trace of quartzite and small patches of carbonaceous material	0.9	1.3
	'Very clayey' pebbly sand, thin layers of brown clay, rare flint pebbles, Sand: medium and fine, mostly quartz, strong yellowish orange	0.5	1.8
	Clay, mottled strong yellowish orange and light olive brown, many pebbles and some coarse sand grade subrounded white calcareous nodules	1.3	3.1

Peat	Peat, clayey, brownish black, soft and friable, abundant fine rootlets, and organic debris, with many small shell fragments below 3.8 m	1.8	4.9
Lacustrine Deposits	Clay, silty and peaty, olive brown, firm with some indurated patches, compressed wood debris and rare comminuted shell fragments	0.8	5.7
Boulder Clay	Pebbly clay, dark grey, very hard, pebbles of subrounded chalk and a trace of rounded mudstone and siltstone	13.3+	19.0

TM 17 NW 51 **1472 7577** **North-west of Brome Park Farm, Brome** **Block E**[1]

Surface level +33.9 m (+111 ft)
Water struck at +25.4 m
Shell and auger 152 mm
October 1981

Overburden 8.5 m
Mineral 12.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, light brown	0.3	0.3
Boulder Clay	Pebbly clay, very silty and sandy, mottled moderate yellowish brown and strong yellowish orange, soft, becoming firm below 4.0 m, many pebbles of subrounded to rounded chalk with angular flint and some rounded quartzite	5.7	6.0
	Clay, silty, olive grey, soft to firm, pebbles of chalk and flint with rounded mudstone and quartz	2.5	8.5
Kesgrave Sands and Gravels	**a** Sandy gravel Gravel: fine with some coarse, subangular to subrounded flint, with subrounded to rounded quartz and quartzite Sand: medium with coarse and fine, rounded quartz with some subangular to rounded flint	5.1	13.6
Crag	**b** Sand Sand: medium and fine, rounded quartz with some subrounded flint, mica and much comminuted shell debris below 16.6 m, yellowish brown becoming olive brown below 16.6 m	7.0+	20.6

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 mm
a	1	72	27	8.5-9.5	2	8	43	15	24	8	0
				9.5-10.5	0	11	39	16	30	4	0
				10.5-11.5	1	25	28	13	28	5	0
				11.5-12.5	1	10	36	30	19	4	0
				12.5-13.6	3	6	44	32	14	1	0
				Mean	**1**	**12**	**39**	**21**	**23**	**4**	**0**
b	3	94	3	13.6-14.6	1	39	59	1	0	0	0
				14.6-16.6	2	49	43	2	4	0	0
				16.6-18.6	5	40	50	2	3	0	0
				18.6-20.6	4	39	52	2	3	0	0
				Mean	**3**	**43**	**49**	**2**	**3**	**0**	**0**
a+b	**2**	**85**	**13**	**Mean**	**2**	**30**	**45**	**10**	**11**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	8.5-9.5	54	9	23	14	0	0
	9.5-10.5	71	5	20	2	0	2
	10.5-11.5	65	8	20	7	0	0
	11.5-12.5	61	0	32	7	0	0
	12.5-13.6	52	8	32	8	0	0
	Mean	**62**	**7**	**23**	**8**	**0**	**trace**

TM 17 NE 34 **1562 7956** **East of Scole Old Hall, Scole** **Block B**

Surface level +44.5 m (+146 ft)
Water struck at +30.1 m
Shell and auger 152 mm
July 1981

Overburden 14.4 m
Mineral 4.8 m
Waste 0.8 m
Bedrock 0.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, dark brown, some pebbles	0.5	0.5
Boulder Clay	Pebbly clay, silty, mottled light olive brown and light olive grey, some subangular chalk pebbles	2.4	2.9
Glacial Silt	Silt, clayey, slightly micaceous, olive grey	1.9	4.8
Boulder Clay	Pebbly clay, silty, olive grey, coarse and fine subrounded chalk and mudstone pebbles	4.2	9.0
	Clay, soft, silty, light olive grey to pinkish grey, much fine well rounded chalk, some subrounded flint pebbles; becoming brownish grey to moderate brown, with some angular flint and a trace of chalk pebbles below 14.1 m	5.4	14.4
Kesgrave Sands and Gravels	Pebbly sand, few pebbles below 17.5 m Gravel: fine and coarse, subangular flint and rounded quartzite with subrounded to rounded quartz Sand: medium with fine and some coarse, well rounded quartz, light olive grey	4.8	19.2
Chalk Silt	Silt, soft, chalky, white to very light grey	0.8	20.0
Upper Chalk	Chalk, soft to hard, white	0.4+	20.4

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 mm
7	88	5	14.4-15.4	11	17	47	8	10	7	0
			15.4-16.5	6	15	73	4	2	0	0
			16.5-17.5	4	17	69	4	4	2	0
			17.5-18.5	6	28	65	1	0	0	0
			18.5-19.2	8	39	51	1	1	0	0
			Mean	**7**	**22**	**62**	**4**	**3**	**2**	**0**

TM 17 NE 35 1693 7972 **Billingford Hall, Scole** **Block B**

Surface level +43.6 m (+143 ft)
Water struck at +29.6 m
Shell and auger 152 mm
July 1981

Overburden	9.9 m
Mineral	3.4 m
Waste	3.0 m
Mineral	1.7 m
Waste	1.7 m
Mineral	2.1 m
Waste	1.1 m
Bedrock	0.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy	0.3	0.3
Boulder Clay	Pebbly clay, silty, olive grey, firm to hard, subrounded chalk with angular flint and some mudstone pebbles; clayey silt layers from 4.0 m to 4.2 m, 4.8 m to 5.0 m	4.7	5.0
	Pebbly clay, very silty, light olive grey, firm, much finely comminuted, chalk with a trace of flint pebbles	3.8	8.8
	Pebbly clay, sandy, brownish grey, hard, a trace of chalk pebbles	0.7	9.5
	Pebbly clay, sandy, moderate yellowish brown to dark yellowish brown, some pebbles of chalk and angular flint	0.4	9.9
Glacial Sand and Gravel	**a** 'Very clayey' sand, laminated, with layers of silt and and silty clay Gravel: fine, angular flint Sand: fine and coarse, subangular quartz, pale yellowish brown	3.4	13.3
Glacial Drift Undifferentiated	Clay, very sandy, moderate yellowish brown, interbedded with layers of silty fine sand, some angular flint and rounded quartz pebbles	3.0	16.3
?Kesgrave Sands and Gravels	**b** 'Clayey' pebbly sand, occasional laminae of light olive grey sandy clay Gravel: fine and coarse, angular flint with rounded quartz and quartzite Sand: medium, subrounded quartz, moderate yellowish brown	1.7	18.0
	Clay, dark greenish grey, stiff, peaty traces, some quartz, quartzite and angular flint pebbles; becomes sandy and pebbly below 19.3 m	1.7	19.7
Kesgrave Sands and Gravels	**c** Gravel, with sandy clay laminae above 20.6 m Gravel: fine and coarse, angular flint with rounded quartzite, quartz and some rounded flint Sand: medium with fine and some coarse, subrounded quartz with flint	2.1	21.8
Chalk Silt	Silt, chalky, white, soft	1.1	22.9
Upper Chalk	Chalk, white, soft	0.9+	23.8

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 mm
a	35	64	1	9.9-11.0	37	31	30	1	1	0	0
				11.0-12.0	34	34	31	1	0	0	0
				12.0-13.3	33	29	35	1	2	0	0
				Mean	**35**	**31**	**32**	**1**	**1**	**0**	**0**
b	11	77	12	16.3-18.0	11	10	60	7	5	7	0
c	2	40	58	19.7-20.6	2	6	32	12	24	24	0
				20.6-21.8	2	3	17	14	40	20	4
				Mean	**2**	**4**	**23**	**13**	**34**	**22**	**2**
a+b+c	**20**	**60**	**20**	**Mean**	**20**	**18**	**36**	**6**	**11**	**8**	**1**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
c	19.7-20.6	37	2	16	42	0	3
	20.6-21.8	30	1	18	48	0	3
	Mean	**32**	**1**	**18**	**46**	**0**	**3**

TM 17 NE 36 1857 7947 **North of the Hall, Brockdish** **Block F [1]**

Surface level +45.3 m (+149 ft)
Water struck at +21.2 m
Shell and auger 152 mm
July 1981

Waste	25.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy, brown	0.4	0.4
Boulder Clay	Pebbly clay, silty to sandy, mottled light olive grey and light olive brown becoming olive grey below 3.0 m; many pebbles of chalk and flint with some mudstone, layers of clayey, sandy silt with comminuted chalk from 6.7 m to 7.1 m and 7.3 m to 7.4 m	8.1	8.5
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with subrounded to rounded quartzite and quartz and some chalk and sedimentary rock pebbles Sand: medium with coarse and fine, angular quartz with chalk, greyish orange	2.5	11.0
Boulder Clay	Pebbly clay, sandy, pale olive grey, soft, some chalk pebbles, layers of soft brownish grey clay	1.6	12.6
	Pebbly clay, sandy, brownish grey to olive grey, soft to firm, a trace of chalk pebbles	4.3	16.9
?Glacial Sand and Gravel	Sand, fine, pale yellowish brown	0.4	17.3

?Kesgrave Sands and Gravels	Clay, sandy, moderate yellowish brown, interbedded with fine sand, becoming more silty, greenish grey	1.3	18.6
	Clay, moderate olive brown, hard, waxy, some layers of grey silt, trace of brownish black ?humic silt at 19.9 m; moderate brown, very hard, below 19.9 m	1.7	20.3
Kesgrave Sands and Gravels	**b** 'Clayey' gravel Gravel: fine with coarse, rounded quartzite and quartz with angular and some rounded flint	1.5	21.8
Crag	**c** 'Clayey' sand, some thin silty clay laminae Sand: medium with some coarse and fine, greyish greenish yellow; becoming dark yellowish orange to dusky yellow below 22.8 m	3.5+	25.3

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 mm
a	14	50	36	8.5-9.5	12	7	33	12	22	14	0
				9.5-10.5	15	12	29	12	21	11	0
				10.5-11.0	16	10	18	12	26	18	0
				Mean	**14**	**9**	**29**	**12**	**22**	**14**	**0**
b	13	42	45	20.3-21.3	11	6	19	17	30	17	0
				21.3-21.8	16	9	17	18	28	12	0
				Mean	**13**	**7**	**18**	**17**	**30**	**15**	**0**
c	11	88	1	21.8-22.8	12	83	1	1	3	0	0
				22.8-24.1	13	86	1	0	0	0	0
				24.1-25.3	7	91	1	1	0	0	0
				Mean	**11**	**86**	**1**	**1**	**1**	**0**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	8.5-11.0	63	1	10	14	6	6*
b	20.3-21.3	24	11	25	35	0	5
	21.3-21.8	36	13	17	31	0	3
	Mean	**27**	**11**	**23**	**34**	**0**	**5**

* Mainly sedimentary

TM 17 NE 37 1944 7906 East of the Rectory, Brockdish Block F [1]

Surface level +43.5 m (+143 ft)
Water not struck
Shell and auger 152 mm
August 1981

Overburden 0.4 m
Mineral 9.7 m
Waste 2.3 m
Mineral 13.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.4	0.4
Glacial Sand and Gravel	**a** Sandy gravel Gravel: fine with coarse, angular flint with rounded quartzite and quartz, chalk below 2.6 m Sand: medium with coarse and fine, subrounded quartz with flint and some chalk	9.7	10.1
Boulder Clay	Pebbly clay, very sandy, moderate yellowish brown, soft to firm, some pebbles of angular flint with a trace of chalk	2.3	12.4
Kesgrave Sands and Gravels	**b** Pebbly sand Gravel: fine and coarse, rounded quartzite with subangular flint, rounded quartz and some rounded flint with fine and coarse Sand: medium, with fine and coarse rounded quartz with some flint and quartzite, greyish orange	5.7	18.1
Crag	**c** Sand Sand: fine with medium, rounded quartz, some iron pan above 20.0 m, dusky yellow	7.9+	26.0

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 mm
a	3	50	47	0.4-1.4	10	16	38	9	19	8	0
				1.4-2.6	2	6	24	10	32	26	0
				2.6-3.9	1	5	35	19	27	13	0
				3.9-4.9	1	3	25	15	32	24	0
				4.9-5.9	3	5	22	16	31	23	0
				5.9-7.0	5	6	24	16	30	19	0
				7.0-9.0	3	8	32	14	28	15	0
				9.0-10.1	3	4	15	17	38	23	0
				Mean	**3**	**7**	**28**	**15**	**29**	**18**	**0**
b	5	78	17	12.4-13.4	9	23	36	8	11	13	0
				13.4-14.8	7	22	62	7	2	0	0
				14.8-15.8	4	11	60	12	10	3	0
				15.8-17.0	2	8	53	18	13	6	0
				17.0-18.1	2	12	34	18	17	17	0
				Mean	**5**	**15**	**51**	**12**	**10**	**7**	**0**
c	8	92	0	18.1-19.2	4	60	30	5	1	0	0
				19.2-20.0	7	60	30	2	1	0	0
				20.0-22.0	6	73	21	0	0	0	0
				22.0-22.8	6	84	10	0	0	0	0
				22.8-24.0	7	89	4	0	0	0	0
				24.0-26.0	14	80	6	0	0	0	0
				Mean	**8**	**74**	**17**	**1**	**trace**	**0**	**0**
a+b+c	**5**	**70**	**25**	**Mean**	**5**	**30**	**30**	**10**	**15**	**10**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.4-1.0	64	0	9	23	0	4
	1.4-2.6	68	0	10	20	0	2
	2.6-3.9	57	0	5	17	16	5
	3.9-4.9	46	1	4	18	23	8
	4.9-5.9	58	1	9	12	14	6
	5.9-7.0	53	trace	10	18	15	4
	7.0-9.0	57	1	10	14	13	5
	9.0-10.1	56	1	8	24	8	3
	Mean	**54**	**1**	**8**	**17**	**15**	**5**
b	12.4-13.4	24	5	24	44	0	3
	14.8-15.8	35	2	15	39	0	9
	15.8-17.0	47	10	16	26	0	1
	17.0-18.1	33	3	19	40	0	5
	Mean	**34**	**4**	**19**	**38**	**0**	**5**

TM 17 NE 38 1578 7831 South of the Shrubbery, Scole **Block C**

Surface level +20.9 m (+69 ft)
Water struck at +17.2 m
Shell and auger 152 mm
July 1981

Overburden 3.7 m
Mineral 6.3 m
Waste 6.8 m
Bedrock 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty, greyish brown, shell fragments	0.4	0.4
Peat	Peat, silty, dusky brown, very soft, with some pebbles of angular flint and rounded quartz above 1.0 m, plant debris below 1.5 m	3.3	3.7
Glacial Sand and Gravel	a 'Clayey' pebbly sand, no pebbles below 8.4 m Gravel: fine with coarse, angular flint with some subrounded to rounded quartz, quartzite and chalk Sand: medium with fine and some coarse, fine with medium below 8.4 m, angular flint and quartz with some rounded chalk	6.3	10.0
Glacial Silt	b Silt, clayey, with fine and medium sand, some pebbles of subangular flint with trace of subrounded chalk	6.8	16.8
Upper Chalk	Chalk, soft	3.2+	20.0

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 mm
a	12	78	10	3.7-4.7	1	12	60	6	12	9	0
				4.7-5.7	2	9	66	9	11	3	0
				5.7-7.0	1	10	66	7	12	4	0
				7.0-8.4	9	35	44	5	4	3	0
				8.4-9.0	32	43	24	1	0	0	0
				9.0-10.0	37	38	24	1	0	0	0
				Mean	**12**	**23**	**50**	**5**	**7**	**3**	**0**
b	64	36	0	10.0-11.0	63	22	14	1	0	0	0
				11.0-12.1	64	14	21	1	0	0	0
				Mean	**64**	**18**	**17**	1	**0**	**0**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	3.7-4.7	96	0	0	3	1	trace
	4.7-5.7	88	0	2	2	5	3
	5.7-7.0	90	0	0	2	7	1
	Mean	**90**	**0**	1	**2**	**5**	**2**

TM 17 NE 39 1668 7878 South of Billingford Hall, Scole **Block B**

Surface level +25.2 m (+83 ft)
Water struck at +14.2 m
Shell and auger 152 mm
July 1981

Overburden 11.0 m
Mineral 9.8 m
Bedrock 1.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, brown	0.7	0.7
Boulder Clay	Pebbly clay, silty, moderate yellowish brown, some pebbles of angular flint and subrounded chalk	0.6	1.3
Glacial Silt	Silt, with fine sand, strong, yellowish orange, becoming laminated with fine dark yellowish orange sand below 2.0 m	1.7	3.0
Boulder Clay	Pebbly clay, very silty, mottled greyish yellowish brown and strong yellowish orange, soft, with fine subrounded chalk pebbles	1.0	4.0
Glacial Silt	Silt, olive grey, soft, some subrounded quartz pebbles becoming more abundant downwards	2.5	6.5
Boulder Clay	Pebbly clay, very silty, some fine sand, olive grey, soft to firm, many fine subrounded chalk pebbles	4.5	11.0
Glacial Sand and Gravel	'Clayey' gravel Gravel: fine with coarse, angular flint with quartzite, chalk, quartz and many sedimentary rock pebbles Sand: coarse and medium, subrounded to rounded quartz with flint and chalk	9.8	20.8
Upper Chalk	Chalk, white, soft	1.2+	22.0

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 mm
13	22	65	11.0-12.0	8	5	7	8	27	45	0
			12.0-13.5	15	7	9	12	21	31	5
			13.5-15.0	28	5	6	5	20	33	3
			15.0-17.0	10	2	6	12	34	36	0
			17.0-19.0	8	2	8	12	34	36	0
			19.0-20.8	11	5	11	7	40	26	0
			Mean	**13**	**4**	**8**	**10**	**30**	**34**	**1**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
11.0-13.5	62	1	4	14	12	7
17.0-20.8	49	1	4	24	14	8
Mean	**55**	1	**4**	**19**	**13**	**8***

* mainly soft sedimentary

TM 17 NE 40 **1676 7810** **West of Low Farm, Oakley** **Block C**

Surface level +22.0 m (+72 ft)
Water struck at +21.4 m
Shell and auger 152 mm
June 1981

Overburden 0.6 m
Mineral 2.9 m
Bedrock 3.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty, dark brown	0.1	0.1
Peat	Peaty, silty, brownish black and strong brown, some fine subangular to subrounded flint and quartzite pebbles	0.5	0.6
River Terrace Deposits	**a** Gravel Gravel: fine and coarse, angular flint with rounded quartzite and quartz Sand: medium with coarse, subrounded to rounded quartz with flint	2.3	2.9
?River Terrace Deposits	**b** Pebbly sand Gravel: fine and coarse, angular flint with quartzite Sand: medium with coarse, rounded quartz with angular flint	0.6	3.5
Upper Chalk	Chalk,	3.1+	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 mm
a	5	43	52	0.6-2.0	4	4	24	16	26	26	0
				2.0-2.9	5	5	27	12	17	34	0
				Mean	**5**	**4**	**25**	**14**	**23**	**29**	**0**
b	9	77	14	2.9-3.5	9	7	50	20	9	5	0
a+b	**6**	**50**	**44**	**Mean**	**6**	**5**	**29**	**16**	**20**	**24**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.6-2.0	81	0	3	16	0	trace
	2.0-2.9	68	2	7	19	trace	4
a	**Mean**	**72**	**1**	**6**	**18**	**trace**	**3**

TM 17 NE 41 **1740 7850** **North East of Low Farm, Oakley** **Block C**

Surface level +20.7 m (+68 ft)
Water struck at +19.7 m
Shell and auger 152 mm
August 1981

Overburden 3.8 m
Mineral 12.7 m
Bedrock 1.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Peat	Peat, clayey and silty, greyish brown, very soft	3.8	3.8
Glacial Sand and Gravel	Sandy gravel, some flint cobbles from 5.0 m to 6.6 m, becoming more pebbly below 7.8 m with some subangular to subrounded flint cobbles Gravel: fine and coarse, angular to subangular flint with subrounded to rounded quartzite, quartz, chalk and some rounded flint Sand: medium with coarse and fine, subrounded quartz with angular flint and some chalk	12.7	16.5
Upper Chalk	Chalk, soft, white	1.4+	17.9

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 mm
2	58	40	3.8-5.0	4	19	65	3	5	4	0
			5.0-6.6	2	7	65	4	6	11	5
			6.6-7.8	2	12	67	9	7	3	0
			7.8-9.0	0	9	53	7	18	13	0
			9.0-10.1	1	5	28	6	24	36	0
			10.1-11.3	1	3	23	17	40	16	0
			11.3-12.3	1	3	27	19	37	13	0
			12.3-13.3	1	2	15	14	41	27	0
			13.3-14.3	2	4	27	19	40	8	0
			14.3-15.3	2	4	36	17	21	20	0
			15.3-16.5	1	4	35	11	31	18	0
			Mean	**2**	**7**	**40**	**11**	**24**	**15**	**1**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
3.8-5.0	78	0	3	0	18	1
5.0-6.6	57	0	3	22	9	9
6.6-7.8	56	0	7	13	12	12
7.8-9.0	82	1	3	9	4	1
9.0-10.1	73	2	5	12	4	4
10.1-12.3	73	4	5	7	7	4
12.3-14.3	65	5	8	13	6	3
14.3-16.5	73	2	8	8	5	4
Mean	**70**	**3**	**7**	**10**	**6**	**4**

TM 17 NE 42 1810 7873 South West of The Hall, Brockdish Block F1

Surface level +28.3 m (+76 ft)
Water struck at +21.8 m
Shell and auger 152 mm
July 1981

Overburden 1.8 m
Mineral 23.2 +

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, moderate yellowish brown	0.2	0.2
Head	Very sandy clay and clayey sand, moderate yellowish brown, fine angular flint pebbles	1.6	1.8
Kesgrave Sands and Gravels	**a** 'Clayey' sandy gravel Gravel: fine and coarse, angular flint with rounded quartzite, quartz and flint Sand: medium and fine, quartz, dark yellowish orange	0.7	2.5
Crag	**b** Sand, laminae of silty clay below 18.3 m Sand: medium with fine, rounded quartz, iron pan fragments from 10.4 m to 18.3 m, shelly below; 16.3 m, dusky yellow to yellowish orange brown; becoming dark yellowish brown below 9.1 m, greyish green and glauconitic below 18.3 m	22.5+	25.0

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 mm
a	10	64	26	1.8-2.5	10	22	36	6	12	14	0
b	6	93	1	2.5-3.5	9	37	53	0	1	0	0
				3.5-4.6	10	22	68	0	0	0	0
				4.6-5.6	12	45	43	0	0	0	0
				5.6-6.5	12	30	58	0	0	0	0
				6.5-7.7	4	25	71	0	0	0	0
				7.7-9.1	4	33	63	0	0	0	0
				9.1-10.4	6	18	74	2	0	0	0
				10.4-11.4	8	18	71	2	1	0	0
				11.4-13.1	7	27	55	2	7	2	0
				13.1-14.4	5	17	74	3	1	0	0
				14.4-16.3	6	17	74	2	1	0	0
				16.3-18.3	4	8	84	3	1	0	0
				18.3-20.6	5	8	84	3	0	0	0
				20.6-23.0	2	8	70	16	3	1	0
				23.0-25.0	8	13	63	15	1	0	0
				Mean	**6**	**19**	**70**	**4**	**1**	**trace**	**0**
a+b	**6**	**91**	**3**	**Mean**	**6**	**19**	**68**	**4**	**2**	**1**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.8-2.5	57	13	9	20	0	1

TM 17 NE 43 1890 7842 South East of The Hall, Brockdish Block C

Surface level +20.3 m (+67 ft)
Water struck at +19.3 m and +6.3 m
Shell and auger 152 mm
August 1981

Overburden 0.8 m
Mineral 1.3 m
Waste 11.9 m
Mineral 3.9 m
Waste 0.8 m
Mineral 1.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy, dark brown	0.3	0.3
Alluvium	Clay, silty, dark yellowish brown, soft, friable	0.5	0.8
River Terrace Deposits	**a** Gravel Gravel: fine with coarse, angular flint with rounded quartzite, some quartz and rounded flint Sand: medium and coase, rounded quartz and angular flint	1.3	2.1
Glacial Silt	Silty clay and clayey silt, light olive brown and medium grey, laminated, angular flint pebbles in top 0.1 m	9.1	11.2
Boulder Clay	Pebbly clay, silty, olive grey, many pebbles of chalk with some mudstone, very silty above 11.7 m	2.8	14.0
Glacial Sand and Gravel	**b** 'Very clayey' sand, some laminae of silty clay with chalk pebbles Sand: fine and medium with coarse, angular quartz with some flint	3.9	17.9
Boulder Clay	Pebbly clay, silty, some sandy layers, olive grey, many pebbles of chalk with some angular flint	0.8	18.7
Glacial Sand and Gravel	**c** 'Clayey' pebbly sand Gravel: fine, chalk Sand: fine and medium, quartz	1.3+	20.0

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 mm
a	6	30	64	0.8-2.1	6	1	15	14	48	16	0
b	32	67	1	14.0-16.4	30	38	26	5	1	0	0
				16.4-17.9	35	31	21	10	3	0	0
				Mean	**32**	**36**	**24**	**7**	**1**	**0**	**0**
c	18	77	5	18.7-20.0	18	36	34	7	3	2	0
a+b+c	**24**	**61**	**15**	**Mean**	**24**	**28**	**24**	**9**	**11**	**4**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.8-2.1	81	1	3	12	0	3

TM 17 NE 44 **1993 7867** **South of Thorpe Abbots Place, Brockdish** **Block C**

Surface level +20.3 m (+67 ft)
Water struck at +18.6 m
Shell and auger 152 mm
August 1981

Overburden 0.4 m
Mineral 11.5 m
Waste 1.8 m
Mineral 5.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy	0.3	0.3
Alluvium	Clay, sandy, silty, moderate yellowish brown, mottled	0.1	0.4
River Terrace Deposits	**a** 'Clayey' sand Gravel: fine, angular flint with soft sandstone Sand: fine with medium, subangular quartz and flint moderate yellowish brown	1.3	1.7
Glacial Sand and Gravel	**b** Pebbly sand, more pebbly below 6.9 m Gravel: fine with coarse, angular to subangular flint with rounded chalk, quartz and quartzite and some soft sedimentary rock pebbles Sand: medium, subrounded quartz with some flint and chalk, greyish orange	10.2	11.9
Glacial Silt	Silt and silty clay, medium grey, laminated	0.7	12.6
Glacial Sand and Gravel	**c** 'Very clayey' sand Gravel: fine, subrounded chalk with angular flint and soft sedimentary rock pebbles Sand: fine and medium, subrounded quartz with chalk, light olive grey	0.3	12.9
Boulder Clay	Pebbly clay, silty, olive grey, many chalk pebbles	0.8	13.7
Glacial Sand and Gravel	**d** 'Clayey' sandy gravel, more pebbly from 16.4 m to 18.6 m Gravel: fine and coarse, subangular flint and rounded quartzite with quartz, soft sedimentary rock pebbles and some chalk Sand: medium with fine, subrounded quartz and some shell fragments, olive grey	5.9+	19.6

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
					Fines	Sand			Gravel		
	Fines	Sand	Gravel		−⅛	+⅛ −¼	+¼ −1	+1 −4	+4 −16	+16 −64	+64 mm
a	12	86	2	0.4-1.7	12	51	34	1	2	0	0
b	1	87	12	1.7-2.7	3	40	48	2	3	4	0
				2.7-3.8	4	28	52	4	6	6	0
				3.8-4.9	1	28	53	5	6	7	0
				4.9-5.9	0	27	62	4	4	3	0
				5.9-6.9	2	44	43	4	6	1	0
				6.9-8.0	1	12	47	16	17	7	0
				8.0-9.2	1	15	57	13	11	3	0
				9.2-10.2	0	14	67	6	9	4	0
				10.2-11.2	1	10	63	12	11	3	0
				11.2-11.9	2	11	56	9	13	9	0
				Mean	**1**	**23**	**56**	**8**	**8**	**4**	**0**
c	20	79	1	12.6-12.9	20	41	33	5	1	0	0
d	14	63	23	13.7-15.0	34	45	19	1	1	0	0
				15.0-16.4	21	36	28	2	8	5	0
				16.4-17.6	4	5	13	11	28	32	7
				17.6-18.6	2	11	38	10	15	24	0
				18.6-19.6	5	20	65	8	1	1	0
				Mean	**14**	**25**	**32**	**6**	**10**	**12**	**1**
a+b+d	**7**	**78**	**15**	**Mean**	**7**	**26**	**46**	**6**	**8**	**7**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 −16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	2.7-3.8	64	0	16	6	3	11
	3.8-4.9	55	0	14	2	23	6
	4.9-5.9	63	3	2	23	9	0
	5.9-6.9	70	0	5	11	8	6
	6.9-8.0	83	0	3	1	10	3
	8.0-9.2	77	0	8	5	7	3
	9.2-10.2	85	1	0	3	11	trace
	10.2-11.2	75	0	13	4	3	5
	11.2-11.9	80	1	4	11	1	3
	Mean	**75**	**trace**	**7**	**6**	**8**	**4**
d	16.4-17.6	30	6	14	33	2	15
	17.6-18.6	47	3	11	22	5	12
	Mean	**35**	**5**	**13**	**30**	**3**	**14**

TM 17 NE 45 **1567 7781** **North of Oakley Fir Ground, Oakley** **Block D**

Surface level +28.1 m (+92 ft)
Water struck at +19.7 m
Shell and auger 152 mm
June 1981

Overburden	0.5 m
Mineral	1.1 m
Waste	6.8 m
Mineral	3.2 m
Waste	2.2 m
Bedrock	1.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sand, very clayey, pebbly, dusky yellowish brown	0.5	0.5
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: fine and coarse, angular to subangular flint with rounded quartzite, quartz and flint Sand: medium, rounded quartz with some flint and quartzite	1.1	1.6
Glacial Silt	Silt, sandy in part, light brown to dark yellowish orange, stiff, pebbly	0.8	2.4
Boulder Clay	Pebbly clay, very silty, light olive brown, sand layers, many fine pebbles of chalk with some coarse flint and quartzite, becoming increasingly sandy below 3.5 m	1.6	4.0
Glacial Silt	Silt, strong yellowish orange, soft to firm, fine chalk becoming more abundant downwards	4.4	8.4
Glacial Sand and Gravel	**b** Gravel Gravel: fine and coarse, with some cobbles below 10.6 m, angular with rounded quartzite and quartz and some rounded flint Sand: medium with some fine and coarse, subrounded to rounded quartz, strong yellowish orange	3.2	11.6
Glacial Silt	Silt, sandy in part, greyish yellowish brown, fine to coarse pebbles of flint and quartzite	2.2	13.8
Upper Chalk	Chalk, soft	1.8+	15.6

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 mm
a	12	65	23	0.5-1.6	12	10	50	5	12	11	0
b	9	40	51	8.4-9.6	16	9	37	6	13	19	0
				9.6-10.6	8	7	24	21	30	10	0
				10.6-11.6	2	1	5	6	37	46	3
				Mean	**9**	**6**	**23**	**11**	**25**	**25**	**1**
a+b	**10**	**46**	**44**	**Mean**	**10**	**7**	**30**	**9**	**22**	**21**	**1**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	8.4-9.6	78	4	4	12	0	2
	9.6-10.6	75	1	7	11	0	6
	10.6-11.6	59	1	8	27	0	5
	Mean	**64**	**1**	**7**	**23**	**0**	**5**

TM 17 NE 46 **1697 7725** **Oakley Park, Oakley** **Block F [1]**

Surface level +28.0 m (+92 ft)
Water struck at +26.5 m
Shell and auger 152 mm
July 1981

Overburden	1.5 m
Mineral	1.5 m
Waste	4.8 m
Mineral	17.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.3	0.3
Boulder Clay	Pebbly clay, sandy to silty, dark yellowish brown, many pebbles of rounded chalk and angular flint	1.2	1.5
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with rounded quartzite and some quartz Sand: medium with fine and coarse, subrounded quartz, subangular flint and some rounded chalk	1.5	3.0
Boulder Clay	Pebbly clay, sandy to silty, moderate yellowish brown, many pebbles of chalk with some flint	2.0	5.0
Glacial Sand and Gravel	**b** 'Clayey' sandy gravel Gravel: fine and coarse, angular flint with subrounded to rounded chalk, quartzite and some quartz, many sedimentary rock pebbles Sand: medium with fine, rounded quartz and angular flint	0.4	5.4
Boulder Clay	Pebbly clay, very sandy, dusky yellowish brown, firm, some pebbles of rounded chalk and angular flint	2.4	7.8
Kesgrave Sands and Gravels	**c** Pebbly sand Gravel: fine with coarse, angular flint with rounded quartzite, quartz and flint Sand: medium with fine, rounded quartz and quartzite with some angular flint	3.2	11.0
Crag	**d** 'Clayey' sand, some silt laminae, becoming more abundant below 18.3 m Sand: medium with fine, subrounded to rounded quartz, comminuted shell debris below 18.3 m; some iron pan and cemented siltstone, moderate olive brown becoming dark greenish grey below 18.3 m	14.0 +	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	14	54	32	1.5-3.0	14	24	19	11	22	10	0
b	10	65	25	5.0-5.4	10	11	45	9	14	11	0
c	3	85	12	7.8-8.8	3	12	54	9	17	5	0
				8.8-9.8	2	6	83	5	4	0	0
				9.8-11.0	3	19	63	5	6	4	0
				Mean	**3**	**13**	**66**	**6**	**9**	**3**	**0**
d	15	84	1	11.0-13.0	9	34	54	1	2	0	0
				13.0-15.0	7	35	55	2	1	0	0
				15.0-16.0	11	40	46	2	1	0	0
				16.0-18.0	6	16	68	9	1	0	0
				18.0-20.0	21	14	64	1	0	0	0
				20.0-22.5	26	31	39	3	1	0	0
				22.5-25.0	18	24	49	8	1	0	0
				Mean	**15**	**27**	**53**	**4**	**1**	**0**	**0**
a+c+d	**11**	**82**	**7**	**Mean**	**11**	**23**	**54**	**5**	**5**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.5-3.0	90	0	2	7	0	1
b	5.0-5.4	60	2	5	10	10	13
c	7.8-8.8	53	9	16	18	0	4
	8.8-11.0	45	8	19	27	0	1
	Mean	**49**	**9**	**17**	**22**	**0**	**3**

TM 17 NE 47 1760 7741 Lodge Hill, Hoxne **Block F [1]**

Surface level +30.9 m (+101 ft)
Water struck at +13.8 m
Shell and auger 203 mm and 152 mm
September 1981

Overburden 0.3 m
Mineral 4.3 m
Waste 12.5 m
Mineral 7.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown	0.3	0.3
Glacial Sand and Gravel	**a** Sandy gravel, very pebbly below 2.3 m, layers of very sandy light olive grey clay from 2.3 m to 3.2 m Gravel: fine and coarse, with some cobble below 3.2 m, angular to subangular flint with some rounded flint, quartzite and quartz Sand: medium and coarse with some fine, subrounded quartz and some angular flint, yellowish orange	4.3	4.6
Boulder Clay	Pebbly clay, silty, olive grey, very hard, many chalk and mudstone pebbles, becoming paler, sandy, with few pebbles below 14.8 m	12.5	17.1
Crag	b Pebbly sand, some thin laminae of silty clay, traces of ?organic silt at 23.0 m Gravel: some fine subangular flint and indurated mudstone Sand: fine and medium, subrounded to rounded quartz with some ?glauconite; comminuted shell debris below 21.6 m, moderate olive brown becoming dark greenish grey below 21.6 m	7.9+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	6	66	28	0.3-1.3	6	66	22	1	2	3	0
				1.3-2.3	6	50	26	3	8	7	0
				2.3-3.2	13	31	22	7	15	12	0
				3.2-4.6	2	9	22	15	26	24	2
				Mean	**6**	**36**	**23**	**7**	**14**	**13**	**1**
b	9	85	6	17.1-19.4	11	47	29	4	7	2	0
				19.4-21.6	11	50	38	1	0	0	0
				21.6-22.8	9	27	61	2	1	0	0
				22.8-25.0	6	20	61	2	2	9	0
				Mean	**9**	**36**	**47**	**2**	**3**	**3**	**0**
a+b	**8**	**77**	**15**	**Mean**	**8**	**38**	**35**	**4**	**8**	**7**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.3-3.2	91	5	2	2	0	trace
	3.2-4.6	91	1	3	3	0	2
	Mean	**92**	**3**	**2**	**2**	**0**	**1**

TM 17 NE 48 **1791 7791** **West of Fishers Lane, Hoxne** **Block F [1]**

Surface level +22.8 m (+75 ft)
Water struck at +21.2 m
Shell and auger 152 mm
August 1981

Overburden 0.6 m
Mineral 24.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, brick rubble	0.6	0.6
Head	**a** Sand Sand: medium with fine, quartz, dark yellowish brown	1.0	1.6
Glacial Sand and Gravel	**b** Pebbly sand, more pebbly below 7.2 m Gravel: fine with coarse, some cobbles below 9.4 m, angular flint with rounded quartzite and some quartz, chalk and sedimentary rock pebbles Sand: medium with fine and some coarse, subrounded to rounded quartz with flint and chalk, moderate yellowish brown	9.6	11.2
Crag	**c** Sand, some layers of micaceous silt and silty clay Gravel: indurated micaceous siltstone fragments and some flint, quartzite and iron pan Sand: medium with fine and some coarse, rounded quartz and some ?glauconite, comminuted shell debris; dusky yellow, becoming greenish grey below 15.7 m	13.8+	25.0

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 mm
a	6	94	0	0.6-1.6	6	31	62	1	trace	0	0
b	3	80	17	1.6-2.8	3	30	56	2	3	6	0
				2.8-3.8	2	29	64	1	1	3	0
				3.8-5.0	4	26	66	2	2	0	0
				5.0-6.2	8	26	64	2	0	0	0
				6.2-7.2	4	15	71	3	4	3	0
				7.2-8.2	1	15	61	9	10	4	0
				8.2-9.4	2	9	56	11	15	7	0
				9.4-11.2	1	3	22	19	38	15	2
				Mean	**3**	**18**	**55**	**7**	**11**	**6**	**trace**
c	6	93	1	11.2-13.5	3	22	64	10	1	0	0
				13.5-15.7	4	17	69	9	1	0	0
				15.7-17.4	5	31	55	8	1	0	0
				17.4-19.4	5	16	70	8	1	0	0
				19.4-21.5	8	14	72	4	2	0	0
				21.5-23.0	8	11	71	7	3	0	0
				23.0-25.0	7	16	69	8	0	0	0
				Mean	**6**	**18**	**67**	**8**	**1**	**0**	**0**
a+b+c	**4**	**88**	**8**	**Mean**	**4**	**19**	**62**	**7**	**6**	**2**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	7.2-8.2	77	0	2	8	10	3
	8.2-9.4	70	5	3	9	7	6
	9.4-11.2	79	0	4	11	3	3
b	**Mean**	**78**	**1**	**3**	**10**	**4**	**4**

TM 17 NE 49 **1815 7701** **South east of Low Street, Hoxne** **Block F [1]**

Surface level +30.4 m (+100 ft)
Water struck at 22.1 m
Shell and auger 152 mm
September 1981

Overburden 0.5 m
Mineral 2.0 m
Waste 0.4 m
Mineral 1.4 m
Waste 0.5 m
Mineral 20.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown	0.5	0.5
Glacial Sand and Gravel	**a** Sandy gravel, Gravel: coarse and fine, angular flint with some rounded flint, quartzite and quartz Sand: medium with fine, subrounded quartz, dark yellowish brown	2.0	2.5
Boulder Clay	Clay, very sandy, dusky yellow, some fine pebbles of angular flint	0.4	2.9
Glacial Sand and Gravel	**b** Pebbly sand, Gravel: coarse with fine, angular flint with some quartzite and chalk Sand: medium and fine, rounded quartz, pale yellowish orange	1.4	4.3
Boulder Clay	Clay, very sandy, pale yellowish orange, soft, some fine chalk pebbles	0.5	4.8
?Glacial Sand and Gravel	**c** Pebbly sand, more pebbly from 7.0 m to 9.2 m, 11.4 m to 11.9 m and 16.2 m to 17.0 m Gravel: fine with coarse, angular flint with rounded quartzite, quartz and some rounded flint Sand: medium with fine and coarse, subrounded quartz with flint and some quartzite, dark yellowish orange	12.2	17.0
?Kesgrave Sands and Gravels	**d** Sandy gravel Gravel: fine with coarse, angular flint with rounded quartzite, quartz and some rounded flint Sand: medium with coarse, rounded quartz with flint, greyish orange	4.8	21.8
Crag	**e** Sand Gravel: fine, rounded shell debris and iron pan fragments Sand: fine and medium, rounded quartz with some glauconite, greenish grey	3.2+	25.0

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 mm
a	8	62	30	0.5-1.5	8	17	26	5	16	28	0
				1.5-2.5	8	28	42	6	10	6	0
				Mean	**8**	**23**	**33**	**6**	**13**	**17**	**0**
b	5	88	7	2.9-3.8	5	44	44	2	2	3	0
				3.8-4.3	5	37	46	1	1	10	0
				Mean	**5**	**41**	**45**	**2**	**2**	**5**	**0**
c	2	85	13	4.8-6.0	5	24	61	2	3	5	0
				6.0-7.0	4	13	70	4	7	2	0
				7.0-8.3	2	9	56	10	15	8	0
				8.3-9.2	0	5	58	11	10	16	0
				9.2-10.2	0	12	73	6	6	3	0
				10.2-11.4	1	9	72	5	9	4	0
				11.4-11.9	1	6	46	13	29	5	0
				11.9-13.6	2	7	70	9	7	5	0
				13.6-14.9	2	14	79	3	2	0	0
				14.9-16.2	1	16	71	5	5	2	0
				16.2-17.0	1	11	53	16	12	7	0
				Mean	**2**	**12**	**66**	**7**	**8**	**5**	**0**
d	2	62	36	17.0-18.2	0	6	39	12	29	14	0
				18.2-19.9	2	9	56	11	16	6	0
				19.9-21.8	3	3	38	12	30	14	0
				Mean	**2**	**6**	**44**	**12**	**25**	**11**	**0**
e	3	96	1	21.8-23.9	1	50	47	1	1	0	0
				23.9-25.0	6	45	45	3	1	0	0
				Mean	**3**	**47**	**47**	**2**	**1**	**0**	**0**
a+b+c +d+e	**3**	**79**	**18**	**Mean**	**3**	**18**	**54**	**7**	**11**	**7**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.5-2.5	91	2	1	6	0	trace
c	7.0-8.3	58	5	11	22	0	4
	11.4-11.9	67	6	7	17	0	3
	Mean	**61**	**5**	**10**	**20**	**0**	4
d	17.0-18.2	55	10	15	15	0	5
	18.2-19.9	49	3	31	16	0	1
	19.9-21.8	37	12	23	24	0	4
	Mean	**44**	**10**	**23**	**20**	**0**	**3**

TM 17 NE 50 **1955 7772** **Park Farm, Syleham** **Block F [1]**

Surface level +39.7 m (+130 ft)
Water struck, depth unrecorded
Shell and auger 152 mm
September 1981

Overburden 7.5 m
Mineral 5.1 m
Waste 0.2 m
Mineral 5.2 m
Waste 3.8 m
Mineral 3.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, clayey, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty, olive grey, very hard, many pebbles of chalk, some flint and mudstone, light olive grey clayey silt from 2.2 m to 2.8 m	7.1	7.5
Glacial Sand and Gravel	**a** 'Clayey' pebbly sand, traces of dark yellowish brown chalky clay from 8.5 m to 9.5 m, yellowish orange fine sand with traces of chalky laminae below 11.4 m Gravel: fine with coarse, angular flint with subrounded to rounded quartzite, chalk and some quartz and sedimentary rock pebbles Sand: medium with fine and some coarse, subrounded quartz with chalk, dark yellowish orange	5.1	12.6
Boulder Clay	Pebbly clay, very sandy, light olive brown, firm, some rounded chalk pebbles	0.2	12.8
Glacial Sand an Gravel	**b** 'Clayey' pebbly sand, traces of silty clay laminae below 14.6 m, more pebbly below 15.7 m Gravel: fine with coarse, angular flint with some quartz, quartzite and chalk Sand: medium with fine, subrounded quartz with some subangular flint and chalk	5.2	18.0
Boulder Clay	Pebbly clay, sandy, light olive grey becoming brownish grey below 18.1 m, some pebbles of rounded flint with some quartz and a trace of chalk	3.8	21.8
Kesgrave Sands and Gravels	**c** Sandy gravel Gravel: fine with coarse, subangular flint with rounded quartzite, quartz and flint Sand: medium with coarse and fine, rounded quartz with subrounded flint and quartz, pale yellowish brown	3.2+	25.0

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 mm
a	14	67	19	7.5-8.5	8	25	38	7	15	7	0
				8.5-9.5	8	20	42	10	15	5	0
				9.5-10.5	11	10	35	11	24	9	0
				10.5-11.4	19	17	38	8	14	4	0
				11.4-12.6	24	40	27	2	5	2	0
				Mean	**14**	**24**	**36**	**7**	**14**	**5**	**0**
b	11	84	5	12.8-13.6	22	47	28	2	1	0	0
				13.6-14.6	13	40	46	1	0	0	0
				14.6-15.7	12	33	52	2	1	0	0
				15.7-18.0	6	21	57	6	8	2	0
				Mean	**11**	**31**	**49**	**4**	**4**	**1**	**0**
c	3	66	31	21.8-22.9	4	10	32	12	27	15	0
				22.9-23.9	2	8	41	16	24	9	0
				23.9-25.0	2	6	48	26	16	2	0
				Mean	**3**	**8**	**40**	**18**	**22**	**9**	**0**
a+b+c	**11**	**72**	**17**	**Mean**	**11**	**23**	**40**	**9**	**12**	**5**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	7.5-8.5	66	3	7	20	0	4
	8.5-9.5	66	0	3	14	12	5
	9.5-10.5	64	2	3	15	12	4
	10.5-11.4	56	3	3	20	11	7
	Mean	**63**	**2**	**4**	**17**	**9**	**5**
c	21.8-22.9	59	7	14	15	0	5
	22.9-23.9	51	10	16	22	0	1
	Mean	**54**	**9**	**15**	**19**	**0**	**3**

TM 17 NE 51 1573 7671 East of Ivy House, Oakley **Block F [1]**

Surface level +39.5 m (+130 ft)
Water struck at +23.0 m
Shell and auger 152 mm
August 1981

Overburden 16.5 m
Mineral 7.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, strong brown	0.3	0.3
Boulder Clay	Pebbly clay, silty, mottled moderate olive brown and dark grey, firm, many pebbles of subrounded chalk and some angular flint, becoming dark grey and hard below 1.4 m, soft below 6.3 m	9.2	9.5
	Pebbly clay, very sandy, light grey, soft, fine rounded chalk pebbles	4.5	14.0
	Pebbly clay, silty, dark brown, firm, some pebbles of subrounded chalk and traces of angular flint, rounded quartz and quartzite	2.5	16.5
Kesgrave Sands and Gravel	**a** Sandy gravel Gravel: fine with coarse, subangular flint with rounded quartzite, quartz and flint Sand: medium with coarse, rounded quartz with quartzite and angular flint	1.0	17.5
Crag	b Sand Sand: medium with fine, rounded quartz, light brown becoming strong yellowish orange below 22.0 m	6.5+	24.0

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 mm
a	3	72	25	16.5-17.5	3	5	47	20	16	9	0
b	6	93	1	17.5-19.5	7	28	59	3	2	1	0
				19.5-22.0	5	28	66	1	0	0	0
				22.0-24.0	6	38	55	1	0	0	0
				Mean	**6**	**31**	**60**	**2**	**1**	**trace**	**0**
a+b	5	91	4	**Mean**	**5**	**27**	**60**	**4**	**3**	**1**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	16.5-17.5	58	6	11	25	0	0

TM 17 NE 52 1682 7641 East of Brome Farm, Oakley **Block F [1]**

Surface level +26.3 m (+86 ft)
Water struck at +23.7 m
Shell and auger 152 mm
August 1981

Overburden 0.2 m
Mineral 5.4 m
Waste 1.4 m
Mineral 1.8 m
Waste 3.4 m
Mineral 6.3 m
Waste 0.9 m
Bedrock 1.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.2	0.2
Glacial Sand and Gravel	**a** Pebbly sand, more pebbly below 4.5 m Gravel: fine with coarse, angular flint with quartzite, some quartz and rounded flint Sand: medium with fine, quartz with subangular flint, strong yellowish orange	5.4	5.6
Boulder Clay	Pebbly clay, silty, dark yellowish brown, hard, fine pebbles of chalk with some flint	1.4	7.0
Glacial Sand and Gravel	**b** Sandy gravel Gravel: fine with coarse, angular flint with rounded chalk and quartzite Sand: medium and coarse, flint with quartz and some chalk	1.8	8.8

Boulder Clay	Pebbly clay, silty, olive grey, hard, chalk and flint pebbles	3.4	12.2
Glacial Sand and Gravel	**c** 'Clayey' pebbly sand Gravel: fine with coarse, angular flint, subrounded chalk with sedimentary rock pebbles, some quartzite and quartz Sand: medium with fine, quartz with chalk	1.0	13.2
Boulder Clay	Pebbly clay, grey, chalk and flint pebbles	0.3	13.5
Glacial Sand and Gravel	**d** Pebbly sand Gravel: fine with coarse, angular flint with chalk Sand: medium with fine, quartz with chalk	1.4	14.9
Boulder Clay	Pebbly clay, grey, chalk and flint pebbles	0.2	15.1
Glacial Sand and Gravel	**e** Pebbly sand with laminae of grey clay and silt Gravel: fine with coarse, angular flint with sedimentary rock pebbles, rounded flint, quartzite and quartz Sand: medium and fine with some coarse, subrounded quartz with some chalk and flint, grey	3.4	18.5
Boulder Clay	Pebbly clay, silty, greyish white, chalk pebbles	0.9	19.4
Upper Chalk	Chalk, soft	1.6+	21.0

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 mm
a	7	79	14	0.2-1.5	9	27	57	2	4	1	0
				1.5-2.6	8	39	46	2	5	0	0
				2.6-4.5	6	23	57	4	8	2	0
				4.5-5.6	4	14	37	7	21	17	0
				Mean	**7**	**25**	**50**	**4**	**9**	**5**	**0**
b	2	55	43	7.0-8.0	2	4	29	9	30	26	0
				8.0-8.8	3	8	53	12	17	7	0
				Mean	**2**	**6**	**39**	**10**	**25**	**18**	**0**
c	14	72	14	12.2-13.2	14	15	52	5	12	2	0
d	4	91	5	13.5-14.9	4	31	56	4	3	2	0
e	8	73	19	15.1-16.8	9	32	34	11	11	3	0
				16.8-18.5	8	21	36	11	19	5	0
				Mean	**8**	**26**	**36**	**11**	**15**	**4**	**0**
a+b+c +d+e	**7**	**75**	**18**	**Mean**	**7**	**23**	**45**	**7**	**12**	**6**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	2.6-5.6	88	1	1	9	0	1
b	7.0-8.8	55	0	2	20	16	7
c+d	12.2-14.9	36	0	3	8	37	16
e	15.1-18.5	50	9	7	15	1	18

TM 17 NE 53 1753 7638 **Fairstead Farm, Hoxne** **Block F [1]**

Surface level +36.9 m (+121 ft)
Water struck at +21.2 m
Shell and auger 152 mm
September 1981

Overburden 0.4 m
Mineral 5.6 m
Waste 9.7 m
Mineral 10.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown	0.4	0.4
Head Gravel	**a** 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with some quartzite, quartz and ironstone Sand: medium with fine and coarse, subrounded quartz with angular flint	3.3	3.7
Glacial Sand and Gravel	**b** Pebbly sand Gravel: fine with coarse, angular flint with rounded quartzite and quartz Sand: medium with fine and coarse, subangular quartz, moderate yellowish orange	2.3	6.0
Boulder Clay	Clay, silty and sandy, dark, yellowish brown, soft	1.5	7.5
	Clay, silty, greyish yellow, friable, feint lamination	0.6	8.1
	Pebbly clay, very silty and sandy, greyish yellowish brown, soft to firm, some pebbles of chalk and quartz; becoming olive grey, hard with some chalk pebbles, below 10.5 m	7.6	15.7
Kesgrave Sands and Gravels	**c** Sandy gravel; 0.1 m layer of clayey silt with laminae of brownish black humic clay at 21.0 m Gravel: fine with coarse, angular flint with rounded quartz, quartzite and flint Sand: medium with coarse and fine, subrounded quartz with subangular flint, greyish orange	8.5	24.2
Crag	**d** Pebbly sand, no pebbles below 25.0 m Gravel: fine, angular flint Sand: medium with fine, rounded quartz, moderate olive brown becoming greyish olive	1.6+	25.8

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 mm
a	14	54	32	0.4-1.5	12	12	53	5	10	8	0
				1.5-2.5	13	20	26	11	24	6	0
				2.5-3.7	16	13	16	10	22	23	0
				Mean	**14**	**15**	**30**	**9**	**19**	**13**	**0**
b	8	76	16	3.7-4.7	10	13	61	7	8	1	0
				4.7-6.0	7	16	49	7	13	8	0
				Mean	**8**	**15**	**54**	**7**	**11**	**5**	**0**
c	1	63	36	15.7-16.7	5	6	23	6	30	30	0
				16.7-17.8	2	2	27	9	39	21	0
				17.8-19.1	0	4	42	21	23	10	0
				19.1-20.4	1	2	26	18	34	16	3
				20.4-21.5	0	6	85	7	2	0	0
				21.5-22.4	0	4	66	20	8	2	0
				22.4-24.2	0	3	47	14	24	12	0
				Mean	**1**	**4**	**45**	**14**	**23**	**13**	**trace**
d	3	89	8	24.2-25.0	2	26	48	8	10	6	0
				25.0-25.8	4	32	63	1	0	0	0
				Mean	**3**	**29**	**56**	**4**	**5**	**3**	**0**
a+b +c+d	**5**	**65**	**30**	**Mean**	**5**	**10**	**44**	**11**	**19**	**11**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.4-1.5	94	0	2	3	0	1
	1.5-2.5	97	0	trace	2	0	1
	2.5-3.7	89	0	5	5	0	1
a	**Mean**	**92**	0	**3**	**4**	**0**	**1**
b	3.7-6.0	75	0	7	17	0	1
c	15.7-16.7	56	11	13	19	0	1
	16.7-17.8	48	18	13	20	0	1
	17.8-19.1	55	14	14	15	0	2
	19.1-20.4	49	12	19	19	0	1
	22.4-24.2	51	11	17	21	0	trace
c	**Mean**	**52**	**13**	**15**	**19**	**0**	**1**

TM 17 NE 54 **1824 7641** **Abbey Farm, Hoxne** **Block F [1]**

Surface level +37.8 m (+124 ft)
Water struck at +19.0 m
Shell and auger 152 mm
August 1981

Overburden 3.1 m
Mineral 3.7 m
Waste 1.1 m
Mineral 2.5 m
Waste 8.4 m
Mineral 6.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, soil and brick rubble	0.5	0.5
Boulder Clay	Pebbly clay, silty to sandy, mottled olive grey to olive brown, hard, some pebbles of chalk and angular flint, very sandy from 1.1 m to 1.4 m	2.6	3.1
Glacial Sand and Gravel	**a** Pebbly sand Gravel: fine with coarse, angular flint with rounded quartzite and some quartz, chalk below 5.2 m Sand: medium with fine and coarse, subrounded quartz with some angular flint, strong yellowish orange	3.7	6.8
Boulder Clay	Pebbly clay, silty to sandy, yellowish orange, soft, many chalk pebbles	1.1	7.9
Glacial Sand and Gravel	**b** 'Clayey' pebbly sand, layers of chalky sandy clay Gravel: fine with coarse, angular flint with quartzite, quartz and chalk Sand: medium with fine, subrounded quartz, some flint, greyish orange	2.5	10.4
Boulder Clay	Pebbly clay, very sandy, greyish orange, soft, becoming brownish grey to olive grey below 12.4 m, a few pebbles of rounded chalk, quartz and angular flint	8.4	18.8
Kesgrave Sands and Gravels	**c** Sandy gravel, layer of silty clay from 18.8 m to 20.0 m Gravel: fine with coarse, subangular flint with subrounded to rounded quartz, quartzite and flint Sand: medium with coarse, rounded quartz, strong yellowish orange, some iron staining	5.9	24.7
Crag	**d** Sand Sand: fine with medium, rounded quartz, glauconite, pale olive	0.8+	25.5

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 mm
a	8	73	19	3.1-4.0	6	10	45	12	21	6	0
				4.0-5.2	8	38	47	3	3	1	0
				5.2-6.1	8	13	40	13	19	7	0
				6.1-6.8	10	18	43	7	11	11	0
				Mean	**8**	**21**	**44**	**8**	**13**	**6**	**0**
b	11	83	6	7.9-8.9	11	22	54	7	4	2	0
				8.9-10.0	9	38	48	2	2	1	0
				10.0-10.4	13	15	49	12	8	3	0
				Mean	**11**	**28**	**50**	**5**	**4**	**2**	**0**
c	1	63	36	18.8-20.0	2	16	29	17	23	13	0
				20.0-21.5	1	10	65	13	6	5	0
				21.5-22.5	0	5	47	19	27	2	0
				22.5-23.5	0	3	32	15	34	16	0
				23.5-24.7	1	5	21	11	41	21	0
				Mean	**1**	**8**	**41**	**14**	**25**	**11**	**0**
d	2	98	0	24.7-25.5	2	69	28	1	0	0	0
a+b +c+d	**5**	**72**	**23**	**Mean**	**5**	**19**	**43**	**10**	**16**	**7**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	3.1-4.0	78	0	11	11	0	trace
	4.0-5.2	85	0	3	12	0	0
	5.2-6.8	73	0	1	11	8	7
a	**Mean**	**74**	**0**	**4**	**11**	**6**	**5**
b	7.9-10.4	69	0	9	17	5	0
c	18.8-20.0	54	11	17	18	0	trace
	20.0-21.5	53	8	28	10	0	1
	21.5-22.5	57	8	17	18	0	trace
	22.5-23.5	56	9	19	14	0	2
	23.5-24.7	54	9	16	20	0	1
c	**Mean**	**55**	**9**	**18**	**17**	**0**	**1**

TM 17 NE 55 **1886 7677** **North of Cross Street, Hoxne** **Block F [1]**

Surface level +31.4 m (+103 ft)
Water struck at +29.4 m
Shell and auger 152 mm
September 1981

Overburden 0.3 m
Mineral 5.0 m
Waste 15.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown with flint pebbles	0.3	0.3
Head Gravel	**a** 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with some rounded quartz and quartzite Sand: medium with fine and coarse, angular flint and quartz, dark yellowish brown	0.8	1.1
?Head Gravel	**b** Pebbly sand, very pebbly from 2.0 m to 3.1 m, few pebbles from 4.2 m to 5.3 m, layers of silty clay below 3.1 m Gravel: fine and coarse, angular flint with some rounded quartzite Sand: fine and medium, angular flint and quartz, moderate yellowish brown	4.2	5.3
Silt	Silt, sandy, mottled black and dusky yellowish brown, occasional layers of moderate brown silt with angular flint pebbles, becoming olive black to olive grey with some black (?organic) layers	1.9	7.2
Boulder Clay	Pebbly clay, olive grey, firm, some pebbles of chalk and flint	13.8+	21.0

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 mm
a	11	49	40	0.3-1.1	11	14	22	13	29	11	0
b	9	72	19	1.1-2.0	7	39	38	4	7	5	0
				2.0-3.1	2	8	19	16	31	24	0
				3.1-4.2	16	44	24	6	5	5	0
				4.2-5.3	11	51	33	4	1	0	0
				Mean	**9**	**36**	**28**	8	**11**	**8**	**0**
a+b	**9**	**68**	**23**	**Mean**	**9**	**33**	**27**	**8**	**14**	**9**	**0**

TM 17 NE 56 **1992 7633** **North of Hoxne Wood, Hoxne** **Block F [1]**

Surface level +37.3 m (+122 ft)
Water struck at +26.5 m
Shell and auger 152 mm
August 1981

Overburden 2.1 m
Mineral 8.7 m
Waste 0.9 m
Mineral 13.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sand, clayey, moderate yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty, mottled light olive grey and light olive brown, very sandy above 1.1 m, many chalk pebbles	1.7	2.1
Glacial Sand and Gravel	**a** 'Clayey' pebbly sand, thin layers of chalky, sandy clay Gravel: fine with coarse, angular flint with rounded quartzite and some quartz, chalk below 3.1 m Sand: medium with fine and coarse, subrounded quartz with angular flint and some chalk, moderate yellowish brown	8.7	10.8
Boulder Clay	Pebbly clay, very sandy, fine chalk and flint pebbles	0.9	11.7
Glacial Sand and Gravel	**b** 'Clayey' sand, sandy clay layers with chalk, flint and mudstone pebbles below 13.5 m Gravel: fine, angular flint Sand: fine and medium, subrounded quartz with some chalk, moderate yellowish brown	3.7	15.4
Crag	**c** Sand, silty clay laminae above 20.0 m Sand: fine and medium, rounded quartz, dusky yellow becoming pale olive to greyish olive below 22.0 m	9.6+	25.0

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 mm
a	14	67	19	2.1-3.1	21	29	39	5	5	1	0
				3.1-4.2	8	11	53	8	11	9	0
				4.2-5.2	14	10	30	11	24	11	0
				5.2-7.0	11	9	31	16	26	7	0
				7.0-8.0	14	10	34	22	18	2	0
				8.0-9.3	13	10	46	12	17	2	0
				9.3-10.8	17	52	27	2	2	0	0
				Mean	**14**	**19**	**37**	**11**	**15**	**4**	**0**
b	12	84	4	11.7-13.5	14	39	40	5	2	0	0
				13.5-15.4	10	45	29	10	5	1	0
				Mean	**12**	**42**	**35**	**7**	**4**	**trace**	**0**
c	8	92	0	15.4-16.3	11	64	23	1	1	0	0
				16.3-17.3	10	42	48	0	0	0	0
				17.3-20.0	8	55	37	0	0	0	0
				20.0-22.0	4	30	47	19	0	0	0
				22.0-24.0	10	52	38	0	0	0	0
				24.0-25.0	8	30	61	1	0	0	0
				Mean	**8**	**46**	**42**	**4**	**trace**	**0**	**0**
a+b+c	**11**	**80**	**9**	**Mean**	**11**	**35**	**38**	**7**	**7**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	2.1-4.2	65	0	7	13	12	3
	4.2-7.0	63	trace	5	16	13	3
	7.0-9.3	67	0	4	9	16	4
a	**Mean**	**64**	**trace**	5	**14**	**14**	**3**

TM 17 NE 57 **1614 7568** **Pit Wood, Hoxne** **Block F [1]**

Surface level +30.2 m (+99 ft)
Water struck at +24.3 m
Shell and auger 152 mm
November 1981

Overburden	0.5 m
Mineral	8.7 m
Waste	0.6 m
Mineral	2.9 m
Waste	2.8 m
Mineral	3.0 m
Waste	2.7 m
Mineral	3.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, pebbly, dark brown	0.5	0.5
Glacial Sand and Gravel	**a** Gravel, some subangular flint cobbles below 6.5 m Gravel: fine and coarse, angular flint with rounded quartzite, some quartz, rounded flint and sedimentary rock pebbles Sand: medium, coarse and fine, angular to rounded quartz with angular flint, moderate yellowish brown	8.7	9.2
Boulder Clay	Pebbly clay, silty, olive grey, many rounded chalk pebbles	0.6	9.8
Glacial Sand and Gravel	**b** Sand Sand: medium and fine, subrounded quartz with angular flint	2.9	12.7
Glacial Silt	**c** Silt, clayey, light olive grey	2.8	15.5
Glacial Sand and Gravel	**d** 'Clayey' sand Sand: fine with medium, subrounded quartz some angular flint and a trace of chalk	3.0	18.5
Glacial Silt	**e** Silt, clayey, light olive grey	2.7	21.2
Glacial Sand and Gravel	**f** 'Very clayey' sand, with a layer of chalky clay at 22.0 m Sand: fine with medium, quartz with chalk and flint light olive grey	1.8	23.0
Crag	**g** Sand Sand: fine and medium, rounded quartz, greenish grey, with shell fragments	2.0+	25.0

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 mm
a	4	45	51	0.5-1.7	3	19	29	6	22	21	0
				1.7-2.7	5	25	35	7	15	13	0
				2.7-3.7	14	25	31	5	15	10	0
				3.7-4.6	8	12	23	12	28	17	0
				4.6-6.5	0	2	7	19	37	35	0
				6.5-7.5	1	2	11	23	36	23	4
				7.5-9.2	1	2	10	24	33	27	3
				Mean	**4**	**11**	**19**	**15**	**27**	**23**	**1**
b	7	93	0	9.8-11.7	4	42	53	1	0	0	0
				11.7-12.7	13	46	39	1	1	0	0
				Mean	**7**	**44**	**48**	**1**	**trace**	**0**	**0**
c	45	55	0	12.7-15.5	45	47	7	1	0	0	0
d	10	90	0	15.5-16.5	15	55	29	1	0	0	0
				16.5-17.5	8	56	35	1	0	0	0
				17.5-18.5	7	57	36	0	0	0	0
				Mean	**10**	**57**	**33**	**trace**	**trace**	**0**	**0**
e	58	42	0	18.5-21.2	58	31	11	0	0	0	0
f	28	71	1	21-2.23.0	28	44	26	1	trace	1	0
g	7	93	0	23.0-24.0	8	49	41	2	0	0	0
				24.0-25.0	7	51	39	3	0	0	0
				Mean	**7**	**51**	**40**	**2**	**trace**	**0**	**0**
a+b+d +f+g	**8**	**67**	**25**	**Mean**	**8**	**30**	**29**	**8**	**14**	**11**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.5-1.7	88	2	3	4	0	3
	1.7-3.7	90	trace	4	4	0	2
	3.7-6.5	92	0	1	7	0	trace
	6.5-9.2	82	2	3	10	0	3
a	**Mean**	**89**	**1**	**2**	**7**	**0**	**1**

TM 17 NE 58 **1710 7539** **Gissing Farm, Hoxne** **Block F [1]**

Surface level +44.6 m (+146 ft)
Water struck at +26.9 m
Shell and auger 152 mm
September 1981

Overburden 0.7 m
Mineral 3.3 m
Waste 8.6 m
Mineral 12.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, sandy, moderate brown, some flint pebbles	0.7	0.7
Head Gravel	**a** 'Very clayey' sandy gravel Gravel: fine and coarse, angular flint with rounded quartzite and some quartz Sand: fine and medium, angular quartz and flint, light brown	3.3	4.0
Boulder Clay	Pebbly clay, silty, moderate yellowish brown, soft abundant rounded chalk pebbles above 5.1 m, sparse below; sandy intercalations from 5.1 m to 6.1 m; becoming sandy with some pebbles of angular flint, rounded quartz, quartzite and a trace of chalk below 7.8 m	8.6	12.6
Glacial Sand and Gravel	**b** 'Very clayey' sand, with a layer of laminated sandy clay from 13.1 m to 13.4 m Gravel: fine and coarse, angular flint above 13.1 m Sand: medium with fine, subrounded quartz with some angular flint, iron-stained, dark yellowish orange	1.6	14.2
Kesgrave Sands and Gravels	**c** Pebbly sand, with some laminae of sandy clay Gravel: fine with coarse, subangular flint with rounded quartz, quartzite and flint Sand: medium, rounded quartz with quartzite, yellowish grey	2.9	17.1
Crag	**d** 'Clayey' sand, with laminae of silty clay Sand: fine with medium, rounded quartz with some glauconite, dark yellowish orange	7.9+	25.0

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 mm
a	28	52	20	0.7-1.8	24	27	24	4	7	14	0
				1.8-2.8	35	16	19	6	11	13	0
				2.8-4.0	29	20	28	9	14	0	0
				Mean	**28**	**21**	**24**	**7**	**11**	**9**	**0**
b	21	77	2	12.6-13.1	17	25	48	6	2	2	0
				13.1-14.2	22	21	56	1	0	0	0
				Mean	**21**	**22**	**52**	**3**	**1**	**1**	**0**
c	5	75	20	14.2-15.8	5	7	53	11	16	8	0
				15.8-17.1	5	11	54	15	12	3	0
				Mean	**5**	**9**	**53**	**13**	**14**	**6**	**0**
d	10	90	0	17.1-18.6	19	60	18	2	1	0	0
				18.6-19.7	12	72	13	2	1	0	0
				19.7-21.2	8	69	22	1	0	0	0
				21.2-22.2	8	71	21	0	0	0	0
				22.2-24.0	7	75	18	0	0	0	0
				24.0-25.0	5	79	16	0	0	0	0
				Mean	**10**	**71**	**18**	**1**	**trace**	**0**	**0**
a+b+ c+d	**14**	**78**	**8**	**Mean**	**14**	**44**	**29**	**5**	**5**	**5**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.7-4.0	86	0	2	7	0	5
c	14.2-17.1	36	12	28	20	0	4

TM 17 NE 59 **1848 7559** **Clink Hill, Hoxne** **Block F [1]**

Surface level +29.2 m (+96 ft)
Water struck at +25.7 m
Shell and auger 152 mm
September 1981

Overburden 2.2 m
Mineral 22.4 m
Bedrock 0.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, sandy, greyish brown	1.0	1.0
Alluvium	Silt, clayey and sandy, mottled dark yellowish orange and moderate yellowish brown, some pebbles	1.2	2.2
Crag	Sand: Gravel: subangular flint and some rounded quartz and quartzite above 3.5 m, iron pan below 10.5 m Sand: fine with medium, rounded quartz, comminuted shell fragments below 12.5 m, light olive grey becoming dark yellowish orange below 11.6 m and olive grey below 12.8 m	22.4	24.6
Upper Chalk	Chalk, silty, white, soft	0.4+	25.0

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 mm
5	92	3	2.2-3.2	9	44	14	5	14	14	0
			3.2-3.5	8	74	11	2	5	0	0
			3.5-4.5	12	67	21	0	0	0	0
			4.5-6.5	8	54	38	0	0	0	0
			6.5-8.5	5	62	33	0	0	0	0
			8.5-10.5	6	51	43	0	0	0	0
			10.5-12.5	5	50	44	1	0	0	0
			12.5-14.5	7	22	67	3	0	1	0
			14.5-16.5	6	30	49	10	5	0	0
			16.5-18.5	3	49	46	1	1	0	0
			18.5-20.5	1	62	36	0	0	1	0
			20.5-22.6	1	65	32	1	1	0	0
			22.6-24.0	4	43	42	8	3	0	0
			Mean	**5**	**49**	**41**	**2**	**2**	**1**	**0**

TM 17 NE 60 **1957 7548** **Chestnut Tree Farm, Hoxne** **Block F [1]**

Surface level +34.9 m (+115 ft)
Water struck at approximately +25.1 m
Shell and auger 152 mm
September 1981

Overburden 2.6 m
Mineral 22.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy, dark yellowish brown	0.4	0.4
Head	Sand, very clayey, becoming sandy clay, dark yellowish brown to 1.7 m, becoming light brown below, some pebbles of angular flint and rounded quartz	2.2	2.6
Crag	Sand, some silty clay laminae from 6.7 m to 10.3 m Sand: fine with medium, rounded quartz; cemented micaceous sandstone fragments from 16.8 m to 21.0 m, shelly below 19.0 m; dark yellowish orange, becoming dusky yellow below 8.3 m and greenish grey, glauconitic, below 12.6 m	22.4+	25.0

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 mm
7	90	3	2.6-3.7	10	30	58	1	1	0	0
			3.7-4.6	10	31	58	1	0	0	0
			4.6-5.6	9	62	29	0	0	0	0
			5.6-6.7	9	50	41	0	0	0	0
			6.7-8.3	13	52	35	0	0	0	0
			8.3-9.3	7	86	7	0	0	0	0
			9.3-10.3	6	86	8	0	0	0	0
			10.3-11.3	6	67	27	0	0	0	0
			11.3-12.6	6	61	33	0	0	0	0
			12.6-14.8	4	78	18	0	0	0	0
			14.8-16.8	4	62	34	0	0	0	0
			16.8-19.0	3	46	18	4	17	12	0
			19.0-21.0	6	31	60	2	1	0	0
			21.0-23.2	6	51	38	2	1	2	0
			23.2-25.0	17	67	13	2	1	0	0
			Mean	**7**	**58**	**31**	**1**	**2**	**1**	**0**

TM 17 SW 42 **1070 7467** **Glebe Farm, Mellis** **Block E [1]**

Surface level +49.4 m (+162 ft)
Water struck at +34.1 m
Shell and auger 152 mm
September 1981

Overburden 13.0 m
Mineral 1.2 m
Waste 1.1 m
Mineral 4.2 m
Waste 1.0 m
Mineral 4.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy and silty	0.3	0.3
Boulder Clay	Pebbly clay, sandy, mottled light olive grey and dark yellowish orange, becoming dark grey and hard below 1.9 m, many pebbles of subrounded chalk, angular flint and a few reddish-brown quartzite pebbles below 7.5 m	9.1	9.4
	Clay, very silty, greyish orange, soft, some coarse pebbles of flint and chalk	0.8	10.2
	Clay, sandy, dusky yellowish brown, firm to hard, some fine pebbles of chalk with some flint and quartzite	2.8	13.0
Glacial Sand and Gravel	**a** 'Clayey' sand with nodules of silt and sparse pebbles Sand: medium with fine, rounded quartz, greyish orange	1.2	14.2
?Glacial Silt	Silt, olive grey, firm, with irregular yellowish brown fine sand layers	1.1	15.3
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: fine with coarse, subrounded to subangular flint, rounded quartz and brown and grey quartzite Sand: medium with coarse and fine, quartz and quartzite with flint and a trace of chalk	4.2	19.5
Crag	Silt with thin horizontal sandy layers, dark grey, soft, quartz and glauconite with some mica	1.0	20.5
	c Sand, Sand: fine and medium, rounded quartz and glauconite with a trace of mica	4.5+	25.0

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 mm
a	13	85	2	13.0-14.2	13	19	65	1	2	0	0
b	4	65	31	15.3-16.3	7	10	42	13	22	6	0
				16.3-17.3	2	6	36	17	31	8	0
				17.3-18.3	2	4	43	23	22	6	0
				18.3-19.5	4	13	38	15	21	9	0
				Mean	**4**	**8**	**40**	**17**	**24**	**7**	**0**
c	7	93	0	20.5-21.5	10	78	12	0	0	0	0
				21.5-22.5	9	79	12	0	0	0	0
				22.5-23.5	7	47	46	0	0	0	0
				23.5-25.0	4	41	55	0	0	0	0
				Mean	**7**	**62**	**31**	**trace**	**0**	**0**	**0**
a+b+c	**6**	**80**	**14**	**Mean**	**6**	**33**	**39**	**8**	**11**	**3**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	15.3-16.3	41	3	40	16	0	0
	16.3-17.3	35	6	34	24	0	1
	17.3-18.3	37	6	34	23	0	0
	18.3-19.5	35	12	28	24	0	1
b	**Mean**	**37**	**7**	**34**	**22**	**0**	**trace**

TM 17 SW 43 1180 7436 East of Yaxley Manor House, Yaxley Block E [1]

Surface level +49.7 m (+163 ft)
Water struck at approximately +36 m
Shell and auger 152 mm
September 1981

Overburden 13.7 m
Mineral 11.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay, brown	0.4	0.4
Boulder Clay	Pebbly clay, mottled dark yellowish orange and light olive grey, becoming medium dark grey and hard to very hard below 2.9 m, many pebbles of rounded chalk with mudstone, grey quartzite and rounded to subangular flint	11.4	11.8
	Clay, very sandy and silty, light olive grey, soft, many fine pebbles of rounded to subrounded chalk	1.1	12.9
	Clay, sandy and silty, olive grey, soft to firm, coarse chalk and quartzite sand with some sub-vertical fissures of brown silty clay		
Kesgrave Sands and Gravels	**a** 'Very clayey' pebbly sand Gravel: coarse and fine, mostly rounded quartz and quartzite Sand: fine with medium and coarse rounded quartz, brown	1.3	15.0
Crag	**b** 'Very clayey' sand, less fines below 20.0 m Sand: fine with medium, rounded quartz with some glauconite and mica, brown becoming greenish grey below 22.7 m	10.0+	25.0

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 mm
a	20	62	18	13.7-15.0	20	41	14	7	7	11	0
b	22	78	0	15.0-16.0	36	45	18	1	0	0	0
				16.0-17.0	26	41	33	0	0	0	0
				17.0-18.0	45	36	19	0	0	0	0
				18.0-19.0	26	46	28	0	0	0	0
				19.0-20.0	27	65	8	0	0	0	0
				20.0-21.0	16	72	11	1	0	0	0
				21.0-22.0	17	65	17	1	0	0	0
				22.0-22.7	18	61	20	1	0	0	0
				22.7-23.7	10	55	34	1	0	0	0
				23.7-25.0	6	58	35	1	0	0	0
				Mean	**22**	**54**	**23**	**1**	**0**	**0**	**0**
a+b	**22**	**76**	**2**	**Mean**	**22**	**53**	**22**	**1**	**1**	**1**	**0**

TM 17 SW 44 1357 7403 South West of Victoria Windmill, Eye Block E [1]

Surface level +39.8 m (+131 ft)
Water struck at +30.3 m
Shell and auger 152 mm
October 1981

Overburden 9.5 m
Mineral 15.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	1.3	1.3
Boulder Clay	Clay, sandy and silty, mottled brown, firm to hard, chalk pebbles with flint and quartzite below 2.4 m	1.7	3.0
Glacial Silt	Silt, sandy, brown	1.9	4.9
Boulder Clay	Pebbly clay, brownish grey becoming dark grey, hard to very hard, many pebbles of rounded chalk with subangular flint and some rounded mudstone	4.6	9.5
Kesgrave Sands and Gravels	**a** Sandy gravel Gravel: fine with coarse, angular to subrounded flint with some rounded flint, quartz and quartzite Sand: medium and coarse with fine subrounded to rounded quartz and quartzite with some subangular to subrounded flint	3.1	12.6
Crag	**b** Sand Sand: medium and fine, rounded quartz, iron-stained, some glauconite and a trace of angular to subangular flint, dusky yellow green becoming yellowish green below 18.6 m	12.4+	25.0

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 mm
a	1	60	39	9.5-10.5	1	6	41	14	28	10	0
				10.5-11.5	2	4	38	20	29	7	0
				11.5-12.6	1	3	35	19	31	11	0
				Mean	**1**	**4**	**39**	**17**	**29**	**10**	**0**
b	2	98	0	12.6-14.6	3	35	60	2	0	0	0
				14.6-16.6	1	30	68	1	0	0	0
				16.6-18.6	2	36	62	0	0	0	0
				18.6-20.6	2	59	39	0	0	0	0
				20.6-22.6	2	56	42	0	0	0	0
				22.6-25.0	2	50	48	0	0	0	0
				Mean	**2**	**45**	**52**	**1**	**trace**	**0**	**0**
a+b	**2**	**90**	**8**	**Mean**	**2**	**36**	**50**	**4**	**6**	**2**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	9.5-10.5	67	9	20	4	0	0
	10.5-11.5	64	13	18	3	0	2
	11.5-12.6	57	13	21	8	0	trace
a	**Mean**	**61**	**12**	**20**	**6**	**0**	**1**

TM 17 SW 45 **1474 7474** **Langton Green, Eye** **Block E[1]**

Surface level +37.3 m (+122 ft)
Water not struck
Shell and auger 152 mm
October 1981

Waste 19.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.9	0.9
Boulder Clay	Pebbly clay, silty, yellowish brown, soft, pebbles of rounded chalk with quartzite and a trace of subangular flint		
	Pebbly clay, silty and sandy, pale yellowish brown, soft to firm, chalk and flint pebbles; thin layers of orange silt	1.8	7.4
	Pebbly clay, silty and sandy, light olive grey, firm, many pebbles of chalk and subangular to subrounded flint	3.8	11.2
	Clay, very silty with some fine sand, dusky yellowish brown, soft, some pebbles of chalk, flint and rounded quartzite	7.8+	19.0

TM 17 SW 46 **1075 7325** **North of Chandos Farm, Thornham Parva** **Block E[2]**

Surface level +46.4 m (+152 ft)
Water not struck
Shell and auger 152 mm
September 1981

Waste 18.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, orange brown	0.2	0.2
Boulder Clay	Pebbly clay, sandy to silty, mottled strong yellowish orange and light grey becoming olive grey below 2.5 m, hard to very hard, many rounded to subrounded chalk pebbles with some angular flint and subrounded to rounded quartzite, quartz and mudstone	17.8+	18.0

TM 17 SW 47 **1260 7397** **North of the Hall, Yaxley** **Block E[1]**

Surface level +37.0 m (+121 ft)
Water struck at +30.0 m
Shell and auger 152 mm
September 1981

Overburden 7.0 m
Mineral 18.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark orange brown	0.3	0.3
Boulder Clay	Clay, silty and sandy, mottled yellowish brown and pale yellowish orange, hard to very hard; many pebbles of rounded chalk with some angular to subrounded flint with chalk and flint sand	2.8	3.1
	Clay, silty and sandy with some sand layers, moderate yellowish brown becoming dark yellowish brown below 4.5 m, firm to hard, some chalk and flint sand with pebbles of angular flint and rounded quartzite	3.9	7.0
Kesgrave Sands and Gravels	**a** Pebbly sand Gravel: fine with coarse, angular to subrounded flint with rounded opaque quartz, brown quartzite and black and brown flint Sand: medium with fine and coarse, subrounded to rounded quartz with some flint, yellowish brown	5.0	12.0
Crag	**b** 'Very clayey' sand, most fines below 15.0 m Sand: fine and medium with some coarse, rounded quartz with some glauconite below 15.0 m, dusky yellow green	13.0+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	3	76	21	7.0-8.0	8	17	38	18	19	0	0
				8.0-9.0	1	10	40	19	22	8	0
				9.0-10.0	1	19	54	9	14	3	0
				10.0-11.0	2	20	33	15	25	5	0
				11.0-12.0	4	26	54	6	7	3	0
				Mean	**3**	**19**	**44**	**13**	**17**	**4**	**0**
b	20	79	1	12.0-13.0	1	23	73	2	1	0	0
				13.0-14.0	3	44	52	1	0	0	0
				14.0-15.0	5	72	20	3	0	0	0
				15.0-16.0	13	61	23	2	1	0	0
				16.0-17.0	32	37	28	2	1	0	0
				17.0-18.0	12	28	55	3	2	0	0
				18.0-20.0	18	46	33	2	1	0	0
				20.0-22.0	27	49	22	1	1	0	0
				22.0-24.0	37	37	23	3	0	0	0
				24.0-25.0	32	19	38	10	1	0	0
				Mean	**20**	**42**	**34**	**3**	1	**0**	**0**
a+b	**15**	**79**	**6**	**Mean**	**15**	**36**	**37**	**6**	**5**	1	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others*
a	7.0-8.0	79	0	17	4	0	0
	8.0-9.0	57	8	28	6	0	1
	9.0-10.0	66	8	16	4	0	5
	10.0-11.0	45	11	25	18	0	1
a	**Mean**	**61**	**7**	**22**	**8**	**0**	**2**

*soft glauconitic sandstones

TM 17 SW 48 1350 7331 North of The Laurels, Eye **Block E²**

Surface level +36.7 m (+120 ft)
Water struck at +26.1 m
Shell and auger 152 mm
October 1981

Overburden 10.6 m
Mineral 14.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown	0.2	0.2
Boulder Clay	Clay, sandy, moderate yellowish brown with patches of light grey below 1.9 m, firm, some pebbles of angular flint and quartzite with rounded chalk	3.3	3.5
	Pebbly clay, dark yellowish brown becoming dusky yellowish brown, firm to hard, coarse sand and some pebbles of chalk, subrounded green siltstone and rounded mudstone	3.0	6.5
	Pebbly clay, light olive grey, firm, abundant fine chalk pebbles	4.1	10.6
Kesgrave Sands and Gravels	**a** Sandy gravel Gravel: fine with coarse, angular to subrounded flint with rounded quartz, quartzite, black flint and a trace of mudstone Sand: medium with coarse and fine, rounded quartz with quartzite and some subangular to subrounded flint	8.8	19.4
Crag	**b** Sand, Sand: fine with medium, rounded opaque and iron-stained quartz with some glauconite and worn shell fragments, greenish grey	5.6+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	3	66	31	10.6-11.6	13	9	35	18	22	3	0
				11.6-12.6	2	4	40	20	26	8	0
				12.6-13.6	3	2	31	19	31	14	0
				13.6-14.6	1	2	24	14	31	28	0
				14.6-15.6	3	13	61	13	7	3	0
				15.6-16.6	0	10	40	24	22	4	0
				16.6-17.6	2	5	55	17	16	5	0
				17.6-19.4	2	19	40	15	17	7	0
				Mean	**3**	**9**	**40**	**17**	**22**	**9**	**0**
b	2	98	0	19.4-21.5	2	79	16	3	0	0	0
				21.5-23.5	2	77	20	1	0	0	0
				23.5-25.0	2	72	25	1	0	0	0
				Mean	**2**	**76**	**20**	**2**	**trace**	**0**	**0**
a+b	**3**	**79**	**18**	**Mean**	**3**	**35**	**33**	**11**	**13**	**5**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	10.6-11.6	70	9	17	3	0	1
	12.6-13.6	67	6	16	11	0	0
	14.6-15.6	51	12	24	13	0	0
	15.6-16.6	67	5	20	8	0	0
	16.6-17.6	59	0	27	14	0	0
	17.6-19.4	58	0	31	11	0	0
a	**Mean**	**63**	**5**	**22**	**10**	**0**	**trace**

TM 17 SW 49 **1429 7314** **Moor Hall, Eye** **Block E²**

Surface level +32.9 m (+108 ft)
Water struck at +20.4 m
Shell and auger 152 mm
October 1981

Overburden 0.7 m
Mineral 6.3 m
Waste 7.5 m
Mineral 4.9 m
Bedrock 6.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy to clayey, pebbles of angular flint with some quartzite	0.7	0.7
Glacial Sand and Gravel	**a** Gravel, sandy to 2.7 m Gravel: fine with coarse, angular to subangular flint with some rounded quartz and quartzite Sand: medium, fine and coarse, rounded quartz quartzite with some subangular to subrounded flint	6.3	7.0
Boulder Clay	Pebbly clay, silty, light olive grey, firm, abundant chalk sand and fine pebbles of rounded chalk with several coarse subrounded black flint pebbles	3.5	10.5
	Clay, silty and sandy, dusky yellowish brown, firm, some chalk sand with a trace of fine chalk and coarse flint pebbles	2.0	12.5
Glacial Silt	Silt, very sandy, olive grey, soft, a trace of rounded mudstone fragements	2.0	14.5
?Glacial Sand and Gravel	**b** Sandy gravel, more sandy above 17.5 m Gravel: fine and coarse, subangular to rounded flint with rounded quartz and quartzite and some rounded flint Sand: medium with coarse and fine, subrounded to rounded quartz and quartzite with subangular to subrounded flint	4.9	19.4
Upper Chalk	Chalk, brownish white	6.1+	25.5

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 mm
a	3	42	55	0.7-1.7	5	27	26	13	22	7	0
				1.7-2.7	6	29	23	12	24	6	0
				2.7-3.7	3	17	9	11	43	17	0
				3.7-4.7	1	8	17	17	41	16	0
				4.7-5.7	2	2	10	16	51	19	0
				5.7-7.0	2	3	9	9	49	28	0
				Mean	**3**	**14**	**15**	**13**	**39**	**16**	**0**
b	2	73	25	14.5-15.5	2	9	60	14	15	0	0
				15.5-16.5	2	7	60	15	16	0	0
				16.5-17.5	1	4	63	14	18	0	0
				17.5-18.5	1	5	39	14	25	16	0
				18.5-19.4	3	5	42	14	23	13	0
				Mean	**2**	**6**	**53**	**14**	**19**	**16**	**0**
a+b	**2**	**57**	**41**	**Mean**	**2**	**10**	**34**	**13**	**30**	**11**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.7-1.7	93	0	2	5	0	0
	1.7-2.7	96	0	2	2	0	0
	2.7-3.7	84	trace	9	7	0	0
	3.7-4.7	90	5	2	3	0	0
	4.7-5.7	92	0	3	5	0	0
	5.7-7.0	93	0	1	6	0	trace
	Mean	**91**	**1**	**3**	**5**	**0**	**trace**
b	14.5-15.5	79	0	14	7	0	0
	15.5-16.5	82	0	14	4	0	0
	16.5-17.5	71	7	10	12	0	0
	17.5-18.5	57	14	25	4	trace	0
	18.5-19.4	60	10	22	7	trace	1
	Mean	**64**	**9**	**21**	**6**	**trace**	**trace**

TM 17 SW 50 **1475 7338** **King's Bridge, Eye** **Block C**

Surface level +26.4 m (+87 ft)
Water struck at +23.4 m
Shell and auger 152 mm
October 1981

Overburden 4.4 m
Mineral 1.6 m
Waste 5.5 m
Mineral 3.6 m
Waste 3.4 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, orange brown	0.3	0.3
Alluvium	Clay, silty, mottled moderate yellowish brown and dark brown, soft to firm, wood fragments and gastropod debris below 1.3 m	1.2	1.5
Peat	Peat, clayey, brownish black, soft, wood and shell debris, silt layer with shell fragments from 2.5 m to 3.0 m	1.8	3.3
Silt	Silt, sandy, olive black, a trace of shell debris	1.1	4.4
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: coarse and fine, mostly angular flint Sand: fine and medium, rounded quartz and subangular flint	1.6	6.0
Boulder Clay	Pebbly clay, olive grey, firm, many pebbles of subrounded chalk with subangular flint and siltstone	5.5	11.5
Glacial Sand and Gravel	**b** Sandy gravel Gravel: fine with coarse, angular flint with rounded quartz and quartzite and some subrounded chalk Sand: medium with coarse and fine, rounded quartz with subangular flint	3.6	15.1
Boulder Clay	Pebbly clay, olive grey, firm, pebbles of chalk, flint and and quartz	3.4	18.5
Upper Chalk	Chalk, yellowish white	2.0+	20.5

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 mm
a	13	61	26	4.4-6.0	13	34	24	3	11	15	0
b	3	62	35	11.5-12.5	6	11	33	18	22	10	0
				12.5-13.5	3	15	27	15	26	14	0
				13.5-15.1	2	8	36	21	31	2	0
				Mean	**3**	**11**	**32**	**19**	**27**	**8**	**0**
a+b	**6**	**62**	**32**	**Mean**	**6**	**18**	**30**	**14**	**22**	**10**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	4.4-6.0	74	0	7	8	4	7
b	11.5-12.5	62	4	18	13	2	1
	12.5-13.5	68	8	18	4	1	trace
	Mean	**65**	**6**	**18**	**9**	**2**	**trace**

TM 17 SW 51 **1209 7243** **Major Farm, Eye** **Block E²**

Surface level +52.9 m (+174 ft)
Water not struck
Shell and auger 152 mm
October 1981

Waste 19.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, brown	0.3	0.3
Boulder Clay	Pebbly clay, silty, mottled yellowish bronw and light brown, becoming olive grey below 5.6 m, firm becoming very hard, many pebbles of chalk with flint and mudstone and some chalk cobbles	12.8	13.1
	Pebbly clay, dusky yellowish brown, hard, abundant chalk sand with some fine pebbles of angular flint, subrounded siltstone and opaque quartz	5.9+	19.0

TM 17 SW 52 **1081 7187** **East of Thornham Hall, Thornham Magna** **Block E²**

Surface level +53.6 m (+176 ft)
Water not struck
Shell and auger 152 mm
September 1981

Waste 20.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, orange brown	0.3	0.3
Boulder Clay	Clay slightly sandy, mottled yellowish orange and light olive grey, becoming olive black below 4.5 m, firm to hard, pebbles of angular flint and rounded chalk with some mudstone and abundant chalk sand	7.1	7.4
	Pebbly clay, strong brown with patches of yellowish brown, hard, many pebbles of chalk with angular flint and a trace of subrounded reddish brown and grey quartzite, with layer of chalk gravel from 12.3 m to 12.5 m	9.3	16.7
	Pebbly clay, very sandy and silty, light olive grey, soft, pebbles of chalk and a trace of quartzite	1.4	18.1
	Clay, sandy and silty, dark yellowish brown, hard, with a trace of chalk and flint sand, some pebbles of chalk, quartz and quartzite	2.3+	20.4

TM 17 SW 53 **1207 7130** **Cousin's Barn, Stoke Ash** **Block E²**

Surface level +47.0 m (+154 ft)
Water not struck
Shell and auger 152 mm
September 1981

Waste 19.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	1.8	1.8
Boulder Clay	Pebbly clay, olive black, hard to very hard, many pebbles of rounded chalk and some mudstone, strong yellowish orange below 5.8 m with many pebbles of reddened chalk and some angular flints	6.3	8.1
	Clay, silty, light olive grey, firm, much chalk sand and angular flint pebbles, becoming soft below 12.2 m	8.7	16.8
	Clay, sandy, dusky yellowish brown, firm, a trace of chalk and flint sand with a few flint and quartzite pebbles	2.7+	19.5

TM 17 SW 54 **1295 7199** **Allan's Farm, Braiseworth** **Block E²**

Surface level +49.0 m (+161 ft)
Water not struck
Shell and auger 152 mm
August 1981

Waste 22.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.4	0.4
Glacial Silt	Silt, sandy, dark yellowish orange with traces of light grey clay, hard, some flint and chalk sand below 1.0 m	1.1	1.5
Boulder Clay	Pebbly clay, medium grey becoming olive grey, firm becoming hard, many fine pebbles of chalk and flint with some mudstone and quartzite and much flint and chalk sand	9.6	11.1
Glacial Sand and Gravel	Gravel, Gravel: fine and coarse, chalk and flint with some quartz Sand: medium and coarse with fine, quartz with some flint, greyish brown	2.0	13.1
Boulder Clay	Clay, silty, mottled yellowish brown and yellowish orange becoming olive grey below 14.5 m, firm, some pebbles of chalk and flint	9.4+	22.5

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
3	38	59	11.1-13.1	3	4	20	14	38	21	0

TM 17 SW 55 **1378 7135** **Church Farm, Braiseworth** **Block E²**

Surface level +36.8 m (+121 ft)
Water struck at +33.8 m
Shell and auger 203 m and 152 mm
September 1981

Overburden 1.0 m
Mineral 2.0 m
Waste 10.1 m
Mineral 3.5 m
Waste 4.4 m
Mineral 4.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy	0.2	0.2
Glacial Silt	Silt, sandy and clayey, moderate brown, with sparse pebbles	0.8	1.0
Glacial Sand and Gravel	a Pebbly sand Gravel: coarse and fine, mostly angular black flint Sand: fine and medium, subangular quartz with some coarse angular flint	2.0	3.0
Glacial Silt	Silt, sandy, light brown, soft, faint lamination	1.0	4.0
Boulder Clay	Pebbly clay, silty, yellowish brown becoming olive grey below 5.6 m and dark yellowish brown below 12.0 m, soft to hard, many fine pebbles of subrounded chalk, some angular flint and rounded black mudstone	9.1	13.1
Glacial Sand and Gravel	b Sandy gravel Gravel: fine with coarse, angular to subrounded flint and subrounded to rounded chalk with some rounded quartzite and quartz Sand: medium with fine and coarse, rounded quartz and subangular flint, yellowish brown	3.5	16.6
Boulder Clay	Pebbly clay, yellowish brown, with abundant chalk and some mudstone and quartzite pebbles	4.4	21.0
Glacial Sand and Gravel	c Sandy gravel Gravel: fine and coarse, angular to subrounded flint with quartz, quartzite and subrounded chalk and limestone Sand: medium with coarse and fine, subrounded quartz with angular flint and some rounded chalk	4.0+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	8	81	11	1.0-2.0	8	47	24	3	7	11	0
				2.0-3.0	8	44	41	2	4	1	0
				Mean	**8**	**46**	**32**	**3**	**5**	**6**	**0**
b	4	61	35	13.1-14.0	5	17	30	15	31	2	0
				14.0-15.0	2	18	30	13	27	10	0
				15.0-16.0	2	18	39	11	26	4	0
				16.0-16.6	7	14	27	15	30	7	0
				Mean	4	**17**	**31**	**13**	**29**	**6**	**0**
c	3	66	31	21-0-22.0	6	12	32	23	25	2	0
				22.0-23.0	5	16	53	8	11	7	0
				23.0-24.0	1	9	45	14	19	12	0
				24.0-25.0	1	8	34	9	19	29	0
				Mean	**3**	**11**	**42**	**13**	**19**	**12**	**0**
a+b+c	**4**	**68**	**28**	**Mean**	**4**	**21**	**36**	**11**	**19**	**9**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	13.1-14.0	37	1	1	6	53	2
	14.0-15.0	47	0	2	5	46	trace
	15.0-16.0	52	0	1	3	40	4
	Mean	**45**	**trace**	**1**	**5**	**47**	**2**
c	22.0-23.0	64	3	6	11	8	8
	24.0-25.0	52	11	9	16	3	9
	Mean	**56**	**8**	**8**	**15**	**4**	**9**

TM 17 SW 56 1034 7045 **North east of Grove Farm, Thornham Magna** **Block C**

Surface level +35.9 m (+118 ft)
Water struck at +26.9 m
Shell and auger 152 mm
September 1981

Overburden 9.0 m
Mineral 16.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey, dark brown	0.3	0.3
Alluvium	Clay, mottled strong brown and strong yellowish orange, soft	0.9	1.2
Silt	Silt, very sandy, light olive grey becoming moderate brown, soft to firm, contains many degraded rootlets and scattered angular iron-stained flint pebbles	1.9	3.1
Laminated Clays	Clay, silty, dark brown, firm to hard, laminae of organic debris and shell fragments	2.1	5.2
Silt	Silt, very clayey, brown with black patches, becoming well laminated near base with layers of light brown fine sand	3.8	9.0
Kesgrave Sands and Gravels	**a** Sandy gravel, gravel concentrated between 10.0 m and 11.0 m Gravel: coarse with fine, angular to subrounded flint with rounded quartzite, quartz and some rounded flint with a trace of chalk Sand: fine with medium and some coarse, subrounded to rounded quartz with subangular to subrounded flint and traces of shell fragements	3.0	12.0
Crag	**b** 'Clayey' sand, more clayey above 17.0 m Sand: fine and medium with coarse, rounded quartz with many shell fragments, light olive brown	13.2+	25.2

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	7	67	26	9.0-10.0	13	47	29	3	1	7	0
				10.0-11.0	5	18	11	3	16	44	3
				11.0-12.0	5	79	8	1	1	6	0
				Mean	**7**	**49**	**16**	**2**	**6**	**19**	**1**
b	11	88	1	12.0-13.0	35	35	22	8	0	0	0
				13.0-15.0	16	29	49	6	0	0	0
				15.0-17.0	11	37	47	4	1	0	0
				17.0-19.0	5	46	44	5	0	0	0
				19.0-21.0	6	50	34	9	1	0	0
				21.0-23.0	6	47	39	7	1	0	0
				23.0-25.2	8	48	37	6	1	0	0
				Mean	**11**	**42**	**40**	**6**	**1**	**0**	**0**
a+b	**10**	**84**	**6**	**Mean**	**10**	**43**	**36**	**5**	**2**	**4**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	10.0-11.0	55	7	13	20	1	4

TM 17 SW 57 1163 7061 **Stoke Hall, Stoke Ash** **Block C**

Surface level +34.7 m (+114 ft)
Water struck at +29.2 m
Shell and auger 152 mm
September 1981

Overburden 5.5 m
Mineral 3.2 m
Waste 16.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil	0.1	0.1
Alluvium	Clay, sandy and silty, dark yellowish brown with patches of moderate brown, firm	1.4	1.5
River Terrace Deposits	**a** Sandy gravel Gravel: coarse and fine, mostly angular to subangular flint with some rounded quartz and quartzite Sand: medium with coarse and fine, rounded to subrounded quartz and flint	0.9	2.4
Boulder Clay	Pebbly clay, olive grey, firm, many fine pebbles of subrounded chalk and some subangular to subrounded flint	3.1	5.5
Glacial Sand and Gravel	**b** Gravel Gravel: fine with coarse, rounded to subrounded chalk with angular to subangular flint and some rounded quartzite Sand: coarse and medium with fine, rounded quartz with chalk and some subangular to subrounded flint	2.2	7.7
	c 'Clayey' sand Sand: fine with some medium rounded quartz with some chalk and flint, dark yellowish brown	1.0	8.7
Glacial Silt	**d** Silt, sandy, olive grey, very soft, some fine chalk pebbles and chalk sand	16.1+	24.8

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	3	49	48	1.5-2.4	3	9	24	16	23	25	0
b	4	45	51	5.5-6.5	3	5	18	20	46	8	0
				6.5-7.7	5	10	19	17	37	12	0
				Mean	**4**	**8**	**18**	**19**	**41**	**10**	**0**
c	19	77	4	7.7-8.7	19	53	21	3	4	0	0
d	55	44	1	8.7-10.5	55	38	5	1	1	0	0
b+c	**8**	**55**	**37**	**Mean**	**8**	**22**	**19**	**14**	**30**	**7**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.5-2.4	91	1	3	3	1	1
b	5.5-6.5	34	0	1	4	57	4
	6.5-7.7	24	0	trace	6	62	8
	Mean	**29**	**0**	**1**	**5**	**59**	**6**

TM 17 SW 58 **1294 7042** **North of east of Hill Farm, Stoke Ash** **Block E²**

Surface level +35.0 m (+115 ft)
Water struck at +23.5 m
Shell and auger 203 mm and 152 mm
September 1981

Overburden 4.0 m
Mineral 2.0 m
Waste 0.5 m
Mineral 18.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Soil	Soil, clay, very silty, sandy and pebbly, dark yellowish brown, firm, many angular to subangular flint pebbles	1.2	1.2
Glacial Silt	Silt, greyish orange, soft	2.8	4.0
Glacial Sand and Gravel	a Sandy gravel, some cobbles Gravel: fine and coarse, angular to subrounded flint with rounded opaque quartz and grey quartzite, subrounded to rounded chalk and some rounded flint Sand: medium with coarse and fine, rounded to subrounded quartz and flint	2.0	6.0
Glacial Silt	Silt, very sandy, olive grey, soft, with a trace of flint sand	0.5	6.5
Glacial Sand and Gravel	b 'Pebbly' sand Gravel: fine with coarse, angular to subrounded flint with rounded quartz and some quartzite, flint and chalk Sand: medium with fine and some coarse, rounded quartz with some flint and a trace of chalk sand, olive grey	5.0	11.5
	c Sandy gravel Gravel: fine with coarse, angular to subrounded flint with rounded quartz, quartzite and flint, and a trace of rounded chalk above 13.5 m Sand: medium with coarse and fine, rounded quartz, with some quartzite and flint and traces of shell fragments	4.9	16.4
Crag	d Sand, with some pebbles above 21.5 m Sand: medium with fine, rounded quartz, quartzite and glauconite with some flint, dusky yellow green	8.6+	25.0

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 mm
a	5	53	42	4.0-5.0	6	10	38	7	18	17	4
				5.0-6.0	4	6	29	17	25	19	0
				Mean	**5**	**8**	**33**	**12**	**22**	**18**	**2**
b	4	89	7	6.5-7.5	6	34	46	6	4	4	0
				7.5-8.5	3	25	71	0	1	0	0
				8.5-9.5	5	17	65	4	7	2	0
				9.5-10.5	2	13	73	3	8	1	0
				10.5-11.5	1	11	78	4	5	1	0
				Mean	**4**	**20**	**66**	**3**	**5**	**2**	**0**
c	1	62	37	11.5-12.5	1	6	44	17	22	5	5
				12.5-13.5	0	2	20	11	44	23	0
				13.5-14.5	1	21	44	12	18	4	0
				14.5-15.5	3	10	45	18	17	7	0
				15.5-16.4	1	7	34	18	28	12	0
				Mean	**1**	**9**	**38**	**15**	**26**	**10**	**1**
d	2	96	2	16.4-17.5	4	20	71	3	2	0	0
				17.5-19.5	2	22	70	3	1	2	0
				19.5-21.5	1	22	72	2	2	1	0
				21.5-23.5	3	25	71	1	0	0	0
				23.5-25.0	0	25	74	1	0	0	0
				Mean	**2**	**23**	**71**	**2**	**1**	**1**	**0**
a+b+ c+d	**2**	**83**	**15**	**Mean**	**2**	**17**	**59**	**7**	**10**	**5**	**trace**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	4.0-5.0	45	6	13	19	10	6
	5.0-6.0	53	3	14	11	7	12
	Mean	**49**	**4**	**14**	**15**	**9**	**9**
b	8.5-9.5	63	0	29	3	2	3
	9.5-11.5	70	3	18	2	0	7
	Mean	**67**	**2**	**23**	**3**	**trace**	**5**
c	11.5-12.5	53	6	31	5	3	2
	12.5-13.5	53	18	20	6	1	2
	13.5-14.5	63	8	13	10	0	6
	14.5-15.5	56	5	33	6	0	0
	15.5-16.4	63	10	18	7	0	2
	Mean	**58**	**11**	**21**	**7**	**trace**	**3**

TM 17 SW 59 **1386 7055** **Catbridge, Thorndon** **Block C**

Surface level +30.6 m (+100 ft)
Water struck at +26.6 m
Shell and auger 152 mm
October 1981

Overburden 4.0 m
Mineral 9.6 m
Bedrock 3.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, dark brown	0.4	0.4
Peat	Peat, very clayey to silty, dark brown, soft, some wood fragments and a trace of flint pebbles	1.0	1.4
Silt	Silt, clayey, medium bluish grey, very soft, some fine pebbles of flint and pieces of degraded wood	2.6	4.0
Crag	Sand Sand: medium with fine and some coarse, rounded quartz with many shell fragments and some glauconite, light olive brown	2.6	13.6
Upper chalk	Chalk, soft	3.9+	17.5

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
				Fines	Sand			Gravel		
Fines	Sand	Gravel		-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
4	93	3	4.0-6.0	3	40	56	0	1	0	0
			6.0-8.0	3	31	57	4	3	2	0
			8.0-10.0	6	32	51	9	2	0	0
			10.0-12.0	4	35	51	6	3	1	0
			12.0-13.6	3	37	54	5	1	0	0
			Mean	**4**	**35**	**53**	**5**	**2**	**1**	**0**

TM 17 SE 26 **1559 7443** **Waterloo Plantation, Eye** **Block C**

Surface level +27.0 m (+89 ft)
Water struck at +13.0 m
Shell and auger 152 mm
October 1981

Overburden 0.5 m
Mineral 2.5 m
Waste 22.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy and pebbly, dark brown	0.5	0.5
River Terrace Deposits	**a** Pebbly sand Gravel: fine with coarse, angular flint with some rounded quartzite and quartz Sand: fine and medium, subrounded quartz	2.5	3.0
Silt	Silt, sandy, dusky yellowish brown, small wood fragments	1.2	4.2
Peat	Peat, silty, brownish black, wood and shell fragments	1.9	6.1
Silt	Silt, greyish yellowish brown, firm, shell fragments near top	10.4	16.5
Glacial Sand and Gravel	**b** Pebbly sand, less pebbly below 17.6 m Gravel: fine with some coarse, angular flint with rounded quartzite, chalk, some sedimentary rock pebbles and quartz Sand: medium with fine and some coarse, rounded quartz with chalk and flint	4.1	20.6
Glacial Silt	Silt, olive grey, soft to firm, some layers of medium sand	4.4+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
					Fines	Sand			Gravel		
	Fines	Sand	Gravel		-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	7	73	20	0.5-1.6	10	26	29	6	20	9	0
				1.6-3.0	6	37	37	6	12	2	0
				Mean	**7**	**33**	**34**	**6**	**15**	**5**	**0**
b	9	76	15	16.5-17.6	5	18	26	14	29	8	0
				17.6-18.6	2	23	68	3	4	0	0
				18.6-20.6	14	23	49	5	6	3	0
				Mean	**9**	**21**	**48**	**7**	**12**	**3**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	0.5-1.6	95	0	0	5	0	0
	1.6-3.0	83	0	3	9	0	5
	Mean	**92**	0	**1**	**6**	**0**	**1**
b	16.5-17.6	80	0	2	8	6	4

TM 17 SE 27 **1674 7420** **Burnthouse Farm, Eye** **Block F [1]**

Surface level +47.1 m (+155 ft)
Water struck at +27.9 m
Shell and auger 152 mm
November 1981

Overburden 13.0 m
Mineral 12.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay, dark brown	0.3	0.3
Boulder Clay	Pebbly clay, mottled light olive grey and moderate yellowish brown, becoming yellowish brown, soft to firm below 1.5 m, some pebbles of chalk, flint, and some rounded quartz	8.9	9.2
Glacial Sand and Gravel	**a** 'Very clayey' pebbly sand Gravel: fine, angular flint and subangular to rounded chalk Sand: fine with medium, subangular quartz with rounded chalk, very pale orange	0.4	9.6
Boulder Clay	Pebbly clay, sandy, yellowish grey, soft, many fine chalk pebbles	2.0	11.6
	Pebbly clay, sandy, brownish grey to olive grey, firm, with some pebbles of rounded quartz, quartzite and subangular flint with a trace of chalk	1.4	13.0
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: fine and coarse, subangular to subrounded flint, rounded quartz and quartzite with well rounded flint Sand: medium and coarse with fine, rounded quartz with some subangular flint, greyish yellow	3.8	16.8
Crag	**c** Sand, with silty clay laminae above 18.0 m Sand: fine with medium, well rounded quartz, micaceous, dark yellowish orange, becoming dusky yellow below 20.0 m	8.2+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	20	75	5	9.2-9.6	20	42	30	3	5	0	0
b	5	57	38	13.0-14.0	10	8	37	18	16	11	0
				14.0-15.0	2	4	33	25	23	13	0
				15.0-16.0	2	5	30	19	24	20	0
				16.0-16.8	6	11	20	17	22	24	0
				Mean	**5**	**7**	**30**	**20**	**21**	**17**	**0**
c	9	91	0	16.8-18.0	12	78	9	1	0	0	0
				18.0-20.0	14	65	20	1	0	0	0
				20.0-22.0	4	49	47	0	0	0	0
				22.0-24.0	8	66	25	1	0	0	0
				24.0-25.0	5	79	16	0	0	0	0
				Mean	**9**	**65**	**26**	**trace**	**0**	**0**	**0**
b+c	7	81	12	**Mean**	**7**	**47**	**27**	**7**	**7**	**5**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	13.0-14.0	44	10	22	24	0	0
	14.0-15.0	25	23	30	16	0	6
	15.0-16.0	33	14	24	23	0	5
	16.0-16.8	26	14	31	27	0	2
	Mean	**29**	**16**	**30**	**22**	**0**	**3**

TM 17 SE 28 **1825 7475** **Low Barn, Denham** **Block F [1]**

Surface level +38.5 m (+126 ft)
Water struck at +28.1 m
Shell and auger 152 mm
September 1981

Overburden 5.2 m
Mineral 20.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey sand	0.3	0.3
Boulder Clay	Pebbly clay, sandy, dark yellowish orange, some chalk and angular flint pebbles, becoming very sandy to silty below 2.1 m	4.9	5.2
Kesgrave Sands and Gravels	**a** 'Clayey' pebbly sand, very clayey from 6.6 m to 6.3 m, moderate orange pink Gravel: fine and coarse, subangular flint and rounded white quartzite and quartz Sand: medium with fine and coarse, subrounded quartz, very pale orange	2.1	7.3
Crag	**b** Sand, laminae of yellowish grey silty clay above 16.4 m Gravel: fine, some iron pan and cemented sandstone fragments Sand: fine with medium, rounded quartz, shell debris below 18.4 m; greyish yellow becoming strong brown below 17.6 m and moderate olive brown to greenish grey below 19.0 m	18.7+	26.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	14	77	9	5.2-6.3	13	16	56	6	5	4	0
				6.3-7.3	15	22	47	7	3	6	0
				Mean	**14**	**19**	**51**	**7**	**4**	**5**	**0**
b	6	93	1	7.3-8.8	18	71	9	1	1	0	0
				8.8-10.4	18	79	3	0	0	0	0
				10.4-12.4	9	63	27	1	0	0	0
				12.4-14.4	4	70	26	0	0	0	0
				14.4-16.4	2	80	18	0	0	0	0
				16.4-18.4	2	60	37	1	0	0	0
				18.4-20.4	3	34	61	1	1	0	0
				20.4-22.4	3	30	66	1	0	0	0
				22.4-24.4	1	37	55	3	4	0	0
				24.4-26.0	2	71	27	0	0	0	0
				Mean	**6**	**58**	**34**	**1**	**1**	**0**	**0**
a+b	7	92	1	**Mean**	**7**	**55**	**36**	**1**	**1**	**trace**	**0**

TM 17 SE 29 **1937 7416** **Standwell House, Denham** **Block F [1]**

Surface level +50.0 m (164 ft)
Water sruck at +27.0
Shell and auger 152 mm
September 1981

Overburden 16.8 m
Mineral 8.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground; clay soil with brick rubble	0.4	0.4
Boulder Clay	Pebbly clay, mottled light grey and moderate yellowish brown, some pebbles of angular flint and subrounded chalk; silty, medium grey with chalk, flint and some mudstone pebbles below 3.5 m	4.4	4.8
Glacial Sand and Gravel	**a** 'Very clayey' gravel Gravel: fine with some coarse, rounded chalk with calcareous siltstone and subangular flint Sand: coarse with medium and some fine, angular quartz with chalk and angular flint	1.1	5.9
Boulder Clay	Pebbly clay, silty, medium grey with angular flint and subrounded chalk pebbles; pinkish grey to pale yellowish brown, sandy with finely disseminated chalk below 9.9 m	6.2	12.1
Glacial Sand and Gravel	**a** 'Very clayey' gravel Gravel: fine with coarse, angular to subangular flint with some chalk Sand: medium with fine and coarse, quartz with flint, pale grey	0.5	12.6
Boulder Clay	Pebbly clay, sandy, pinkish grey, comminuted chalk and angular flint pebbles, becoming brownish grey below 14.0 m	4.2	16.8
Kesgrave Sands and Gravels	**b** 'Clayey' pebbly sand Gravel: fine and coarse, subangular flint with quartzite and quartz and some rounded flint Sand: medium with coarse and fine, quartz, pale to dark yellowish orange	1.9	18.7
Crag	**c** 'Clayey' sand, with laminae of silty clay Sand: fine with medium, rounded quartz, greyish to dusky yellow	6.3+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					−⅛	+⅛ −¼	+¼ −1	+1 −4	+4 −16	+16 −64	+64 mm
a	23	38	39	4.8-5.9	20	3	6	21	44	6	0
				12.1-12.6	31	16	31	9	10	3	0
				Mean	**23**	**7**	**14**	**17**	**34**	**5**	**0**
b	19	63	18	16.8-17.8	18	8	42	11	14	7	0
				17.8-18.7	20	15	39	10	11	5	0
				Mean	**19**	**11**	**41**	**11**	**12**	**6**	**0**
c	17	83	0	18.7-19.7	33	40	26	1	0	0	0
				19.7-20.7	13	41	45	1	0	0	0
				20.7-21.5	9	44	46	1	0	0	0
				21.5-23.0	19	52	28	1	0	0	0
				23.0-25.0	15	63	21	1	0	0	0
				Mean	**17**	**51**	**31**	**1**	**0**	**0**	**0**
b+c	**18**	**78**	**4**	**Mean**	**18**	**42**	**33**	**3**	**3**	**1**	**0**

TM 17 SE 30 **1531 7370** **West of Church Farm, Eye** **Block C**

Surface level +27.3 m (+90 ft)
Water struck at +26.3 m
Shell and auger +152 mm diameter
October 1981

Overburden 4.0 m
Mineral 4.0 m
Waste 0.5 m
Mineral 1.9 m
Bedrock 2.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, reddish brown	0.5	0.5
Peat	Peat, clayey to sandy, brownish grey, soft, with some flint pebbles	3.5	4.0
?River Terrace Deposits	**a** Sand Gravel: fine and coarse, angular flint Sand: fine with medium, rounded quartz with quartzite and some subrounded flint, moderate yellowish brown	1.1	5.1
Glacial Sand and Gravel	**b** Sandy gravel Gravel: fine with coarse, angular to subangular flint with subrounded chalk, and rounded quartz and quartzite Sand: medium with fine and coarse, subrounded to rounded quartz with some subangular to subrounded flint	2.9	8.0
Boulder Clay	Pebbly clay, silty to sandy, greyish yellowish brown, soft, some pebbles of rounded chalk with some rounded quartz and quartzite	0.5	8.5
Glacial Sand and Gravel	**c** Sandy gravel Gravel: fine with coarse, flint with chalk, quartzite and quartz Sand: medium with fine and coarse, quartz with some flint	1.0	9.5
	d Sandy gravel, brown silty clay nodules near base Gravel: fine and coarse, subangular flint with quartzite, quartz and rounded flint Sand: medium with fine and coarse, quartz with some flint	0.9	10.4
Upper Chalk	Chalk, brownish white	2.4+	12.8

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					−⅛	+⅛ −¼	+¼ −1	+1 −4	+4 −16	+16 −64	+64 mm
a	2	97	1	4.0-5.1	2	60	36	1	trace	1	0
b	2	59	39	5.1-6.1	3	17	30	17	29	4	0
				6.1-7.1	2	12	34	15	25	12	0
				7.1-8.0	2	10	26	16	35	11	0
				Mean	**2**	**13**	**30**	**16**	**30**	**9**	**0**
c	2	70	28	8.5-9.5	2	14	42	14	20	8	0
d	7	51	42	9.5-10.4	7	9	34	8	24	18	0
a+b+ c+d	**3**	**66**	**31**	**Mean**	**3**	**21**	**33**	**12**	**22**	**9**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	5.1-6.1	79	0	4	2	12	3
	6.1-7.1	71	3	4	5	13	4
	7.1-8.0	74	3	1	4	11	7
	Mean	**74**	**3**	**3**	**4**	**11**	**5**
c	8.5-9.5	75	1	3	11	7	3
d	9.5-10.4	58	13	10	17	trace	2

TM 17 SE 31 **1591 7323** **The Uplands, Eye** **Block F²**

Surface level +47.4 m (+156 ft)
Water struck at approximately +27.4 m
Shell and auger 152 mm
October 1981

Overburden 10.1 m
Mineral 14.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty, mottled light olive brown and light grey becoming olive grey, many pebbles of chalk with flint and mudstone	3.6	4.0
	Pebbly clay, sandy, greyish yellowish brown, becoming olive grey below 5.7 m, some pebbles of chalk, flint and quartz	2.7	6.7
	Pebbly clay, sandy to silty, light olive grey, soft, some fine chalk pebbles, some sandy laminae	3.4	10.1
Kesgrave Sands and Gravels	a 'Clayey' sandy gravel Gravel: fine with coarse, subangular flint with rounded flint, quartzite and quartz Sand: medium with coarse and fine, subrounded quartz with some flint, greyish orange	1.9	12.0
Crag	b Sand, silty clay laminae from 13.0 m to 21.0 m Sand: fine with medium, rounded quartz, dark yellowish orange becoming dark yellow below 19.0 m and strong yellowish orange below 24.5 m	13.0+	25.0

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 mm
a	11	61	28	10.1-11.1	11	13	36	13	22	5	0
				11.1-12.0	10	12	34	15	19	10	0
				Mean	**11**	**12**	**35**	**14**	**21**	**7**	**0**
b	8	92	0	12.0-13.0	12	82	4	1	1	0	0
				13.0-15.0	8	80	9	2	1	0	0
				15.0-17.0	9	74	15	1	1	0	0
				17.0-19.0	12	65	22	1	0	0	0
				19.0-21.0	11	54	35	0	0	0	0
				21.0-23.0	1	93	6	0	0	0	0
				23.0-25.0	3	92	5	0	0	0	0
				Mean	**8**	**77**	**14**	**1**	**trace**	**0**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	10.1-12.0	39	11	20	30	0	trace

TM 17 SE 32 **1719 7329** **Low Farm, Eye** **Block F²**

Surface level +42.3 m (+139 ft)
Water struck at +31.2 m
Shell and auger 152 mm
October 1981

Overburden 5.7 m
Mineral 19.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay, dark yellowish brown	0.3	0.3
Boulder Clay	Pebbly clay, sandy to silty, moderate yellowish brown to dark yellowish orange, soft, angular flint and rounded chalk pebbles; sandy layers from 2.6 m to 4.5 m, becoming soft, sandy, greyish orange below	5.4	5.7
Kesgrave Sands and Gravels	a 'Clayey' pebbly sand, more pebbly below 8.6 m, very clayey from 7.3 m to 7.8 m Gravel: fine with medium, angular to well rounded flint with quartz and quartzite Sand: medium with fine and some coarse, quartz with flint, greyish orange, becoming greyish orange pink from 7.3 m to 7.8 m	4.3	10.0
Crag	b Sand, silty clay laminae from 11.0 m to 15.0 m Sand: fine with medium, rounded quartz, dusky yellow, becoming dark greenish grey below 22.7 m	15.0+	25.0

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 mm
a	11	80	9	5.7-6.7	12	9	76	2	1	0	0
				6.7-7.8	13	11	71	2	2	1	0
				7.8-8.8	9	12	56	7	10	6	0
				8.8-10.0	11	8	51	14	14	2	0
				Mean	**11**	**10**	**63**	**7**	**7**	**2**	**0**
b	7	93	0	10.0-11.0	13	30	57	0	0	0	0
				11.0-13.0	13	39	47	1	0	0	0
				13.0-15.0	10	61	29	0	0	0	0
				15.0-17.0	1	81	18	0	0	0	0
				17.0-19.0	3	84	13	0	0	0	0
				19.0-21.0	3	67	30	0	0	0	0
				21.0-22.7	5	36	58	1	0	0	0
				22.7-25.0	11	66	22	1	0	0	0
				Mean	**7**	**61**	**32**	**trace**	**trace**	**0**	**0**
a+b	**8**	**90**	**2**	**Mean**	**8**	**49**	**39**	**2**	**2**	**trace**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	7.8-10.0	35	25	18	19	0	3

TM 17 SE 33 1855 7353 East of Denham Hall Farm, Denham **Block F²**

Surface level +35.0 m (+115 ft)
Water struck at +33.5 m
Shell and auger 152 mm
October 1981

Overburden 1.1 m
Mineral 23.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty clay, dark yellowish brown	0.4	0.4
Alluvium	Clay, silty to sandy, mottled light olive grey and moderate yellowish brown	0.7	1.1
?Kesgrave Sands and Gravels	**a** Gravel Gravel: fine and coarse, angular to subangular flint with rounded flint, quartzite and quartz Sand: medium and coarse with fine, subrounded to rounded quartz with angular flint	2.1	3.2
Crag	**b** Sand, silty clay laminae from 13.1 m to 14.1 m and 21.0 m to 22.5 m Sand, fine and medium, rounded quartz; iron pan concretions from 16.1 m to 21.0 m, dusky yellow becoming dark yellowish orange below 14.0 m, greenish grey below 21.0 m and moderate brown below 24.2 m	21.8+	25.0

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 mm
a	1	31	68	1.1-2.1	2	4	17	10	36	31	0
				2.1-3.2	1	4	16	12	30	37	0
				Mean	**1**	**4**	**16**	**11**	**33**	**35**	**0**
b	6	93	1	3.2-4.2	9	55	27	5	1	3	0
				4.2-5.2	7	51	41	1	0	0	0
				5.2-7.2	5	40	55	0	0	0	0
				7.2-9.2	3	32	64	1	0	0	0
				9.2-11.2	4	60	36	0	0	0	0
				11.2-13.2	5	50	44	1	0	0	0
				13.2-14.1	9	35	55	1	0	0	0
				14.1-16.1	5	35	57	2	1	0	0
				16.1-18.1	7	40	44	5	4	0	0
				18.1-20.1	4	37	53	4	2	0	0
				20.1-21.0	8	38	50	3	1	0	0
				21.0-22.5	13	55	30	2	0	0	0
				22.5-24.2	7	73	18	1	1	0	0
				24.2-25.0	4	39	53	3	1	0	0
				Mean	**6**	**46**	**45**	**2**	**1**	**trace**	**0**
a+b	6	87	7	**Mean**	**6**	**42**	**42**	**3**	**4**	**3**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	1.1-2.1	67	7	7	16	0	3
	2.1-3.2	58	12	11	17	0	2
	Mean	**60**	**11**	**10**	**17**	**0**	**2**

TM 17 SE 34 1507 7232 East of Park Farm, Eye **Block F²**

Surface level +34.3 m (+113 ft)
Water struck at +28.8 m
Shell and auger 152 mm
October 1981

Overburden 2.5 m
Mineral 22.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, light brown	0.3	0.3
Boulder Clay	Pebbly clay, silty to sandy, dark yellowish brown, fine pebbles of angular flint and rounded chalk	2.2	2.5
Glacial Sand and Gravel	**a** 'Clayey' sand, some silty layers, fine angular flint pebbles above 3.5 m Sand: fine with medium, subrounded to rounded quartz	11.2	13.7
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: coarse with fine, subangular flint with rounded quartz, quartzite and flint Sand: fine and medium with some coarse, rounded quartz with some subangular to subrounded flint	3.8	17.5
Crag	**c** Pebbly sand Gravel: iron pan fragments above 19.5 m, some angular flint from 21.5 m to 23.5 m Sand: fine and medium, rounded quartz, some rounded shell fragments	7.5+	25.0

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 mm
a	11	88	1	2.5-3.5	14	41	33	3	7	2	0
				3.5-5.5	3	43	53	0	1	0	0
				5.5-7.5	2	33	65	0	0	0	0
				7.5-9.5	33	31	36	0	0	0	0
				9.5-11.5	13	68	19	0	0	0	0
				11.5-13.7	2	87	11	0	0	0	0
				Mean	**11**	**52**	**36**	**trace**	**1**	**trace**	**0**
b	5	56	39	13.7-15.7	5	30	25	5	13	22	0
				15.7-17.5	5	21	26	6	14	28	0
				Mean	**5**	**26**	**25**	**5**	**14**	**25**	**0**
c	6	89	5	17.5-19.5	4	47	44	3	2	0	0
				19.5-21.5	7	42	46	4	1	0	0
				21.5-23.5	7	34	37	7	12	3	0
				23.5-25.0	7	45	42	5	0	1	0
				Mean	**6**	**42**	**42**	**5**	**4**	**1**	**0**
a+b+c	8	83	9	Mean	8	44	36	3	4	5	0

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	13.7-17.5	41	13	11	30	0	5

TM 17 SE 35 **1827 7227** **Denham Street, Denham** **Block F²**

Surface level +51.9 m (+170 ft)
Water not struck
Shell and auger 152 mm
October 1981

Overburden 17.8 m
Mineral 7.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty to sandy, mottled light olive grey and moderate yellowish brown, becoming olive grey at 3.7 m, pebbles of angular flint, rounded chalk and mudstone; dark grey silt layer from 11.9 m to 12.4 m	13.6	14.0
	Pebbly clay, sandy, pale olive grey, soft, many fine pebbles of rounded chalk with some angular flint	2.4	16.4
	Pebbly clay, sandy, brownish grey to olive grey, some fine pebbles of chalk, angular flint and rounded quartz	0.8	17.2
?Glacial Silt	Clay, variably silty, dusky yellow, laminated in part	0.6	17.8
Kesgrave Sands and Gravels	**a** 'Clayey' sandy gravel, sandy above 18.4 m Gravel: fine with coarse, subangular flint with rounded flint, quartz and quartzite Sand: medium with fine and coarse, subrounded quartz with angular flint, dark yellowish orange; iron-stained above 18.4 m, becoming very pale orange below	1.7	19.5
Crag	**b** 'Clayey' sand, greenish grey silty clay laminae below 21.4 m Gravel: fine, angular flint, rounded quartz and quartzite Sand: fine and medium, subrounded quartz, dark yellowish orange to pale yellowish orange	5.5+	25.0

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 mm
a	12	65	23	17.8-18.4	13	25	54	4	4	0	0
				18.4-19.5	11	8	25	22	27	7	0
				Mean	**12**	**14**	**35**	**10**	**18**	**5**	**0**
b	11	88	1	19.5-20.6	11	37	48	1	1	2	0
				20.6-21.4	16	38	40	1	4	1	0
				21.4-22.6	8	41	50	1	0	0	0
				22.6-23.6	11	51	37	1	0	0	0
				23.6-25.0	9	42	48	1	0	0	0
				Mean	**11**	**42**	**45**	**1**	**1**	**trace**	**0**
a+b	11	83	6	**Mean**	**11**	**35**	**44**	**4**	**5**	**1**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	18.4-19.5	36	22	22	18	0	2

TM 17 SE 36 **1986 7256** **South East of Denham Corner, Hoxne** **Block F²**

Surface level +57.8 m (+190 ft)
Water not struck
Shell and auger 152 mm
October 1981

Waste 25.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	1.2	1.2
Boulder Clay	Pebbly clay, silty, mottled light olive brown and light olive grey, becoming olive grey below 3.4 m, many pebbles of chalk, flint and mudstone; clayey silt horizons from 1.2 m to 1.6 m and from 6.2 m to 6.6 m	16.6	17.8
	Pebbly clay, sandy, light brownish grey, some pebbles of chalk and flint, becoming dark yellowish brown with sandy lamination below 20.3 m	2.7	20.5
Kesgrave Sands and Gravels	**a** 'Clayey' pebbly sand, less clayey and more pebbly below 21.3 m Gravel: fine and coarse, angular to well rounded flint, rounded quartzite and quartz Sand: medium with fine and coarse, rounded quartz, greyish orange	2.0	22.5
Crag	**b** 'Clayey' sand Sand: medium with fine and coarse, well rounded quartz, pale yellowish orange	2.5+	25.0

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 mm
a	10	68	22	20.5-21.3	17	18	53	5	6	1	0
				21.3-22.5	3	6	40	14	15	22	0
				Mean	**10**	**12**	**46**	**10**	**11**	**11**	**0**
b	11	87	2	22.5-23.8	10	11	75	3	1	0	0
				23.8-25.0	11	10	69	7	2	1	0
				Mean	**11**	**10**	**72**	**5**	**2**	**trace**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	21.3-22.5	27	25	22	24	0	2

TM 17 SE 37 **1514 7140** **North West of Occold, Occold** **Block F²**

Surface level +45.6 m (+150 ft)
Water struck at +31.6 m
Shell and auger 152 mm
October 1981

Overburden 14.0 m
Mineral 11.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, moderate yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty to sandy, light brown to moderate yellowish brown, angular chalk and flint pebbles, dark yellowish orange sand laminae below 8.9 m	13.6	14.0
Crag	Sand Sand: fine with medium, rounded quartz with some subangular to subrounded flint and glauconite, yellowish brown	11.0+	25.0

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
2	98	0	14.0–16.0	4	25	71	0	0	0	0
			16.0–18.0	2	73	24	1	0	0	0
			18.0–20.0	2	93	5	0	0	0	0
			20.0–22.5	2	69	29	0	0	0	0
			22.5–25.0	3	51	45	1	0	0	0
			Mean	**2**	**63**	**35**	**trace**	**0**	**0**	**0**

TM 17 SE 38 **1653 7190** **Kings Farm, Eye** **Block F²**

Surface level +54.2 m (+178 ft)
Water not struck
Shell and auger 152 mm
October 1981

Overburden 15.9 m
Mineral 9.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, mottled, medium light grey and light olive grey; becoming olive grey below 4.5 m, stiff, many fine pebbles of subrounded chalk with angular flint	6.3	6.7
	Pebbly clay, very sandy to silty, greyish yellowish brown, soft, many fine pebbles of rounded chalk with some angular flint, sandy near base	3.5	10.2
Glacial Sand and Gravel	**a** 'Very clayey' sand Gravel: fine, angular flint and chalk Sand: fine with medium and some coarse, quartz and flint, dark yellowish orange	1.1	11.3
Boulder Clay	Pebbly clay, greyish yellowish brown, soft, many fine pebbles of rounded chalk	1.5	12.8
	Pebbly clay, sandy, brownish grey, some pebbles of angular flint, rounded quartz and a trace of chalk; laminated silt and sand with iron pan in basal 0.1 m	3.1	15.9
Kesgrave Sands and Gravels	**b** 'Clayey' pebbly sand Gravel: fine and coarse, rounded quartzite with angular flint, some rounded flint and quartz Sand: medium and fine with coarse, subangular to subrounded quartz, strong yellowish orange	2.9	18.8
Crag	**c** 'Clayey' sand, iron-rich layers above 20.0 m, silt and clay laminae above 21.0 m Sand: fine with medium, quartz, dark yellowish orange	6.2+	25.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	34	63	3	10.2–11.3	34	37	23	3	3	0	0
b	18	75	7	15.9–17.0	20	48	30	2	0	0	0
				17.0–18.0	15	19	42	7	9	8	0
				18.0–18.8	19	25	45	6	4	1	0
				Mean	**18**	**31**	**39**	**5**	**4**	**3**	**0**
c	11	89	0	18.8–20.0	22	71	6	1	0	0	0
				20.0–21.0	12	42	45	1	0	0	0
				21.0–23.0	No grading data available						
				23.0–25.0	4	71	25	0	0	0	0
				Mean	**11**	**65**	**24**	**trace**	**trace**	**0**	**0**
b+c	**13**	**85**	**2**	**Mean**	**13**	**54**	**29**	**2**	**1**	**1**	**0**

TM 17 SE 39 **1782 7180** **Mill Farm, Redlingfield** **Block F²**

Surface level +56.1 m (+184 ft)
Water not struck
Shell and auger 152 mm
October 1981

Waste 22.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
Boulder Clay	Pebbly clay, sandy to silty, mottled light grey to light olive grey, becoming greyish brown below 4.7 m, hard, some pebbles of angular flint and subrounded chalk; becoming olive grey with abundant chalk below 12.5 m; soft, brownish grey to olive grey, with a trace of chalk pebbles below 15.1 m	17.2	17.2
	Pebbly clay, very sandy, brownish grey to olive grey some rounded quartz and a trace of chalk pebbles	3.8	21.0
Crag	'Very clayey' sand, laminae of silty clay Sand: fine with medium, quartz, greyish greenish yellow, becoming greyish yellow below 21.5 m	1.5+	22.5

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 mm	
20	79	1	21.0-22.5	20	60	18	1	1	0	0	

TM 17 SE 40 1949 7107 **Redlingfield Green, Redlingfield** **Block F²**

Surface level +52.2 m (+171 ft) Waste 25.0+
Water struck +27.7 m
Shell and auger 152 mm
October 1981

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay	0.1	0.1
Boulder Clay	Pebbly clay, silty, mottled moderate yellowish brown and pale olive grey, pebbles of chalk, mudstone and angular flint; becoming soft, sandy, brownish grey to olive grey below 14.8 m	16.0	16.1
Glacial Sand and Gravel	**a** 'Very clayey' sandy gravel Gravel: fine with coarse, angular flint with quartz, quartzite and chalk Sand: fine and medium with coarse, angular quartz, moderate yellowish brown	0.4	16.5
Boulder Clay	Pebbly clay, very sandy, brownish grey, pebbles of rounded quartz, quartzite, angular flint and a trace of chalk; becoming strong brown below 17.0 m	0.7	17.2
Kesgrave Sands and Gravels	**b** 'Clayey' sandy gravel Gravel: fine with coarse, angular to subangular flint with rounded flint, quartz and quartzite Sand: medium with fine and coarse, subrounded quartz with some quartzite and flint	3.0	20.2
Crag	**c** Silt, sandy to clayey, dark yellowish orange with laminae of light olive grey silty clay	3.4	23.6
	d 'Very clayey' sand, laminae of silty clay Sand: fine with medium, quartz	1.4+	25.0

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 mm	
a	29	52	19	16.1-16.5	29	22	24	6	12	7	0	
b	13	63	24	17.2-17.8	13	10	32	12	22	11	0	
				17.8-18.8	15	14	44	11	12	4	0	
				18.8-20.2	12	10	42	13	16	7	0	
				Mean	**13**	**11**	**40**	**12**	**17**	**7**	**0**	
c	52	46	2	21.3-23.6	52	41	4	1	2	0	0	
d	22	75	3	23.6-25.0	22	52	19	4	3	0	0	

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 −16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	17.2-17.8	51	18	10	21	0	0
	17.8-18.8	49	6	15	30	0	0
	18.8-20.2	51	19	9	21	0	0
	Mean	**50**	**16**	**11**	**23**	**0**	**0**

TM 17 SE 41 1579 7032 **The Firs, Occold** **Block F²**

Surface level +55.0 m (+180 ft) Waste 19.0 m+
Water not struck
Shell and auger 152 mm
October 1981

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, brown	0.4	0.4
Boulder Clay	Pebbly clay, silty, mottled medium grey and strong yellowish orange, pebbles of subrounded chalk with angular flint, becoming dark grey below 2.5 m, becoming soft below 11.5 m, firm below 16.5 m with many thin layers of sand	18.6+	19.0

TM 17 SE 42 1869 7019 **Redlingfield Hall, Redlingfield** **Block F²**

Surface level +50.8 m (167 ft) Overburden 16.3 m
Water struck approximately +31.8 m Mineral 8.9 m+
Shell and auger 152 mm
October 1981

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.3	0.3
Boulder Clay	Pebbly clay, sandy to silty, mottled medium grey and light olive brown; pebbles of rounded chalk, angular to rounded flint with some quartz, becoming olive grey below 5.0 m	6.2	6.5

	Pebbly clay, very sandy, greyish orange, soft, sparse chalk pebbles	0.3	6.8
Glacial Sand and Gravel	**a** 'Very clayey' pebbly sand Gravel: fine and coarse, angular flint with quartzite, some quartz and chalk Sand: fine and medium with coarse, subangular quartz, greyish orange	1.2	8.0
	b Clay, very sandy, some chalk pebbles and sand	0.9	8.9
Boulder Clay	Pebbly clay, very sandy, moderate yellowish brown; pebbles of angular flint with a trace of chalk and a layer of clayey chalk and flint gravel from 11.0 m to 11.2 m, becoming brownish grey to olive grey below 11.5 m	7.4	16.3
Kesgrave Sands and Gravels	**c** Pebbly Sand Gravel: fine with coarse, angular to subangular flint with rounded flint, quartz and quartzite Sand: medium with fine and coarse, subangular to subrounded quartz, yellowish grey	5.2	21.5
Crag	**d** Sand, trace of silty clay laminae above 22.5 m Sand: fine with medium, rounded quartz, dusky yellow	3.7+	25.2

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 mm
a	29	61	10	6.8-8.0	29	25	31	5	6	4	0
b	50	46	4	8.0-8.9	50	26	16	4	4	0	0
c	5	80	15	16.3-17.5	9	9	51	13	13	5	0
				17.5-18.6	5	6	64	16	9	0	0
				18.6-19.7	4	4	60	14	8	10	0
				19.7-21.5	5	12	56	10	8	3	6
				Mean	**5**	**8**	**60**	**12**	**9**	**4**	**2**
d	4	96	0	21.5-22.5	6	44	49	1	0	0	0
				22.5-23.5	2	58	40	0	0	0	0
				23.5-25.2	4	64	31	1	0	0	0
				Mean	**4**	**56**	**39**	**1**	**0**	**0**	**0**
c+d	5	**86**	9	**Mean**	5	**28**	**50**	8	5	**3**	1

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
c	16.3-18.6	35	14	23	26	0	2

TM 18 SW 42 1045 8474 **Elm Pollard, Shelfanger** **Block A**

Surface level +50.1 m (+164 ft)
Water straceuck at +38.6 m
Shell and auger 152 mm
June 1981

Overburden 12.0 m
Mineral 6.5 m
Bedrock 1.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy and silty, greyish brown	0.2	0.2
Boulder Clay	Pebbly clay, mottled olive grey and moderate olive brown, firm to hard, subrounded chalk and a few angular black flint pebbles	4.0	4.2
	Pebbly clay, silty, light olive grey, soft, fine pebbles of chalk and some chalk sand	4.8	9.0
	Pebbly clay, olive black, hard to very hard, chalk and flint pebbles	2.0	11.0
	Clay, silty, dusky yellowish brown, soft, with some pebbles of angular flint and rounded quartz and some chalk sand	1.0	12.0
Glacial Sand and Gravel	**a** 'Clayey' pebbly sand Gravel: fine and coarse, angular flint with rounded quartzite and vein quartz with some rounded flint Sand: medium, angular flint and quartz, moderate yellowish brown	1.0	13.0
Kesgrave Sands and Gravels	**b** Pebbly sand Gravel: fine and coarse, angular flint, rounded grey quartzite and vein quartz with some igneous Sand: fine and medium, angular quartz	4.0	17.0
Kesgrave Sands and Gravels	**c** Sandy gravel Gravel: fine with coarse, angular flint, rounded vein quartz and reddish brown quartzite with some ironstone and siltstone Sand: medium with coarse and fine, angular quartz and flint, dark yellowish orange	1.5	18.5
Upper Chalk	Chalk, pale yellowish orange	1.0+	19.5

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 mm
a	14	76	10	12.0-13.0	14	8	64	4	5	5	0
b	5	73	22	13.0-14.0	4	5	47	9	21	14	0
				14.0-15.0	4	17	34	6	16	23	0
				15.0-16.0	5	38	44	5	4	4	0
				16.0-17.0	8	34	46	5	4	3	0
				Mean	**5**	**24**	**43**	**6**	**11**	**11**	**0**
c	7	63	30	17.0-18.0	3	10	33	20	24	10	0
				18.0-18.5	11	13	34	17	19	6	0
				Mean	**7**	**11**	**34**	**18**	**22**	**8**	**0**
a+b+c	**7**	**71**	**22**	**Mean**	**7**	**18**	**44**	**9**	**13**	**9**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	13.0-14.0	44	2	28	23	0	3
	14.0-15.0	25	3	32	35	0	5
	Mean	**37**	**2**	**29**	**28**	**0**	**4**
c	17.0-18.0	38	0	33	22	0	7
	18.0-18.5	32	0	25	37	2	4
	Mean	**36**	**0**	**31**	**25**	**1**	**7**

TM 18 SW 43 1249 8448 Vine Farm, Diss **Block A**

Surface level +48.6 m (+159 ft)
Water struck at +39.2 m
Shell and auger 152 mm
June 1981

Overburden 10.3 m
Mineral 9.7 m
Bedrock 2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, dark yellowish brown	0.1	0.1
Boulder Clay	Silt, clayey, light brown and light olive grey, soft	0.6	0.7
	Pebbly clay, dark grey with streaks of moderate brown near top, hard, contains mostly subrounded chalk with some angular flint and rare subrounded quartzite pebbles	5.5	6.2
	Pebbly clay, light olive grey with medium light grey, soft to firm, with chalk sand and fine chalk pebbles	2.2	8.4
	Clay, silty and sandy, brownish grey to moderate brown, with some fine chalk pebbles and chalk sand with quartz and quartzite pebbles below 9.0 m	1.9	10.3
Kesgrave Sands and Gravels	a Sandy gravel, clayey from 10.3 m-13.0 m Gravel: fine and coarse, angular flint, rounded vein quartz and grey quartzite with some ironstone, igneous and metamorphic Sand: medium with fine and coarse, angular quartz and flint, light olive brown	5.7	16.0
Kesgrave Sands and Gravels	b 'Clayey' pebbly sand with flint cobbles from 17.0 m-18.0 m Gravel: fine with coarse, rounded vein quartz and grey quartzite with angular flint Sand: medium and fine, rounded quartz, micaceous, olive brown	4.0	20.0
Upper Chalk	Chalk, soft, silty near top, with hard angular fragments below 21.3 m	2.0+	22.0

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 mm
a	9	53	38	10.3-11.3	13	21	31	5	12	18	0
				11.3-12.4	13	8	25	10	23	21	0
				12.4-13.0	15	15	14	6	22	28	0
				13.0-14.0	7	15	45	9	16	8	0
				14.0-15.0	3	8	30	12	29	18	0
				15.0-16.0	4	5	36	21	19	15	0
				Mean	**9**	**12**	**30**	**11**	**20**	**18**	**0**
b	15	67	18	16.0-17.0	15	15	40	9	11	10	0
				17.0-18.0	11	15	32	11	20	7	4
				18.0-19.0	16	34	30	6	9	5	0
				19.0-20.0	16	49	25	4	3	3	0
				Mean	**15**	**28**	**32**	**7**	**11**	**6**	**1**
a+b	**11**	**60**	**29**	**Mean**	**11**	**19**	**32**	**9**	**16**	**13**	trace

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	11.3-12.4	29	2	28	36	0	5
	12.4-13.0	33	1	40	20	0	6
	13.0-14.0	37	4	25	32	0	2
	14.0-15.0	27	1	32	29	0	11
	15.0-16.0	18	1	28	38	0	15
	Mean	**28**	**2**	**30**	**32**	**0**	**8**
b	16.0-18.0	17	0	40	34	0	9

TM 18 SW 44 1433 8043 South-west of Elmtree Farm, Gissing **Block A**

Surface level +41.5 m (+136 ft)
Water struck at +25.5 m
Shell and auger 152 mm
July 1981

Waste 26.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, silty and sandy, mottled dark olive brown and medium grey becoming olive grey below 3.6 m, hard, many chalk, flint and mudstone pebbles, clayey silt layer from 3.2 m to 3.6 m	7.1	7.5
	Pebbly clay, sandy to silty, brownish grey to olive grey, firm, many fine chalk pebbles	3.9	11.4
	Pebbly clay, very silty, light olive grey, soft, much chalk debris, becomes less chalky, brownish grey below 15.0 m	5.3	16.7
	Pebbly clay, sandy, brownish olive grey, abundant angular chalk at 20.0 m, becomes dark yellowish brown below 23.9 m with a trace of chalk and rounded flint pebbles	9.8	26.5
?Glacial Sand and Gravel	Pebbly sand; angular flint and rounded quartz	0.1+	26.6

TM 18 SW 45 **1157 8355** **Shelfanger Grove, Shelfanger** **Block A**

Surface level +43.4 m (+142 ft)
Water struck at +27.6 m
Shell and auger 152 mm
June 1981

Overburden 15.8 m
Mineral 4.6 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, greyish brown, with a few flint pebbles	0.5	0.5
Boulder Clay	Pebbly clay, mottled strong brown and light grey, soft to firm, some chalk and flint pebbles	4.0	4.5
	Pebbly clay, light grey, firm, many chalk pebbles and chalk sand	6.1	10.6
	Pebbly clay, olive grey, waxy, hard, chalk, flint and mudstone pebbles	3.4	14.0
	Pebbly clay, silty, brownish grey, some subrounded chalk with quartzite and mudstone pebbles, some layers of chalk gravel	1.8	15.8
Glacial Sand and Gravel	**a** Sandy gravel Gravel: fine with coarse, angular flint and subrounded chalk with vein quartz and brown quartzite Sand: medium, angular flint and vein quartz, light olive grey to pale olive	1.2	17.0
?Kesgrave Sands and Gravels	**b** Sandy gravel, some brown quartzite cobbles from 20.0-20.4 m Gravel: fine and coarse, rounded brown quartzite with angular flint and rounded vein quartz Sand: medium, angular flint and vein quartz, moderate yellowish brown to dark yellowish orange	3.4+	20.4

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 mm
a	4	59	37	15.8-17.0	4	9	37	13	26	11	0
b	2	61	37	17.0-18.0	2	10	63	9	12	4	0
				18.0-19.0	3	13	35	11	26	12	0
				19.0-20.0	3	12	31	5	22	27	0
				20.0-20.4	1	3	41	11	22	21	1
				Mean	**2**	**9**	**43**	**9**	**21**	**16**	**trace**
a+b	**3**	**61**	**36**	**Mean**	**3**	**10**	**41**	**10**	**22**	**14**	**trace**

TM 18 SW 46 **1280 8313** **Primrose Farm, Diss** **Block A**

Surface level +42.2 m (+138 ft)
Water struck at 21.6 m
Shell and auger 152 mm
July 1981

Waste 25.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay	0.2	0.2
Boulder clay	Pebbly clay, silty, olive grey, many chalk pebbles below 2.9 m, some angular flint and rounded mudstone pebbles, layer of light olive grey clay with abundant chalk debris from 10.5 m to 11.1 m	19.0	19.2
	Pebbly clay, silty and sandy, olive grey becoming brownish grey, some fine chalk and quartzite pebbles, layer of rounded flint and quartzite gravel from 20.6 m to 20.8 m	1.6	20.8
	Pebbly clay, silty, light olive grey, soft, fine rounded chalk pebbles	1.9	22.7
	Pebbly clay, sandy, dark yellowish brown, hard, some rounded chalk, quartz, quartzite and subangular flints	2.3+	25.0

TM 18 SW 47 **1497 8323** **South of Shimpling Place, Burston** **Block A**

Surface level +36.3 m (+119 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 17.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, moderate brown	0.2	0.2
Boulder clay	Pebbly clay, silty and sandy, mottled medium to dark grey, dark yellowish brown and strong yellowish orange, firm, many fine rounded to subangular chalk fragments and some subangular white-patinated flint pebbles	4.0	4.2
	Pebbly clay, olive grey, very hard, many pebbles of chalk and some flint	11.0	15.2
Glacial Silt	Silt, with fine sand, olive grey, soft, rare chalk pebbles	2.3+	17.5

TM 18 SW 48 **1062 8202** **Darrow Wood Farm, Diss** **Block A**

Surface level +42.1 m (+138 ft)
Water struck at +30.1 m
Shell and auger 152 mm
June 1981

Overburden 14.1 m
Mineral 1.8 m
Waste 0.4 m
Mineral 6.2 m
Bedrock 0.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, moderate brown	0.3	0.3
Boulder Clay	Clay, mottled dark yellowish brown and medium dark grey, hard, with some fine chalk and flint pebbles	1.3	1.6
	Pebbly clay, silty, olive grey, firm to hard, many angular to subrounded chalk pebbles	8.2	9.8
	Clay, olive black, firm, some chalk, flint and mudstone pebbles, contains thin silt layers near base	4.3	14.1
Glacial Sand and Gravel	**a** Gravel with some flint and quartzite cobbles Gravel: fine with coarse, angular to subrounded flint with rounded quartzite, quartz and some subrounded chalk Sand: medium and coarse with fine, rounded to subrounded quartz with some angular flint and rounded chalk	1.8	15.9
Boulder Clay	Pebbly clay, silty, light olive grey, soft, many fine subangular chalk pebbles	0.4	16.3
?Glacial Sand and Gravel	**b** Pebbly sand, iron-stained in part Gravel: fine and coarse, angular to subangular flint with rounded quartzite and quartz Sand: medium with fine and coarse, rounded to subrounded quartz and rounded to subangular flint with some subrounded chalk near base	6.2	22.5
Upper Chalk	Chalk, angular fragments in soft matrix	0.5+	23.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	2	39	59	14.1-14.6	2	2	17	16	33	28	2
				14.6-15.5	3	3	25	18	37	14	0
				15.5-15.9	2	2	10	15	46	22	3
				Mean	**2**	**3**	**19**	**17**	**38**	**20**	**1**
b	3	84	13	16.3-17.3	4	9	48	6	16	17	0
				17.3-18.3	2	8	66	11	12	1	0
				18.3-19.3	3	70	23	2	2	0	0
				19.3-20.5	2	14	65	8	6	5	0
				20.5-21.3	3	18	62	4	6	7	0
				21.3-22.3	2	13	70	6	5	4	0
				22.3-22.5	7	12	56	11	8	6	0
				Mean	**3**	**21**	**56**	**7**	**8**	**5**	**0**
a+b	**3**	**73**	**24**	**Mean**	**3**	**17**	**47**	**9**	**15**	**9**	**trace**

TM 18 SW 49 **1087 8278** **Shelfanger Lodge** **Block A**

Surface level +32.2 m (+106 ft)
Water struck at +27.4 m
Shell and auger 152 mm
June 1981

Overburden 4.8 m
Mineral 2.7 m
Bedrock 1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dusky brown	0.3	0.3
Alluvium	Silt, mottled medium dark grey and moderate brown, soft	0.9	1.2
? Head	**a** 'Very clayey' pebbly sand Gravel: fine with coarse, angular flint with rounded quartz, chalk and some quartzite Sand: fine and medium, rounded quartz with some subrounded flint, pale brown and dark greenish grey	0.7	1.9
Boulder Clay	Pebbly clay, sandy, light grey, soft, many rounded chalk pebbles and some angular flint pebbles	2.1	4.0
	Clay, silty, brownish grey to dusky yellowish brown, soft to firm, with some fine rounded quartz and grey quartzite pebbles, subrounded chalk pebbles and chalk sand	0.8	4.8
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: fine with coarse, rounded quartz, brown and grey quartzite and angular to subrounded with some rounded flint Sand: medium with fine and coarse, rounded to subrounded and some subangular quartz and quartzite, olive grey	2.7	7.5
Upper Chalk	Chalk, containing hard angular fragments below 8.5 m	1.5+	9.0

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-1/16	+1/16 -1/4	+1/4 -1	+1 -4	+4 -16	+16 -64	+64 mm
a	35	57	8	1.2-1.9	35	29	25	3	5	3	0
b	4	71	25	4.8-6.0	5	5	39	9	24	18	0
				6.0-7.0	3	8	71	6	9	3	0
				7.0-7.5	1	16	68	5	6	4	0
				Mean	**4**	**8**	**56**	**7**	**15**	**10**	**0**

TM 18 SW 50 **1214 8240** **Prospect Farm, Diss** **Block A**

Surface level +38.5 m (+126 ft)
Water struck at +18.2 m
Shell and auger 152 mm
June 1981

Waste 20.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	1.4	1.4
Boulder Clay	Pebbly clay, mottled olive grey and moderate olive brown, firm, with some subrounded chalk and a trace of rounded mudstone pebbles, layer of light olive grey clay with abundant chalk debris 4.9 m to 6.2 m	13.6	15.0
Glacial Silt	Silt, olive grey, soft to firm, faint lamination with a trace of chalk sand near base	0.5	15.5
Boulder Clay	Pebbly clay, olive grey, very hard, chalk with flint and some mudstone pebbles	3.4	18.9
	Clay, silty and sandy, dark yellowish brown and brownish grey, trace of chalk and rounded quartz and quartzite pebbles	1.4+	20.3

TM 18 SW 51 **1396 8285** **Audley End, Burston** **Block A**

Surface level +30.7 m (+101 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 19.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown, some flint pebbles	0.3	0.3
Boulder Clay	Clay, sandy, dusky yellowish brown, soft to firm, with some angular flint pebbles	0.6	0.9
	Pebbly clay, mottled light grey, yellowish orange and dusky yellowish brown becoming dark grey below 3.5 m, hard becoming very hard, many pebbles of rounded chalk with some flint and subrounded grey mudstone	12.2	13.1
Glacial Silt	Silt, olive grey, firm, with slight sub-horizontal lamination	0.5	13.6
Boulder Clay	Pebbly clay, olive grey, very hard, many pebbles of chalk with some flint and mudstone	5.4+	19.0

TM 18 SW 52 **1225 8102** **Walcot Green, Diss** **Block A**

Surface level +34.0 m (+112 ft)
Water not struck
Shell and auger 152 mm
June 1981

Overburden 0.7 m
Mineral 1.0 m
Waste 23.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, dark yellowish brown	0.3	0.3
Boulder Clay	Pebbly clay, dark yellowish orange and dusky yellow, many angular flint pebbles with some chalk pebbles and chalk sand	0.4	0.7
Glacial Sand and Gravel	**a** 'Very clayey' sandy gravel Gravel: fine with coarse, angular to subangular flint Sand: fine and medium with coarse, subrounded quartz and subangular flint	1.0	1.7
	b Clay, very sandy, moderate yellowish orange, pebbles of flint and chalk	1.4	3.1
Boulder Clay	Pebbly clay, olive grey with light olive grey from 17.6 m to 20.0 m, hard to very hard, many pebbles of chalk with some rounded mudstone	22.4+	25.5

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 mm
a	34	41	25	0.7-1.7	34	17	16	8	20	5	0
b	44	32	24	1.7-2.7	40	14	12	7	15	5	7
				2.7-3.1	47	14	11	7	12	9	0
				Mean	**44**	**14**	**11**	**7**	**14**	**7**	**3**

TM 18 SW 53 **1298 8193** **Woolsey Bridge, Diss** **Block A**

Surface level +26.6 m (+87 ft)
Water struck at +25.4 m
Shell and auger 152 mm
July 1981

Overburden 1.0 m
Mineral 1.6 m
Waste 0.4 m
Bedrock 1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, dusky yellowish brown	0.4	0.4
Alluvium	Clay, sandy, mottled moderate brown and dark orange, hard	0.6	1.0
?River Terrace Deposits	Sandy gravel Gravel: coarse and fine, angular to subangular black flint with a trace of subrounded quartz Sand: medium and coarse with fine, subrounded quartz with subrounded to subangular flint	1.6	2.6
Boulder Clay	Clay, dark grey, firm, with some chalk and flint pebbles	0.4	3.0
Upper Chalk	Chalk, light grey, angular fragments in soft matrix	1.5+	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 mm
7	53	40	1.0-2.1	9	8	25	15	18	25	0
			2.1-2.6	4	6	27	27	20	16	0
			Mean	**7**	**7**	**27**	**19**	**18**	**22**	**0**

TM 18 SW 54 1422 8156 Burston Bridge, Scole Block A

Surface level +25.7 m (+84 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 20.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, moderate yellowish brown	0.5	0.5
Boulder Clay	Pebbly clay, silty, mottled dusky yellow to light grey becoming olive grey, soft to firm many pebbles of rounded chalk with some angular flint and subrounded mudstone	7.1	7.6
Glacial Silt	Silt, olive grey, micaceous	1.4	9.0
Boulder Clay	Pebbly clay, very silty, olive grey, light olive grey from 9.0 m to 10.0 m, many rounded chalk pebbles with some mudstone	7.8	16.8
Glacial Sand and Gravel	Gravel, very clayey, many fine and coarse chalk pebbles	0.7	17.5
Boulder Clay	Pebbly clay, silty and sandy, light olive grey to olive grey, many chalk pebbles with chalk sand and some flint pebbles	2.5+	20.0

TM 18 SW 55 1017 8017 South of Brewer's Green, Roydon Block A

Surface level +43.8 m (+144 ft)
Water struck at +23.8 m
Shell and auger 152 mm
June 1981

Overburden 1.4 m
Mineral 1.4 m
Waste 16.2 m
Mineral 6.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, moderate brown, with flint pebbles	0.5	0.5
Boulder Clay	Clay, silty, orange brown, firm, with a trace of angular flint pebbles	0.9	1.4
Glacial Sand and Gravel	**a** 'Very clayey' sandy gravel Gravel: coarse with fine, angular to subrounded flint with subrounded chalk and some rounded quartz, brown quartzite and black flint Sand: fine and medium, subrounded quartz and angular flint and rounded chalk especially below 2.6 m	1.4	2.8
Boulder Clay	Pebbly clay, dark yellowish orange to yellowish grey, firm, pebbles of chalk with flint and a trace of mudstone	2.8	5.6
Glacial Silt	Silt, olive grey, firm, showing faint lamination	0.6	6.2
Boulder Clay	Pebbly clay, silty, olive grey to strong brown, hard to very hard, with many pebbles of chalk and some flint pebbles and cobbles	12.8	19.0
Glacial Sand and Gravel	**b** 'Clayey' sand, some pebbles below 22.0 m Sand: medium with fine, rounded to subangular quartz and subangular to angular flint with some subrounded chalk	6.0+	25.0

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 mm
a	28	50	22	1.4-2.3	26	35	21	3	4	11	0
				2.3-2.8	31	6	19	8	13	23	0
				Mean	**28**	**26**	**20**	**4**	**7**	**15**	**0**
b	11	87	2	19.0-20.0	9	52	39	0	0	0	0
				20.0-21.0	17	20	62	1	0	0	0
				21.0-22.0	18	20	61	1	0	0	0
				22.0-23.0	11	25	61	2	1	0	0
				23.0-24.0	5	16	70	3	2	4	0
				24.0-25.0	3	16	79	1	1	0	0
				Mean	**11**	**25**	**61**	**1**	**1**	**1**	**0**
a+b	**14**	**81**	**5**	**Mean**	**14**	**25**	**54**	**2**	**2**	**3**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	2.3-2.8	52	2	3	6	33	4

TM 18 SW 56 **1117 8092** **Sturgeon's Farm, Roydon** **Block A**

Surface level +35.0 m (+115 ft)
Water struck at +24.5 m
Shell and auger 152 mm
August 1981

Overburden	10.5 m
Mineral	1.4 m
Waste	1.4 m
Mineral	2.3 m
Waste	0.5 m
Mineral	8.9 m
Bedrock	2.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown	0.5	0.5
Boulder Clay	Pebbly clay, silty, medium grey with moderate yellowish brown, firm, many pebbles of rounded to subangular chalk, with some angular to subangular flint and a trace of rounded quartz and quartzite pebbles	1.7	2.2
	Pebbly clay, dark grey to olive grey, very hard, many pebbles of chalk with rounded brown mudstone	8.3	10.5
Glacial Sand and Gravel	**a** 'Clayey' pebbly sand Gravel: fine with coarse, subangular flint with rounded quartz and quartzite and some flint Sand: medium with fine and some coarse, rounded brown-stained quartz with some rounded chalk	1.4	11.9
Glacial Silt	Silt, very sandy, light olive grey and very light grey, soft to firm, with abundant chalk sand	1.4	13.3
Glacial Sand and Gravel	**b** Pebbly sand Gravel: fine and coarse, subangular flint with rounded quartz, quartzite and some flint Sand: medium with fine, mostly flint with quartz	2.3	15.6
Boulder Clay	Clay, sandy, grey, pebbles of flint with some quartz, quartzite and chalk	0.5	16.1
Glacial Sand and Gravel	**c** Pebbly sand Gravel: coarse and fine, angular to subrounded flint with rounded quartz and quartzite and some well rounded flint Sand: medium with fine and coarse, rounded quartz and quartzite with some flint and chalk	8.9	25.0
Upper Chalk	Chalk, soft	2.0+	27.0

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 mm
a	19	65	16	10.5-11.9	19	11	50	4	11	5	0
b	9	78	13	13.3-14.5	8	25	54	2	5	6	0
				14.5-15.6	10	23	47	3	10	7	0
				Mean	**9**	**24**	**51**	**3**	**7**	**6**	**0**
c	3	78	19	16.1-17.0	6	17	46	5	15	11	0
				17.0-18.0	6	14	49	5	11	15	0
				18.0-19.0	3	27	42	3	10	15	0
				19.0-20.0	2	15	44	7	14	18	0
				20.0-21.0	3	18	62	8	8	1	0
				21.0-23.0	3	11	77	7	2	0	0
				23.0-25.0	1	8	59	6	11	15	0
				Mean	**3**	**14**	**58**	**6**	**9**	**10**	**0**
a+b+c	**6**	**76**	**18**	**Mean**	**6**	**16**	**55**	**5**	**9**	**9**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	10.5-11.9	56	6	18	17	1	2
b	14.5-15.6	61	4	14	15	6	0
c	16.1-17.0	56	2	23	17	trace	2
	17.0-18.0	52	5	23	15	0	5
	18.0-19.0	33	5	30	32	0	0
	19.0-20.0	44	3	15	37	0	1
	20.0-21.0	42	0	16	23	19	0
	23.0-25.0	37	0	26	31	trace	6
	Mean	**43**	**2**	**23**	**28**	**1**	**3**

TM 18 SW 57 **1333 8038** **Frenze Hall, Scole** **Block A**

Surface level +25.5 m (+84 ft)
Water struck at +23.2 m
Shell and auger 152 mm
August 1981

Overburden	0.2 m
Mineral	5.1 m
Waste	9.7 m
Bedrock	1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, very sandy, medium brown	0.2	0.2
?Glacial Sand and Gravel	Sand, with rare flint pebbles near top Sand: medium with fine, rounded to subrounded quartz and quartzite with a trace of subrounded flint	5.1	5.3
Silt	Silt, very clayey, dark yellowish brown near top becoming olive black and olive grey, firm to hard, slight lamination below 6.6 m, with strong bioturbation below 7.9 m, indurated peaty zones and traces of comminuted shell debris below 10.8 m	6.7	12.0
Boulder Clay	Pebbly clay, medium grey, hard, many fine pebbles of chalk with some mudstone and flint	3.0	15.0
Upper Chalk	Chalk, with flints	1.5+	16.5

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 mm
5	93	2	0.2-1.3	6	0*	90	2	2	0	0
			1.3-2.3	6	41	44	2	4	3	0
			2.3-3.3	4	44	51	1	0	0	0
			3.3-5.3	4	23	73	0	0	0	0
			Mean	**5**	**26**	**66**	**1**	**1**	**1**	**0**

* Due to an error in grading, the proportion of fine sand is included with that of medium sand.

TM 18 SW 58 **1450 8085** **West of the Grange, Scole** **Block A**

Surface level +38.8 m (+127 ft)
Water struck at +25.3 m
Shell and auger 152 mm
July 1981

Overburden 13.5 m
Mineral 8.7 m
Bedrock 1.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.4	0.4
Boulder Clay	Pebbly clay, silty to sandy, mottled moderate yellowish brown and light olive grey becoming olive grey below 3.3 m, firm to very hard, many chalk pebbles with some flint, mudstone and pink granite, clayey silt layer 9.3 m to 10.0 m, becoming soft to firm, sandy, chalky clay 10.0 m to 11.6 m	11.2	11.6
	Clay, very sandy, brownish grey, soft, trace of chalk sand	1.9	13.5
Glacial Sand and Gravel	**a** Sand Sand: medium with fine, subangular to subrounded quartz with some flint, greyish yellowish brown	3.5	17.0
	b Sandy gravel Gravel: fine with coarse, angular to subrounded flint, rounded quartz and brown and grey quartzite with some subrounded chalk near top Sand: medium with fine and coarse, rounded to subrounded quartz and quartzite with some flint	5.2	22.2
Upper Chalk	Chalk, soft	1.9+	24.1

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
					Fines	Sand			Gravel		
	Fines	Sand	Gravel		$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	6	94	0	13.5-14.8	8	32	58	2	0	0	0
				14.8-16.0	7	42	50	1	0	0	0
				16.0-17.0	4	26	69	1	0	0	0
				Mean	**6**	**34**	**59**	**1**	**0**	**0**	**0**
b	3	64	33	17.0-18.4	3	17	56	6	11	7	0
				18.4-19.7	2	9	52	13	19	5	0
				19.7-21.0	2	9	22	12	34	21	0
				21.0-22.2	3	15	36	8	16	22	0
				Mean	**3**	**13**	**41**	**10**	**20**	**13**	**0**
a+b	4	76	20	13.5-22.2	4	21	49	6	12	8	0

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	17.0-18.4	64	0	19	11	2	4
	18.4-19.7	43	0	23	21	2	11
	19.7-21.0	34	0	30	29	0	7
	21.0-22.2	39	0	34	26	trace	trace

TM 18 SE 29 **1562 8438** **East of Elmtree Farm, Gissing** **Block B**

Surface level +34.8 m (+114 ft)
Water struck at 17.8 m
Shell and auger 152 mm
July 1981

Waste 20.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, light brown, some flint pebbles	0.3	0.3
Boulder Clay	Pebbly clay, sandy, mottled medium grey and strong yellowish orange becoming olive black to olive grey below 2.7 m, pebbles of angular flint and rounded chalk	16.7	17.0
Glacial Sand and Gravel	Sandy gravel Gravel: fine with coarse, subrounded to rounded chalk with angular flint and sedimentary rock pebbles, some rounded quartzite and quartz Sand: medium with coarse and fine subangular flint with quartz	3.0	20.0
Boulder Clay	Pebbly clay, brown, stiff, pebbles of quartzite with a trace of chalk	0.1+	20.1

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
				Fines	Sand			Gravel		
Fines	Sand	Gravel		$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
4	49	47	17.0-18.0	4	16	39	10	19	12	0
			18.0-20.0	4	7	18	15	40	16	0
			Mean	**4**	**10**	**25**	**14**	**33**	**14**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
17.0-20.0	34	trace	3	3	47	13*

*Mainly sedimentary

TM 18 SE 30 **1766 8475** **East of Sheckford Lane, Tivetshall Saint Mary** **Block B**

Surface level +46.3 m (+152 ft)
Water not struck
Shell and auger 152 mm
November 1981

Waste 19.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, silty, brown	0.3	0.3
Boulder Clay	Pebbly clay, mottled moderate yellowish brown and strong yellowish orange becoming olive grey below 2.8 m, pebbles of rounded chalk, angular flint and some mudstone	19.2+	19.5

TM 18 SE 31 1821 8403 Semere Green, Dickleburgh Block B

Surface level +43.3 m (+142 ft)
Water struck at 24.6 m
Shell and auger 152 mm
August 1981

Waste 25.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clayey, sandy, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, sandy, mottled light olive brown and light olive grey becoming olive grey below 4.0 m, many pebbles of chalk and mudstone. Sharp base	7.4	7.8
	Pebbly clay, very silty, dark yellowish brown, chalk pebbles. Dark yellowish brown silt horizons from 8.0 m to 8.3 m and 9.4 m to 10.2 m	2.4	10.2
	Pebbly clay, silty, light olive grey, some pebbles of angular flint, rounded chalk and a trace of mudstone, becoming very sandy, soft below 17.0 m, clayey silt horizon 13.5 m to 13.8 m	8.5	18.7
Glacial Sand and Gravel	Pebbly sand; layers of silty clay with some angular flint and chalk pebbles above 20.7 m Gravel: fine and coarse, angular flint with rounded quartz and quartzite and some chalk, well rounded quartz and sedimentary Sand: medium, angular quartz with some flint and chalk, light olive grey	6.8+	25.5

GRADING

Mean for deposit percentages			Depth below surface (m)	Percentages						
				Fines	Sand			Gravel		
Fines	Sand	Gravel		$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
7	80	13	18.7-19.7	21	8	54	3	7	7	0
			19.7-20.7	9	6	66	4	3	12	0
			20.7-22.1	4	7	87	1	1	0	0
			22.1-23.7	5	5	64	7	11	8	0
			23.7-25.5	1	3	77	5	6	8	0
			Mean	**7**	**5**	**71**	**4**	**6**	**7**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
18.7-25.5	56	4	12	16	4	8

TM 18 SE 32 1972 8442 Upper Vaunces Farm, Pulham Saint Mary Block B

Surface level +43.0 m (+141 ft)
Water struck at +23.6 m
Shell and auger 152 mm
August 1981

Waste 22.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.3	0.3
Boulder Clay	Pebbly clay, sandy, olive grey, many chalk pebbles, clayey silt horizon 5.5 m to 5.0 m, soft sandy clay layers with chalk rubble 2.5 m to 4.5 m, 9.5 m to 10.8 m and 11.3 m to 13.1 m	13.8	14.1
Glacial Sand and Gravel	**a** Pebbly sand, Gravel: fine with coarse, angular flint with subrounded to rounded quartzite and quartz and some sedimentary rock pebbles including chalk Sand: medium with fine and some coarse, subrounded quartz with chalk and flint, pale yellowish brown	3.6	17.7
Boulder Clay	Pebbly clay, silty to sandy, light olive grey, much comminuted chalk	1.1	18.8
	Pebbly clay, very sandy, olive grey to brownish grey, with some fine pebbles of chalk, quartz and rounded flint	0.6	19.4
Kesgrave Sands and Gravels	**b** 'Clayey' pebbly sand, thin silty clay layers Gravel: fine and coarse, angular to subangular flint with rounded quartzite and quartz Sand: fine with medium, quartz, light olive grey	2.9+	22.3

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
					Fines	Sand			Gravel		
	Fines	Sand	Gravel		$-\frac{1}{16}$	$+\frac{1}{16}-\frac{1}{4}$	$+\frac{1}{4}-1$	$+1-4$	$+4-16$	$+16-64$	$+64$ mm
a	2	85	13	14.1-15.2	4	19	49	6	7	11	4
				15.2-16.2	3	3	84	6	4	0	0
				16.2-17.3	2	5	70	7	10	6	0
				17.3-17.7	0	19	69	3	3	6	0
				Mean	**2**	**11**	**68**	**6**	**6**	**6**	**1**
b	19	65	16	19.4-22.3	19	46	18	1	9	7	0

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	14.1-17.7	57	0	12	24	2	5
b	19.4-22.3	40	6	16	32	0	6

TM 18 SE 33 **1658 8361** **Moor Road, Tivetshall Saint Mary** **Block B**

Surface level +30.2 m (+99 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 19.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, brown	0.3	0.3
Boulder Clay	Pebbly clay, mottled grey and brown becoming medium grey below 2.7 m and olive black below 13.5 m, pebbles of chalk with angular flint and rounded mudstone	18.7+	19.0

TM 18 SE 34 **1886 8323** **Lonely Road, Dickleburgh** **Block B**

Surface level +39.7 m (+ 130 ft)
Water struck at +19.7 m
Shell and auger 152 mm
July 1981

Overburden 5.4 m
Mineral 3.8 m
Waste 13.2 m
Bedrock 2.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, soil and brick rubble	0.9	0.9
Boulder Clay	Pebbly clay, sandy, olive grey, stiff, pebbles of chalk and some angular flint and rounded mudstone	4.5	5.4
Glacial Sand and Gravel	a 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with subangular to subrounded chalk, quartzite and some quartz and rounded flint Sand: medium, angular flint with chalk, dark yellowish orange	3.8	9.2
Boulder Clay	Pebbly clay, silty to very sandy, light olive grey, soft, many fine pebbles of chalk with some angular flint	7.2	16.4
	Pebbly clay, sandy, olive grey to brownish grey, firm, pebbles of rounded quartz with a trace of chalk	3.9	20.3
Kesgrave Sands and Gravels	Sand, medium to coarse, angular quartz with flint, dark yellowish brown	0.6	20.9
	Clay, very sandy, dark yellowish brown, some angular flint pebbles	0.6	21.5
	b Sandy gravel, thin layers of sandy clay Gravel: coarse and fine, quartzite with subangular flint, quartz and some rounded flint pebbles Sand: medium with fine and coarse, subangular to sub-rounded quartz with angular flint	0.9	22.4
Upper Chalk	Chalk, soft, white	2.3+	24.7

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 mm
a	17	60	23	5.4-6.8	16	6	41	10	19	8	0
				6.8-8.4	17	5	44	11	18	5	0
				8.4-9.2	19	8	49	7	15	2	0
				Mean	**17**	**6**	**44**	**10**	**18**	**5**	**0**
b	3	67	28	21.5-22.4	5	18	37	12	11	17	0

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	5.4-9.2	50	2	3	9	30	6
b	21.5-22.4	28	6	16	50	0	0

TM 18 SE 35 **1559 8258** **South of Shimpling Hall, Burston** **Block B**

Surface level +29.7 m (+97 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 18.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark brown, some flint pebbles	0.6	0.6
Boulder Clay	Pebbly clay, sandy, mottled medium grey and light olive grey becoming olive grey below 3.5 m, hard, pebbles of rounded and subrounded chalk with some angular flint	17.6+	18.2

TM 18 SE 36 **1766 8279** **North of Rectory Farm, Dickleburgh** **Block B**

Surface level +30.2 m (+99 ft)
Water struck at +13.2 m
Shell and auger 152 mm
July 1981

Waste 18.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, peaty, sandy, dusky yellowish brown, some angular flint and rounded quartz pebbles	0.7	0.7
Boulder Clay	Pebbly clay, light olive grey becoming medium grey below 1.5 m, firm becoming hard below 3.0 m, many pebbles of rounded chalk and some angular flint, very chalky below 17.0 m	17.4+	18.1

TM 18 SE 37 **1865 8210** **Langmere Green, Dickleburgh** **Block B**

Surface level +37.3 m (+122 ft)
Water struck at +32.2 m and +28.3 m
Shell and auger 152 mm
July 1981

Overburden 5.1 m
Mineral 1.8 m
Waste 2.1 m
Mineral 15.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay, dark yellowish brown	0.4	0.4
Boulder Clay	Pebbly clay, sandy, mottled light olive brown and moderate yellowish brown becoming olive grey below 3.8 m, pebbles of chalk, mudstone and angular flint, layers of soft sandy clay and chalk rubble	4.7	5.1
Glacial Sand and Gravel	**a** 'Clayey' gravel Gravel: coarse with fine and cobble, angular flint and chalk Sand: coarse and medium with fine, quartz, flint and chalk, yellowish grey	1.8	6.9
Boulder Clay	Pebbly clay, silty, olive grey, many pebbles of chalk and some mudstone	2.1	9.0
Glacial Sand and Gravel	**b** Sandy gravel, sandy layers from 14.0 m to 15.0 m and 19.2 m to 20.7 m Gravel: fine and coarse, angular flint with rounded quartzite, quartz, and some soft sedimentary, trace of chalk and rounded flint Sand: medium with coarse, subrounded quartz with subangular flint, moderate yellowish brown	15.8+	24.8

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 mm
a	15	30	55	5.1-6.1	14	3	10	12	13	36	12
				6.1-6.9	18	3	12	20	12	27	8
				Mean	**15**	**3**	**11**	**16**	**13**	**32**	**10**
b	2	64	34	9.0-10.1	4	4	36	10	30	16	0
				10.1-11.3	3	8	27	7	25	30	0
				11.3-12.6	2	4	38	16	23	17	0
				12.6-14.0	1	3	39	21	19	17	0
				14.0-15.0	3	5	71	9	7	5	0
				15.0-16.5	2	3	43	15	24	13	0
				16.5-17.8	2	3	61	13	11	10	0
				17.8-19.2	1	2	30	18	37	12	0
				19.2-20.7	3	18	78	1	0	0	0
				20.7-22.0	3	2	62	17	13	3	0
				22.0-23.5	1	2	50	15	26	6	0
				23.5-24.8	1	1	20	16	49	13	0
				Mean	**2**	**5**	**46**	**13**	**22**	**12**	**0**
a+b	**3**	**61**	**36**	**Mean**	**3**	**4**	**44**	**13**	**21**	**14**	**1**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	9.0-10.1	78	0	6	11	0	5
	10.1-11.3	63	0	10	25	trace	2
	11.3-12.6	67	1	5	22	0	5
	12.6-14.0	64	0	11	19	1	5
	14.0-15.0	70	2	9	18	0	1
	15.0-16.5	43	1	19	33	1	3
	16.5-17.8	71	0	6	23	0	0
	17.8-19.2	49	0	17	30	trace	4
	22.0-23.5	56	0	13	28	trace	3
	23.5-24.8	57	trace	15	24	0	4
	Mean	**60**	**trace**	**12**	**25**	**trace**	**3**

TM 18 SE 38 **1984 8291** **Rushall Village** **Block B**

Surface level +36.2 m (+119 ft)
Water struck at +28.0 m
Shell and auger 152 mm
July 1981

Overburden 7.2 n
Mineral 6.7 m
Waste 11.1 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, clay, sandy	0.4	0.4
Boulder Clay	Pebbly clay, sandy to silty, moderate yellowish brown becoming olive grey below 3.8 m, many chalk pebbles	6.8	7.2
Glacial Sand and Gravel	Pebbly sand, layers of light olive grey, chalky, pebbly clay from 11.2 to 12.2 m. Few pebbles below 12.2 m Gravel: fine with coarse, angular flint with subrounded chalk, quartzite and some quartz and sedimentary rock pebbles Sand: medium with fine and coarse, angular quartz with flint and some chalk, moderate yellowish brown	6.7	13.9
Glacial Silt	Silt and silty clay, light olive grey, some coarse chalk sand	2.7	16.6
Boulder Clay	Pebbly clay, silty, light olive grey, very soft, many chalk pebbles	1.5	18.1
Glacial Silt	Silt and silty clay, light olive grey, laminated, some fine pebbles of angular flint and rounded chalk	6.9+	25.0

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 mm
8	72	20	7.2-8.2	17	4	36	12	23	8	0
			8.2-9.2	4	8	50	13	18	7	0
			9.2-10.2	4	8	41	18	20	9	0
			10.2-11.2	4	5	49	14	19	9	0
			11.2-12.2	10	8	54	11	5	12	0
			12.2-13.9	9	11	75	4	1	0	0
			Mean	**8**	**8**	**53**	**11**	**13**	**7**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
7.2-10.2	52	0	7	8	25	8
10.2-12.2	59	0	0	9	28	4

TM 18 SE 39 1997 8208 South of Rushall Hall, Dickleburgh Block B

Surface level +45.5 m (+149 ft)
Water not struck
Shell and auger 152 mm
November 1981

Waste 19.4 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, yellowish brown	0.2	0.2
Boulder Clay	Pebbly clay, silty, mottled moderate yellowish brown and light brown becoming dark grey at 3.8 m and olive grey below 15.0 m, firm to very hard, many pebbles of chalk with some angular flint and mudstone	19.2+	19.4

TM 18 SE 40 1542 8152 West of Broad Way, Scole Block B

Surface level +37.0 m (+121 ft)
Water struck at +25.0 m
Shell and auger 152 mm
July 1981

Overburden 12.0 m
Mineral 13.2 m
Bedrock 1.2 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, flints	0.3	0.3
Boulder Clay	Pebbly clay, sandy, mottled light olive grey and moderate yellowish brown, firm, becoming olive grey, very hard, below 3.0 m, many chalk pebbles, with angular flint and mudstone; becoming brownish grey to olive grey below 9.0 m and soft, sandy, light olive grey and chalky below 10.3 m	11.7	12.0
Glacial Sand and Gravel	Sandy gravel Gravel: fine and coarse, angular to subangular flint and rounded quartzite with rounded quartz and a trace of chalk and rounded flint Sand: medium with fine and some coarse, subrounded quartz with flint, greyish yellowish brown	13.2	25.2
Upper Chalk	Chalk, white, soft	1.2+	26.4

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 mm
4	71	25	12.0-13.0	10	43	45	1	1	0	0
			13.0-14.9	5	42	52	1	0	0	0
			14.9-16.3	2	9	45	13	25	6	0
			16.3-18.2	1	10	16	12	31	30	0
			18.2-19.1	2	7	23	30	29	9	0
			19.1-20.0	2	8	52	13	15	10	0
			20.0-21.0	4	1	74	11	10	0	0
			21.0-22.5	0	1	82	6	7	4	0
			22.5-23.8	2	2	74	10	7	5	0
			23.8-25.2	9	2	26	6	18	39	0
			Mean	**4**	**13**	**49**	**9**	**14**	**11**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
14.9-16.3	54	0	12	33	1	0
17.0-18.2	55	1	9	33	2	trace
18.2-19.1	70	1	9	16	1	3
19.1-20.0	53	4	8	28	2	5
20.0-22.5	54	2	1	38	5	0
23.8-25.2	43	0	20	35	2	0
Mean	**53**	**1**	**11**	**32**	**2**	**1**

TM 18 SE 41 1671 8180 Dickleburgh House, Dickleburgh Block B

Surface level +37.2 m (+122 ft)
Water struck at +24.7 m
Shell and auger 152 mm
July 1981

Overburden 12.5 m
Mineral 5.2 m
Bedrock 1.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy clay, moderate yellowish brown	0.3	0.3
Boulder Clay	Pebbly clay, mottled light olive brown to olive grey, hard, pebbles of chalk with some flint	3.2	3.5
	Pebbly clay, sandy to silty, light olive grey, soft, much comminuted chalk, becoming brownish grey with fewer chalk pebbles below 10.5 m	8.6	12.1
	Pebbly clay, sandy, brownish black, firm, some pebbles of subangular flint	0.4	12.5
Kesgrave Sands and Gravels	Sandy gravel Gravel: fine with coarse, subangular flint, rounded quartzite and quartz Sand: medium with coarse and fine, subrounded quartz with flint, pale yellowish brown	5.2	17.7
Upper Chalk	Chalk, white	1.3+	19.0

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 mm
4	67	29	12.5-13.7	8	14	35	8	19	16	0
			13.7-14.5	5	6	35	6	25	23	0
			14.5-15.5	1	6	61	13	15	4	0
			15.5-16.7	3	7	54	14	19	3	0
			16.7-17.7	2	5	54	13	19	7	0
			Mean	**4**	**7**	**49**	**11**	**19**	**10**	**0**

COMPOSITION

Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
	Flint					
	Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
12.5-13.7	44	0	10	46	0	trace
13.7-14.5	36	0	9	54	0	1
14.5-16.7	43	0	17	40	0	trace
16.7-17.7	28	0	11	55	0	6
Mean	**40**	**0**	**13**	**46**	**0**	**1**

TM 18 SE 42 1748 8129 East of Hill Farm, Dickleburgh Block B

Surface level +45.6 m (+150 ft)
Water not struck
Shell and auger 152 mm
July 1981

Waste 20.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground, flint cobbles	0.5	0.5
Boulder Clay	Pebbly clay, sandy, mottled light grey and greyish orange, firm, becomes olive black, very hard below 4.5 m, many pebbles of chalk with some angular flint and rounded mudstone	19.5+	20.0

TM 18 SE 43 1608 8061 Tollgate Farm, Scole Block B

Surface level +46.2 m (+152 ft)
Water struck at +25.6 m
Shell and auger 152 mm
July 1981

Waste 24.0 m
Bedrock 1.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil, sandy, dark yellowish brown	0.3	0.3
Boulder Clay	Pebbly clay, sandy, silty, mottled light olive brown and light olive grey becoming olive black, hard below 2.5 m, many pebbles of subrounded chalk with some mudstone and angular flint	12.1	12.4
Glacial Sand and Gravel	**a** 'Clayey' sandy gravel Gravel: fine and coarse, angular flint with rounded reddish-brown quartzites and some quartz and sedimentary Sand: medium with fine and some coarse, subangular to subrounded quartz with some flint, pale yellowish brown	2.6	15.0
Glacial Silt	Silt, with chalk sand, soft, light olive grey	1.3	16.3
Boulder Clay	Pebbly clay, silty, light grey, firm, many fine pebbles of chalk with some flint	0.1	16.4
	Pebbly clay, silty to sandy, dusky yellowish brown, some well-rounded flint cobbles and fine chalk pebbles; becoming brownish grey, hard, with pebbles of quartz and quartzite below 17.3 m	1.6	18.0
?Kesgrave Sands and Gravels	**b** 'Clayey' gravel with some laminae of silty clay Gravel: fine and coarse, rounded grey quartzite with angular flint, quartz and some soft sandstone and chert Sand: medium with fine and coarse, angular to sub-angular quartz with flint, pale yellowish brown	1.2	19.2
	c Silt, sandy, micaceous, laminated, greenish grey	1.4	20.6
Ingham Sand and Gravel	**d** 'Clayey' sandy gravel Gravel: fine with coarse, rounded reddish-brown quartzite and iron-stained mudstone with angular flint and vein quartz Sand: fine and medium with coarse, angular quartz and flint, moderate brown	3.4	24.0
Upper Chalk	Chalk, soft, white	1.0+	25.0

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 mm
a	10	62	28	12.4-14.0	10	10	35	9	19	17	0
				14.0-15.0	10	19	47	5	10	9	0
				Mean	**10**	**14**	**41**	**7**	**15**	**13**	**0**
b	12	37	51	18.0-19.2	12	9	19	9	27	24	0
c	70	27	3	19.2-20.6	70	20	5	2	3	0	0
d	14	55	31	20.6-22.0	13	13	24	16	26	8	0
				22.0-23.0	4	9	25	19	31	12	0
				23.0-24.0	26	40	12	6	8	8	0
				Mean	**14**	**21**	**20**	**14**	**22**	**9**	**0**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	12.4-15.0	60	1	7	27	trace	5
b	18.0-19.2	27	1	19	48	1	4
d	20.6-22.0	42	1	17	39	0	1
	22.0-23.0	18	1	16	32	0	33*

* mainly iron-stained mudstones

TM 18 SE 44 1783 8023 Billingford Wood, Scole **Block B**

Surface level +46.0 m (+151 ft)
Water struck at +30.0 m
Shell and auger 152 mm
July 1981

Overburden 13.8 m
Mineral 1.3 m
Waste 0.4 m
Mineral 6.0 m
Bedrock 1.3 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.5	0.5
Boulder Clay	Pebbly clay, silty to sandy, olive grey, hard, many pebbles of chalk with some flint and mudstone, layer of clayey silt from 2.2 m to 3.5 m	9.2	9.7
	Pebbly clay, very silty, light olive grey, soft, much finely comminuted chalk	0.4	10.1
	Pebbly clay, sandy, brownish grey, a few pebbles of chalk with some rounded quartzite, with a layer of fine pebbly sand from 12.7 m to 13.0 m, becoming light brown sandy clay from 13.0 to 13.8 m	3.7	13.8
Glacial Sand and Gravel	**a** 'Very clayey' sand Gravel: fine, angular flint Sand: medium and fine, quartz and flint	1.3	15.1
Boulder Clay	Pebbly clay, sandy, light brown, many pebbles of angular flint and some quartz and quartzite, becoming clayey silt below 15.3 m	0.4	15.5
Kesgrave Sands and Gravels	**b** Sandy gravel Gravel: fine and coarse, subrounded to rounded quartzite and quartz and angular with rounded flint Sand: medium with fine and some coarse, subrounded quartz with flint, moderate yellowish brown	6.0	21.5
Upper Chalk	Chalk, soft	1.3+	22.8

GRADING

	Mean for deposit percentages			Depth below surface (m)	Percentages						
	Fines	Sand	Gravel		Fines	Sand			Gravel		
					-⅛	+⅛ -¼	+¼ -1	+1 -4	+4 -16	+16 -64	+64 mm
a	37	60	3	13.8-15.1	37	24	33	3	3	trace	0
b	5	68	27	15.5-15.8	19	28	30	7	13	3	0
				15.8-16.8	9	26	47	12	6	0	0
				16.8-17.8	3	5	30	12	29	21	0
				17.8-18.9	2	4	36	11	21	26	0
				18.9-19.9	6	40	41	7	5	1	0
				19.9-20.8	6	28	62	3	1	0	0
				20.8-21.5	2	7	25	2	8	47	9
				Mean	**5**	**19**	**41**	**8**	**12**	**14**	**1**
a+b	**11**	**65**	**24**	**Mean**	**11**	**20**	**38**	**7**	**11**	**12**	**1**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
b	16.8-17.8	37	8	27	27	0	1
	17.8-18.9	28	11	20	41	0	0
	Mean	**33**	**9**	**23**	**34**	0	1

TM 18 SE 45 1935 8046 Moores Farm, Brockdish **Block F [1]**

Surface level +47.9 m (+157 ft)
Water not struck
Shell and auger 152 mm
July 1981

Overburden 14.8 m
Mineral 1.0 m
Waste 0.5 m
Mineral 8.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.8	0.8
Boulder Clay	Pebbly clay, silty, mottled light olive brown and light olive grey, becoming olive grey below 4.7 m, many pebbles of rounded chalk with mudstone and flint	11.3	12.1
	Pebbly clay, very silty and sandy, light olive grey, much finely comminuted chalk	0.8	12.9
	Pebbly clay, very sandy, brownish grey, pebbles of rounded quartz and a trace of chalk	1.9	14.8
?Kesgrave Sands and Gravels	**a** 'Clayey' sandy gravel Gravel: fine with coarse, angular flint with rounded quartz and quartzite Sand: medium with coarse and fine, subrounded quartz, moderate yellowish brown	1.0	15.8
	Pebbly clay, very sandy, light brown to pale yellowish brown, some fine angular flint pebbles	0.5	16.3

Kesgrave Sands and Gravels	**b** 'Clayey' pebbly sand, interbedded with layers of pebbly clay below 17.3 m Gravel: fine and coarse, angular flint, rounded quartzite and quartz with some rounded flint Sand: medium with coarse and fine, subangular quartz, dark yellowish brown	3.2	19.5
Crag	**c** 'Clayey' sand, interbedded with laminated silts and clays with some iron pan Gravel: fine with coarse, angular flint with iron pan Sand: medium with fine, quartz	5.5+	25.0

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 mm
a	18	61	21	14.8-15.8	18	10	39	12	18	3	0
b	12	68	20	16.3-17.3	9	5	46	13	16	11	0
				17.3-18.3	13	8	71	3	4	1	0
				18.3-19.5	13	8	45	5	9	14	6
				Mean	**12**	**7**	**54**	**7**	**9**	**9**	**2**
c	16	81	3	19.5-20.7	30	12	49	3	4	2	0
				20.7-23.0	No grading data available						
				23.0-25.0	8	21	71	0	0	0	0
				Mean	**16**	**18**	**62**	**1**	**2**	**1**	**0**
a+b+c	**15**	**74**	**11**	**Mean**	**15**	**13**	**57**	**4**	**6**	**4**	**1**

COMPOSITION

	Depth below surface (m)	Percentages by weight in +8 -16 mm fraction					
		Flint					
		Angular	Rounded	Vein Quartz	Quartzite	Chalk	Others
a	14.8-15.8	47	0	23	27	0	3
b	16.3-19.5	32	9	22	34	0	3

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INSTITUTE OF GEOLOGICAL SCIENCES

INDUSTRIAL MINERALS ASSESSMENT UNIT

THE SAND AND GRAVEL RESOURCES OF THE COUNTRY AROUND DISS, NORFOLK

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

ORDNANCE SURVEY
SHEET TM 17 & Part of TM 18
PROVISIONAL EDITION

THE SAND AND GRAVEL RESOURCES OF SHEET TM 17 AND PART OF TM 18 (DISS, NORFOLK).

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

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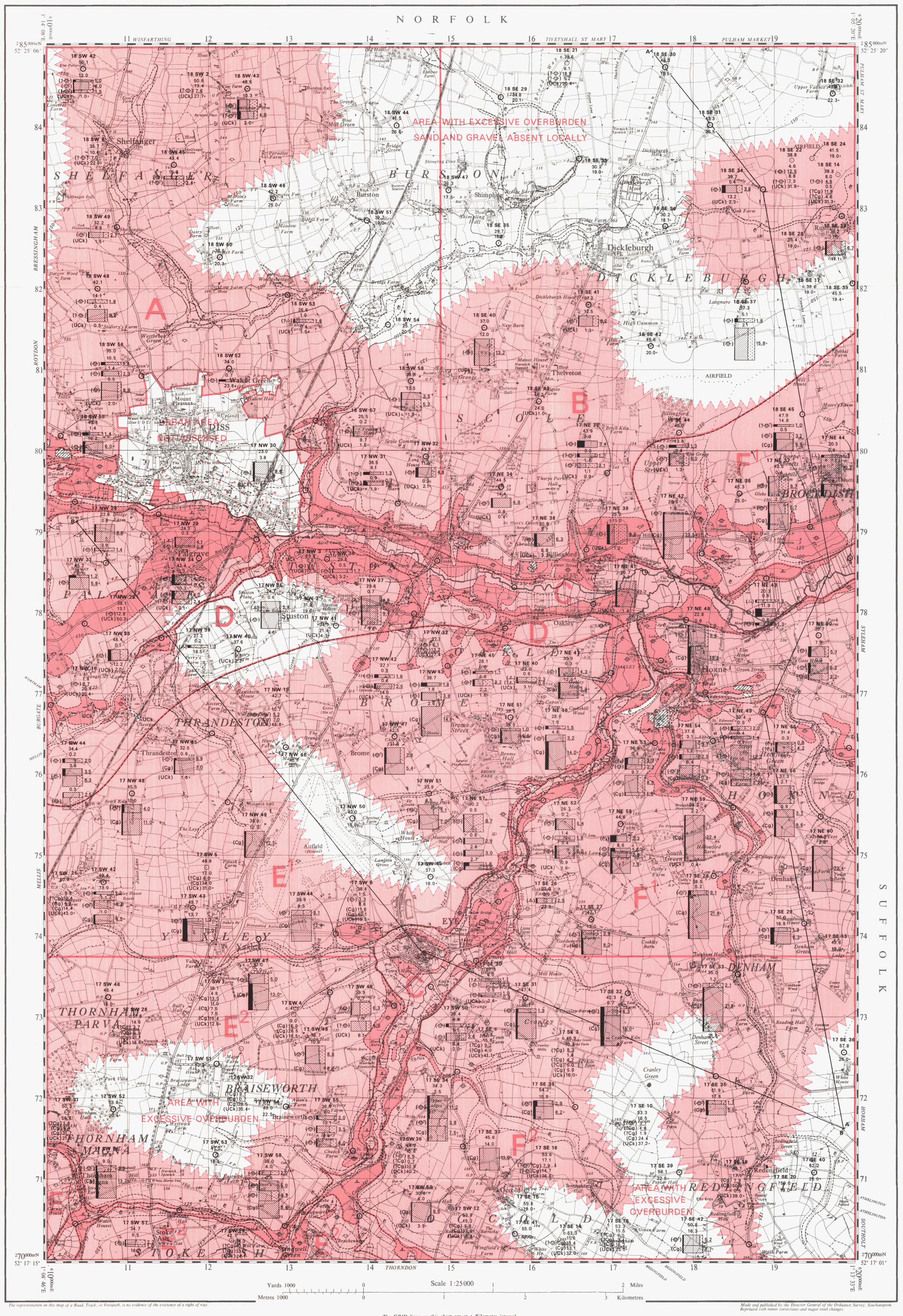


EXPLANATION OF SYMBOLS AND ABBREVIATIONS

DRIFT

- **Peat** - soft, dark brown, silty and clayey partially decomposed organic matter containing locally calcareous shelly silty clay (shell marl)
- **Alluvium** - silty clay, shelly and peaty in part
- **River Terrace Deposits** - sands and gravels containing mainly subangular flint pebbles
- **Head** - poorly sorted clayey pebbly sand to sandy clay, derived by solifluxion
- **Head Gravel** - clayey sandy gravel, derived by solifluxion
- **Hoxne Beds** - sands, silts and clays containing organic material
- **Boulder Clay** - dark grey, light grey and brown, silty to sandy clays with pebbles of chalk, flint, and occasionally vein quartz and quartzite
- **Glacial Drift Undifferentiated** - silty clays, sands and pebbly sands
- **Laminated Clays and Silts** - clayey silts and silty fine sands, laminated
- **Glacial Sand and Gravel** - poorly sorted sand and gravel, locally clayey, consisting mainly of flint with quartz, quartzite, and some chalk
- **Beccles Beds** - undifferentiated fine and medium sands, and gravels containing flint, quartz and quartzite pebbles. Kesgrave Sands and Gravels (◎) are included

RECENT AND PLEISTOCENE

SOLID

- Cg **Crag** - quartz sand, glauconitic in part, some layers of silty clay, sporadic rounded flint and quartz pebbles (proved beneath drift in assessment boreholes)
- UCk **Upper Chalk** - soft white limestone with nodular flints

UPPER CRETACEOUS

- **Made Ground** MG-2
- **Areas worked for sand and gravel** WO-20

BOUNDARY LINES

- Geological boundary, Drift
- Geological boundary, Solid
- Inferred boundary between recognised categories of deposits
- Resource Block boundary

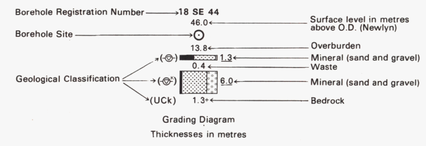
Broken lines denote uncertainty

BOREHOLE DATA

SITE LOCATIONS

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

I.M.A.U. BOREHOLES



Note:
(i) Figures underlined denote thicknesses used in the assessment of resources
(ii) The + sign indicates that the base of the deposit was not reached
(iii) The Geological Classification is given only for mineral and bedrock

Borehole Registration Number

Each I.M.A.U. borehole is identified by a Registration Number e.g. 18 SE 44. The first four characters refer to the quarter sheet and the figures following to the I.G.S. serial number for the borehole within that quarter. The unique designation for borehole 18 SE 44 is TM 18 SE 44.

Grading Diagrams

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

The height of the diagram is proportional to the mineral thickness

The widths of the divisions shows the proportions of **Fines, Sand** and **Gravel,** but small amounts of **Gravel** may be omitted or exaggerated.

OTHER BOREHOLES

The layout of information is the same as for I.M.A.U. boreholes although data available may not be as comprehensive. They are registered in the same series. If the position of the boundary between contiguous deposits of sand and gravel is uncertain, their geological classification symbols are brought together e.g. (◎Cg) and the thickness of the combined unit is given.

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 the purpose of assessment, the mineral 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, Nicker Hill, Keyworth, Nottingham, NG12 5GG.

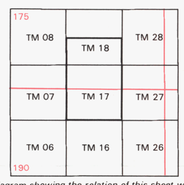


Diagram showing the relation of this sheet with the National Grid 1 : 25,000 sheets and the One - inch Geological Sheets 175, 190.

P-13
A-80
RT-36
H-55
H-56
HX-1
BC-50
GD-4
LC-8
GS-89
BB-1

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

Scale 1:25000
Yards 1000 0 1 2 Miles
Metres 1000 0 1 2 3 Kilometres

The GRID lines on this sheet are at 1 Kilometre interval.
Heights are in feet above Mean Sea Level at Newlyn.
Contours values are in feet.
1 square inch on this map represents 99·639 acres on the ground.

Made and published by the Director General of the Ordnance Survey. Southampton. Reprinted with minor corrections and major road changes.

Compiled from 6" sheets last revised 1903-26.
Other partial systematic revision 1938-53 has been incorporated.
Major roads revised 1956-66.
Selected revision 1961-80.

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.

Geological lines from a survey at the scale of 1 : 10,000 by A. Horton, T.E. Lawson, and C.J. Wilcox in 1979 - 80 R.A.B. Bazley, District Geologist. Included in 1 : 50,000 Geological Sheets 175 (Diss) and 190 (Eye).

Sand and Gravel Survey by C.A. Auton, R. Stanczyszyn and C.J. Wilcox in 1981 R.G. Thurrell, Head, Industrial Minerals Assessment Unit.

1 : 25,000 Sand and Gravel Resource Sheet published in 1983 G.M. Brown, D.Sc., F.R.S., Director, Institute of Geological Sciences (N.E.R.C.)

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GENERALISED HORIZONTAL SECTIONS SHOWING RELATIONSHIPS OF DRIFT DEPOSITS.