British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

OFFICE OF THE
DEPUTY PRIME MINISTER

Mineral Resource Information in Support of National, Regional and Local Planning:

Berkshire (comprising West Berkshire, Reading, Wokingham, Windsor and Maidenhead, Bracknell Forest and Slough)

Commissioned Report CR/03/074N

BRITISH GEOLOGICAL SURVEY

COMMISSIONED REPORT CR/03/074N

Mineral Resource Information in Support of National, Regional and Local Planning:

Berkshire (comprising West Berkshire, Reading, Wokingham, Windsor and Maidenhead, Bracknell Forest and Slough)

F M McEvoy, A J Bloodworth, S J Mathers, D G Cameron, N A Spencer, S F Hobbs, D J Evans, G K Lott and D E Highley

The National Grid and other Ordnance Survey data are used with the permission of the Controller of Her Majesty's Stationery Office.
Ordnance Survey licence number GD 272191/2003

Key words

Berkshire, mineral resources, mineral planning.

Front cover

Hindhay Chalk Quarry, Maidenhead, Berkshire

Bibliographical reference

F M McEvoy, A J Bloodworth, S J Mathers, D G Cameron, N A Spencer, S F Hobbs, D J Evans, G K Lott and D E Highley. 2003. Mineral Resource Information in Support of National, Regional and Local Planning: Berkshire (comprising West Berkshire, Reading, Wokingham, Windsor and Maidenhead, Bracknell Forest and Slough). *British Geological Survey Commissioned Report*, ***CR/03/074N*****.** 12pp

Keyworth, Nottingham British Geological Survey 2003

BRITISH GEOLOGICAL SURVEY

The full range of Survey publications is available from the BGS Sales Desks at Nottingham and Edinburgh; see contact details below or shop online at www.thebgs.co.uk

The London Information Office maintains a reference collection of BGS publications including maps for consultation.

The Survey publishes an annual catalogue of its maps and other publications; this catalogue is available from any of the BGS Sales Desks.

The British Geological Survey carries out the geological survey of Great Britain and Northern Ireland (the latter as an agency service for the government of Northern Ireland), and of the surrounding continental shelf, as well as its basic research projects. It also undertakes programmes of British technical aid in geology in developing countries as arranged by the Department for International Development and other agencies.

The British Geological Survey is a component body of the Natural Environment Research Council.

Published for the Office of the Deputy Prime Minister.

© Queen's Printer and Controller of Her Majesty's Stationery Office 2003.

This publication (excluding logos) may be reproduced free of charge in any format or medium for research, private study or circulation within an organisation. This is subject to it reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown Copyright and the title of the publication specified.

Applications for reproduction should be made in writing to: The Copyright Unit, Her Majesty's Stationery Office, St. Clements House, 1-16 Colgate, Norwich, NR3 1BQ. Fax: 01603 723000 or e-mail: copyright@hmso.gov.uk.

Keyworth, Nottingham NG12 5GG

☎ 0115-936 3241 Fax 0115-936 3488
e-mail: sales@bgs.ac.uk
www.bgs.ac.uk
Shop online at: www.thebgs.co.uk

Murchison House, West Mains Road, Edinburgh EH9 3LA

☎ 0131-667 1000 Fax 0131-668 2683
e-mail: scotsales@bgs.ac.uk

London Information Office at the Natural History Museum (Earth Galleries), Exhibition Road, South Kensington, London SW7 2DE

☎ 020-7589 4090 Fax 020-7584 8270
☎ 020-7942 5344/45 email: bgslondon@bgs.ac.uk

Forde House, Park Five Business Centre, Harrier Way, Sowton, Exeter, Devon EX2 7HU

☎ 01392-445271 Fax 01392-445371

Geological Survey of Northern Ireland, 20 College Gardens, Belfast BT9 6BS

☎ 028-9066 6595 Fax 028-9066 2835

Maclean Building, Crowmarsh Gifford, Wallingford, Oxfordshire OX10 8BB

☎ 01491-838800 Fax 01491-692345

Parent Body

Natural Environment Research Council, Polaris House, North Star Avenue, Swindon, Wiltshire SN2 1EU

☎ 01793-411500 Fax 01793-411501
www.nerc.ac.uk

Contents

1 Introduction

This report is one of a series prepared by the British Geological Survey for various administrative areas in England for the Office of the Deputy Prime Minister's research project *Mineral Resource Information in Support of National, Regional and Local Planning.*

The accompanying map relates to the county of Berkshire (comprising West Berkshire, Reading, Wokingham, Windsor and Maidenhead, Bracknell Forest and Slough) and delineates the mineral resources of current, or potential, economic interest in the area and the sites where minerals are or have been worked. It also relates these to national planning designations, which may represent constraints on the extraction of minerals.

Three major elements of information are presented:

- the geological distribution and importance of mineral resources;
- the extent of mineral planning permissions and the location of current mineral workings; and
- the extent of selected, nationally-designated planning constraints.

This wide range of information, much of which is scattered and not always available in a consistent and convenient form, is presented on a digitally-generated summary map on the scale of 1:100 000. This scale is convenient for the overall display of the data and allows for a legible topographic base on which to depict the information. However, all the data are held digitally at larger scales using a Geographical Information System (GIS), which allows easy revision, updating and customisation of the information together with its possible integration with other datasets. The information will form part of a *Summary of the Mineral Resources of South East England Region*.

The purpose of the work is to assist all interested parties involved in the preparation and review of development plans, both in relation to the extraction of minerals and the protection of mineral resources from sterilisation. It provides a knowledge base, in a consistent format, on the nature and extent of mineral resources and the environmental constraints, which may affect their extraction. An important objective is to provide baseline data for the long term. The results may also provide a starting point for discussions on specific planning proposals for mineral extraction or on proposals, which may sterilise resources.

It is anticipated that the maps and report will also provide valuable background data for a much wider audience, including the different sectors of the minerals industry, other agencies and authorities (e.g. The Planning Inspectorate Agency, the Environment Agency, the Countryside Agency and English Nature), environmental interests and the general public.

Basic mineral resource information is essential to support mineral exploration and development activities, for resource management and land-use planning, and to establish baseline data for environmental impact studies and environmental guidelines. It also enables a more sustainable pattern and standard of development to be achieved by valuing mineral resources as national assets.

The mineral resources covered are sand and gravel, hydrocarbons, building stone, chalk and brick clay.

1.1 RESOURCES AND RESERVES

Mineral resources are natural concentrations of minerals, or bodies of rock that are, or may become, of potential economic interest as a basis for the extraction of a commodity. They will exhibit physical and/or chemical properties that make them suitable for specific uses and be present in sufficient quantity to be of intrinsic economic interest. Areas that are of potential economic interest as sources of minerals change with time as new uses are developed, product specifications change, recovery technology is improved or more competitive sources become available.

That part of a mineral resource, which has been fully evaluated and is commercially viable, to work is called a mineral reserve. In the context of land-use planning, the term mineral reserve should strictly be further limited to those minerals for which a valid planning permission for extraction exists (i.e. permitted reserves). Without a valid planning consent, no mineral working can take place and consequently the inherent economic value of the mineral resource cannot be released and resulting wealth created. The ultimate fate of a mineral reserve is to be either physically worked out or to be made non-viable by changing economic circumstances.

Mineral resources defined on the map delineate areas within which potentially workable mineral may occur. These areas are not of uniform potential and also take no account of planning constraints that may limit their working. The economic potential of individual sites can only be proved by a detailed evaluation programme. Such an investigation is an essential precursor to submitting a planning application for mineral working. Extensive areas are shown as having no mineral resource potential, but some isolated mineral workings may occur in these areas. The presence of these operations generally reflects local or specific situations.

1.2 ENVIRONMENTAL DESIGNATIONS

The map shows the extent of selected, nationally-designated planning constraints as defined for the purposes of this study. These are defined on a common national basis and, therefore, represent a consistent degree of constraint across the country. No interpretation should be made from the map with regard to the relative importance of the constraints, either in relation to mineral development proposals or in relation to each other. Users should consult policy guidelines issued by the relevant Government department, statutory agency or local authority.

The constraints shown on the map are:

- National nature conservation designations – National Nature Reserves (NNR) and Sites of Special Scientific Interest (SSSI)
- International nature conservation designations – Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites
- Scheduled Monuments
- North Wessex Downs Area of Outstanding Natural Beauty (part)

Mineral development may also be constrained by many other factors not shown on the map, including local landscape designations, considerations relating to the protection of other resources, such as groundwater, and local amenity or environmental concerns, such as noise, traffic and visual impact. These have been excluded because the constraint is not defined on a national basis or the information is not generally available. The extent or degree of relevance of such constraints can be ascertained from the relevant statutory agency or the appropriate Mineral Planning Authority.

2 Sand and gravel

Sand and gravel are defined on the basis of particle size rather than composition. In current commercial usage, the term ‘gravel’ is used for material that is coarser than 5 mm, with a maximum size of 40 mm, and the term ‘sand’ for the material that is finer, but coarser than 0.075 mm. Most sand and gravel is composed of particles that are rich in silica (quartz, quartzite and flint), but other rock types may occur locally.

The principal uses of sand are as fine aggregate in concrete, mortar and asphalt. The main use of gravel is as coarse aggregate in concrete. Unwashed sand and gravel can also be used for constructional fill and as ‘hoggin’ for surfacing tracks and paths.

Sand and gravel is the most important mineral produced in the county as aggregates for the construction industry. Resources of sand and gravel underlie almost one-third of Berkshire, and in 2002 total production of sand and gravel was estimated at approximately 1.1 million tonnes. The estimated reserves at the end of 2001 were just over 14 million tonnes. In recent years, approximately three-quarters of the aggregate extracted in Berkshire is concreting aggregate. Just less than one-quarter has been used as hoggin or poorer quality soft sands, whilst the best quality soft sands have accounted for between 2 and 5% of total production. Recent production figures are shown on the graph (Figure 1).

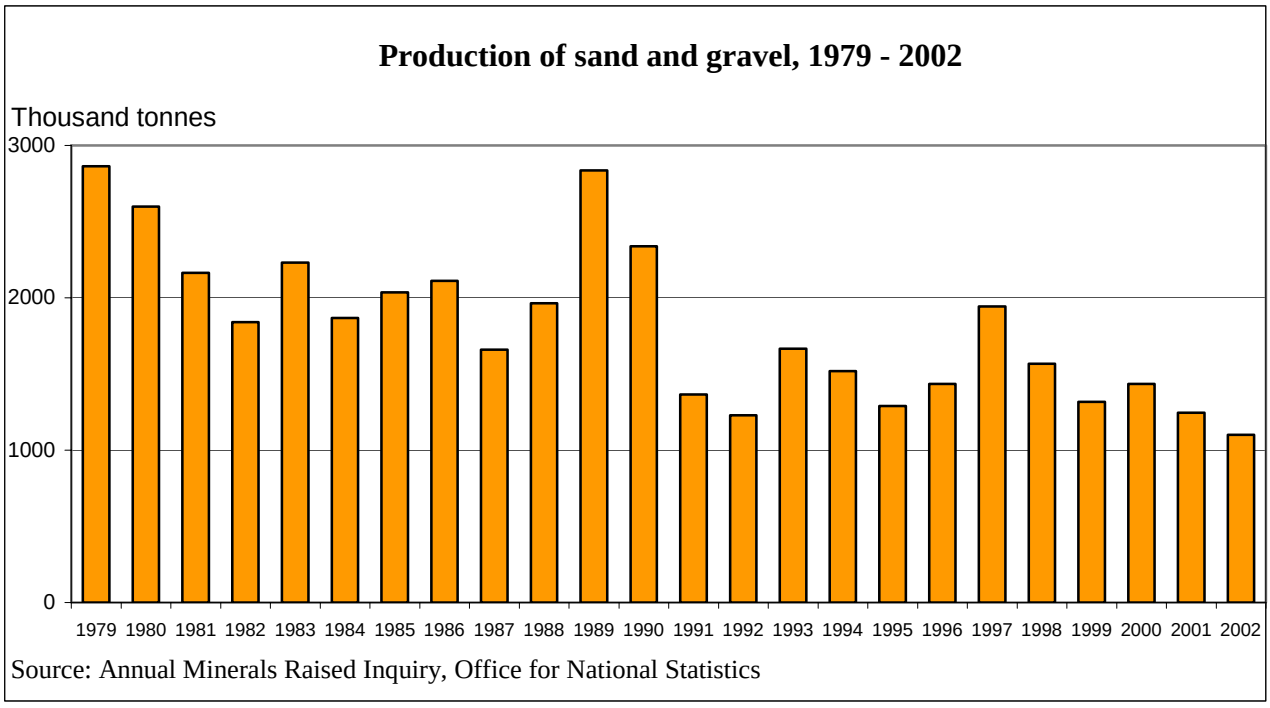

Figure 1 Sand and gravel production in Berkshire

Sand and gravel resources occur in a variety of geological environments. In Berkshire, these resources fall into two categories:

- Superficial or ‘drift’ deposits, subdivided into river sand and gravel, head gravel and sub-alluvial deposits; and
- Bedrock, or ‘solid’ deposits represented by the Reading Formation (Lambeth Group).

2.1 SUPERFICIAL DEPOSITS

The areas assessed for sand and gravel by BGS IMAU resource surveys are identified on the map. Resources shown here are taken from these maps where available. These indicated resources were defined by overburden to mineral ratios. Outside these areas, available data is more limited. Generally, only exposed sand and gravel is defined, although sub-alluvial inferred resources of sand and gravel occurring beneath modern river flood plains may be extensive in some places. Narrow (<200 m) spreads of sub-alluvial deposits are mainly excluded from the map. Their limited width is likely to preclude economic working of any sand and gravel present.

2.2 RIVER TERRACE DEPOSITS

River terrace deposits occur at several levels in most of the major valleys in the county flanking the present floodplain. Terrace deposits are commonly dry in their upper parts and saturated to the base. The major river valleys of Berkshire are the Thames Valley defining the northern limit of the county boundary, the Kennet and Lambourn valleys in the west and the Loddon-Blackwater Valley in the south. These valleys broadly have older, raised river terrace sequences (formerly called 'Plateau Gravels') and younger terraces adjacent to and beneath the present day alluvium. The terraces of each river system are compositionally distinguishable reflecting their source material. The inset map (Figure 2), based on 1:50 000 geological linework (with no economic criteria applied) summarises the gravel composition of the Quaternary river terrace deposits in Berkshire. Compositionally, the main component of the gravels is flint, although they may locally contain a significant percentage of quartz and quartzite, especially those deposits occurring in the north of the county associated with the River Thames.

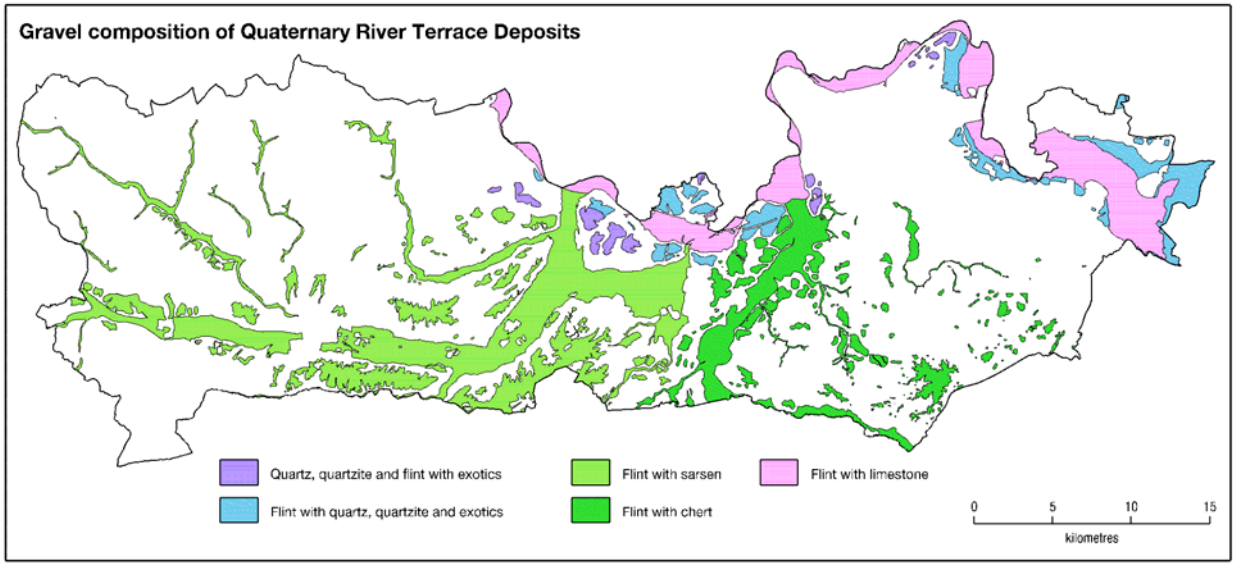

Figure 2 Gravel composition of the Quaternary River Terrace Deposits

River Thames

These quartz-rich gravels are river terraces deposited by an ancestral River Thames in successive phases as the river flowed in an easterly direction across northern Berkshire, towards Hertfordshire and Essex. Many of these quartz-rich river terrace deposits are equivalent to similar deposits in other counties. The higher and hence older river terrace deposit in the district (purple on inset map, Figure 2) contain significantly high quantities of vein quartz pebbles (ranging from 12 to over 30% on average respectively), thought to be sourced from the West Midlands area. The middle terraces (blue on inset map, Figure 2) are composed mostly of flint with significant quartz. The younger floodplain terraces of the River Thames typically contain

variable amounts of limestone, up to 60% in the north-west with an average content of 45%, though this is generally absent near the surface due to dissolution (pink of inset map, Figure 2).

River Kennet and River Lambourn

The River Kennet flows east across Berkshire to its confluence with the Thames at Reading. The River Lambourn flows south east to its confluence with the River Kennet at Newbury. Substantial deposits of gravel and sand underlie the present Kennet Valley and are estimated to contain just under a quarter of Berkshire's gravel resources, the majority of which occur between Newbury and Reading. This widespread expanse of gravel is thought to have resulted from constriction of the river through the Colney Gap, downstream of Reading itself.

The Kennet and Lambourn drainage basins can be divided into high and low level deposits. The high terrace deposits occur at elevations of 140 m down to 85 m OD forming extensive deposits north and south of the present valley. These deposits comprise predominantly angular to rounded flint with rounded quartz generally less than 5 m thick and variably clayey. Within the valleys, the lower level terraces comprise continuous gravel spreads along the course of the river. These lower terrace deposits exhibit considerable lateral variation, but generally comprise sandy and silty-flint gravels up to 5 m thick which contain occasional silty, clay and peat lenses. The gravel content of both high and low terraces of the Kennet and Lambourn is greater than 50% and both contain minor quantities of 'sarsen' (light green on inset map, Figure 2).

River Loddon-Blackwater

The Loddon-Blackwater river systems stretch from Spencers Wood to Reading, running broadly south to north. The terrace deposits of the Loddon-Blackwater catchment are compositionally distinct from others in the district. The gravels are dominated by angular and rounded flint, but in contrast to the Kennet terrace deposits, contain a proportion of chert derived from the Lower Greensand Group (dark green on inset map, Figure 2).

The terraces of the Loddon-Blackwater can be divided into higher older terraces, middle terraces and lower valley deposits. The higher terraces of the valley occurring between 70 m and 90 m above OD are extensively dissected and only isolated small patches remain. These are generally less than 4 m thick but occur up to 21 m in parts, comprising principally sub-angular to sub-rounded flint gravels with fine medium quartz sands with up to 9% sub-rounded sandstone pebbles. The river valleys are floored by a continuous spread of lower valley terraces, lying at heights up to 20 m above the present flood plain.

Sub-alluvial gravel

Sub-alluvial gravels are encountered beneath the alluvium of the major valleys throughout the county and are compositionally similar to the adjacent river terraces deposits. The deposits rest on an irregular channelled surface and are thus of very variable thickness. The deposits are saturated and would require wet working if they were exploited. Deposits of sub-alluvial gravels occur within the valley of the Rivers Kennet, Lambourn, Loddon-Blackwater and Thames. Many minor areas of sub-alluvial gravel have been excluded from the map since their size would preclude economic extraction.

2.3 HEAD/DOWNWASH GRAVEL

These deposits are thin and irregularly distributed patches of clayey and sandy gravels thought to have formed by solifluxion during periods of cold climate during the Quaternary. They may also be known as head gravel. The gravel is commonly mixed with other lithologies present on the

slope and so the resulting lithologies are variable, most contain significant clay contents and many deposits have been worked in the past as 'hoggin'. The clast composition reflects that of the parent material. Head gravel is only shown on the map where it has assessed as an indicated resource by BGS.

Head gravel identified in Berkshire comprises up to 5 m of poorly sorted, matrix supported, very stony, sandy and silty clays. They are best developed along the edges of the high terrace deposits. Other head deposits also occur on the floors of dry valleys on the chalk comprising a mixture of chalk and flint rubble in a silty clay matrix.

2.4 BEDROCK SANDS

In Berkshire, the predominantly clay-bearing Palaeogene Reading Formation of the Lambeth Group is a local source of 'soft' sand. These sand deposits occur at all levels within the Reading Formation as beds of fine- to medium-grained sands, commonly up to 2 m thick but locally reaching 7 m. They are most common at or near the base, but their spatial distribution is very variable and unpredictable. There are active workings in the area around Hermitage, north of Newbury. In the past, the Palaeogene Bagshot Formation was an important local source of sand, but is not currently exploited today and is not shown on the map face.

3 Brick Clay

The term 'brick clay' is used to describe clay used predominantly in the manufacture of bricks and, to a lesser extent, roof tiles and clay pipes. These clays may sometimes be used in cement manufacture, as a source of construction fill and for lining and sealing landfill sites. The suitability of a clay for the manufacture of bricks depends principally on its behaviour during shaping, drying and firing. This will dictate the properties of the fired brick such as strength and frost resistance and, importantly, its architectural appearance.

Most facing bricks, engineering bricks and related clay-based building products are manufactured in large automated factories. These represent a high capital investment and are increasingly dependent, therefore, on raw materials with predictable and consistent firing characteristics in order to achieve high yields of saleable products. Blending different clays to achieve improved durability and to provide a range of fired colours and textures is an increasingly common feature of the brick industry. Continuity of supply of consistent raw materials is of paramount importance.

Common clay was one of the main minerals produced in Berkshire up until the 20th century when numerous small workings for clay for making bricks and tiles existed in a variety of formations. The most important were from large pits in the mottled clays of the Lambeth Group (mostly Reading Formation) situated mainly near Reading and Tilehurst. Some of these pits were worked for over 200 years. Other local sources of brick clay have included the London Clay, 'plastic clays' within the Bagshot Formation and the Langley Silts (formerly mapped as Brickearth). The last brick and tileworks at Knowl Hill between Reading and Maidenhead was closed in the 1990s. Although the Lambeth Group is predominately clay, it also contains interbedded sand which is locally important as a source of aggregate and thus is shown on the map (see Section 2).

4 Chalk

Chalk is a relatively soft, fine-grained, white limestone, consisting mostly of the debris of planktonic algae. In Berkshire, chalk outcrops in over one third of the county, particularly in the west and northeast where it forms the prominent natural feature of the Chalk Downlands. Approximately two thirds of the chalk outcrop lies within the North Wessex Downs AONB. The Chalk is divided into the Grey Chalk (formerly the Lower Chalk) and White Chalk (formerly the Middle and Upper Chalk) subgroups. The White Chalk Subgroup is the most extensive with the Grey Chalk Subgroup only outcropping as narrow bands at Walbury Hill and Lambourn, in the west of the county.

The Grey Chalk Subgroup is characterised by relatively high clay content, particularly toward the base, and is classified as 'low purity' (<93% $CaCO_3$). The overlying White Chalk Subgroup is of a higher purity (93-98% $CaCO_3$). Flints are common in the White Chalk Subgroup.

In Berkshire, chalk was a mineral of some local importance. The use of chalk for marling adjacent loamy land, for burning to produce agricultural lime and as a source of flints for building was widespread and goes back to Roman times. In the past few decades chalk has been extracted only on a small-scale for use as agricultural lime and as construction fill. Some of the voids produced by past extraction have been subsequently utilised for the disposal of inert domestic and industrial waste.

Currently, chalk is produced in relatively small quantities from one quarry at Hindhay, Maidenhead. Extraction is entirely from the White Chalk Subgroup for use as agricultural lime. Approximately 20 000 tonnes of chalk was produced in 2000.

5 Building Stone

The county has few rocks that are suitable for building stone and has always been an importer of stone for building purposes e.g. Kentish Ragstone for Windsor Castle. In the past flints from the Upper Cretaceous succession, or reworked into later deposits, were used extensively for building together with quartz-cemented sandstones (sarsens) and pebble beds (puddingstones) from the Palaeogene succession. Today, flint nodules greater than 8 cm are scalped on a small scale from chalk produced at the quarry at Hindhay, Maidenhead.

Currently, there are no building stone quarries operating in the county.

6 Hydrocarbons

6.1 CONVENTIONAL OIL AND GAS

The county of Berkshire occupies a large tract of land to the north of a prominent line of en echelon anticlinal structures across southern Britain. These folds mark the northern limits of the Palaeogene (Alpine) inversion of the main southerly throwing normal faults that controlled the development of the Weald Basin during mainly Mesozoic times. Palaeozoic basement lies at shallow depths beneath the county to the north of these faults, forming part of the ancient London-Brabant Massif. At crop, thick Palaeogene deposits of the London basin crop out over the southern half of the county with gently southeastwards dipping Cretaceous strata found across the northern half.

A reasonably extensive grid of seismic reflection data of varying vintage exists across the county. However, its setting over the London-Brabant massif, to the north of the main Wealden Basin, with shallow basement and only a thin Mesozoic cover lacking both source and reservoir rocks and deep burial, means the hydrocarbon prospectivity of the county is poor. The charging of any prospective structure, therefore, relies upon long migration pathways from the thicker and more deeply buried source rocks developed to the south in the main Weald Basin, northwards into the county across the main basin bounding faults. To date, Esso with the Strat B-1 well (1966), remain the only oil company to drill in the county. Currently, the only licence block in the county is PEDL35, operated by CANUK, covering an area that includes Windsor Castle.

6.2 COALBED METHANE

Strata of Lower Palaeozoic, Upper Devonian and early Carboniferous age form the pre-Permian and Mesozoic basement that underlies the eastern parts of the county. Over the western half of the county, however, Westphalian Lower to Middle Coal Measures forming part of the Oxfordshire/Berkshire Coalfield are present beneath the Permian and Mesozoic cover. Coals are present, however, they are thin with gas seam contents of 0.4 m^3t^{-1}. The Coal Measures succession is, therefore, classed as unprospective for Coalbed Methane.

Whilst the Palaeogene succession elsewhere in the southern areas of the Weald Basin and south England contains lignite and traces of gas have been encountered during drilling, little if any lignite is known in the Palaeogene succession of Berkshire.

6.3 LICENSING

The Department of Trade and Industry grants licences for exclusive rights to explore for and exploit oil and gas onshore within Great Britain. The rights granted by landward licences do not include any rights of access, and the licensees must also obtain any consent under current legislation, including planning permissions. Licensees wishing to enter or drill though coal seams for coalbed methane and abandoned mine methane must also seek the permission of the Coal Authority

7 Aims and limitations

The purpose of the maps in this series is to show the broad distribution of those mineral resources which may be of current or potential economic interest and to relate these to selected nationally-recognised planning designations. The maps are intended to assist in the consideration and preparation of development plan policies in respect of mineral extraction and the protection of important mineral resources against sterilisation. They bring together a wide range of information, much of which is scattered and not always available in a convenient form.

The maps have been produced by collation and interpretation of mineral resource data principally held by the British Geological Survey. Information on the extent of mineral planning permissions has been obtained from the relevant Mineral Planning Authority (MPA). Some of these permissions may have lapsed or expired. The status of individual areas can be ascertained from the appropriate MPA. Location information on national planning designations has been obtained from the appropriate statutory body (Countryside Agency, English Nature and English Heritage). For further information the relevant body should be contacted.

The mineral resource data presented are based on the best available information, but are not comprehensive and their quality is variable. The inferred boundaries shown are, therefore, approximate. Mineral resources defined on the map delineate areas within which potentially workable minerals may occur. These areas are not of uniform potential and also take no account of planning constraints that may limit their working. The economic potential of specific sites can only be proved by a detailed evaluation programme. Such an investigation is an essential precursor to submitting a planning application for mineral working. Extensive areas are shown as having no mineral resource potential, but some isolated mineral workings may occur in these areas. The presence of these operations generally reflect very local or specific situations.

The map is intended for general consideration of mineral issues and not as a source of detailed information on specific sites. The map should not be used to determine individual planning applications or in taking other decisions on the acquisition or use of a particular piece of land, although they may give useful background information which sets a specific proposal within context.

8 Planning permissions for mineral extraction

The extent of all known extant and former planning permissions for mineral working is shown on the map, irrespective of their current planning or operational status. The polygons were digitised by BGS from Plotting Sheets and other documents supplied by the Berkshire Joint Strategic Planning Unit and the Unitary Authorities in the county area. Any queries regarding the sites shown should be directed to the Unitary Authorities (i.e. the Borough and District Councils) at the addresses shown in Appendix 1. The polygons cover active, former and restored mineral workings and, occasionally, unworked deposits.

Planning permissions represent areas where a commercial decision to work mineral has been made, a successful application has been dealt with through the provisions of the Town and Country Planning legislation and the permitted reserve will have been depleted to a greater or lesser extent. The current planning status is not qualified on the map but is available in the underlying database.

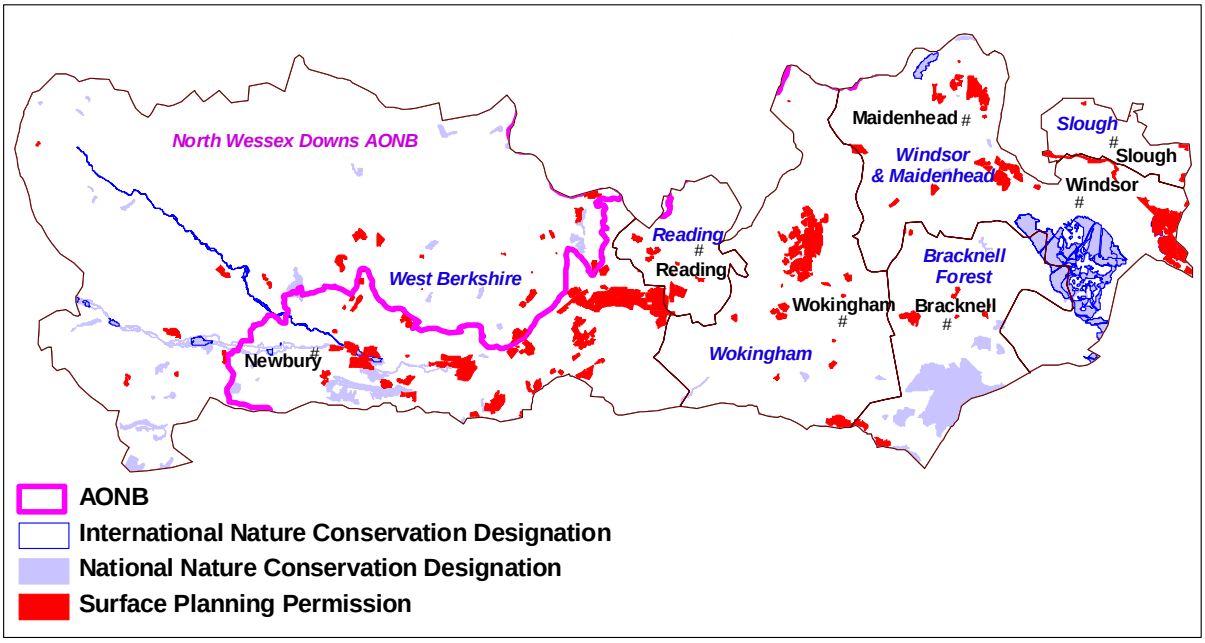

Figure 3 Surface mineral planning permissions and landscape and nature conservation designations in Berkshire

Appendix 1

Contact addresses:

Berkshire Joint Strategic Planning Unit, c/o Royal Borough of Windsor & Maidenhead, St Mary's House, The Town Hall, St Ives Road, Maidenhead SL6 1RF, Tel: 01628 796651, Fax: 01628 796739, web address: www.berks-jsu.gov.uk

Bracknell Forest Borough Council, Environment Department, Time Square, Market Street, Bracknell RG12 1JD, Tel: 01344 424642, Fax: 01344 351104, web address: www.bracknell-forest.gov.uk

Reading Borough Council, Planning Department, Civic Centre, Reading RG1 7TD, Tel: 0118 939 0900, Fax: 0118 958 9770, web address: www.reading.gov.uk

Slough Borough Council, Development & Consumer Protection Department, PO Box 570, Slough SL1 1FA, Tel: 01753 552288, Fax: 01753 875869, web address: www.slough.gov.uk

West Berkshire Council, Planning and Transport Strategy Department, Council Offices, Market Street, Newbury RG14 5LD, Tel: 01635 424000, Fax: 01635 519408, web address: www.westberks.gov.uk

Royal Borough of Windsor & Maidenhead, North: Planning Department, Aston House, York Road, Maidenhead SL6 1PS, Tel: 01628 796050, Fax: 01628 796438, web address: www.rbwm.gov.uk

Royal Borough of Windsor & Maidenhead, South: Planning Department, York House, Sheet Street, Windsor SL4 1DD, Tel: 01628 683585, Fax: 01628 683565, web address: www.rbwm.gov.uk

Wokingham District Council, Environment Services Department, Civic Offices PO Box 153, Shute End, Wokingham RG40 1WR, Tel: 0118 974 6000, Fax: 0118 974 6484, web address: www.wokingham.gov.uk

Topographic base

Topography reproduced from the OS map by British Geological Survey with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright.

All rights reserved. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence number: GD272191/2003.

Administrative boundaries are reproduced with permission from Ordnance Survey Boundary Line. Licence number GD272671/2003.

Constraint information published on the accompanying map has been provided from the various agencies listed below, any queries on this information should be addressed to the relevant agency:

English Nature - Digital SSSI, NNR, SAC, SPA and RAMSAR boundaries © English Nature 2003.

Contact address: English Nature, Northminster House, Northminster, Peterborough, PE1 1UA, Tel: 01733 455000, Fax: 01733 455103, Web page: www.english-nature.org.uk

English Heritage - Positions of Scheduled Monuments at 25th September 2003.

The majority of monuments are plotted using a centred NGR symbol. Consequently the actual area and/or length of a monument protected by the legal constraints of scheduling cannot be represented here. Monuments scheduled since that date are not accounted for. © Copyright English Heritage.

Contact address: English Heritage, 23 Savile Row, London, WS1 2ET, Tel: 020 7973 3132, Web page: www.english-heritage.org.uk

Countryside Agency - Digital AONB boundaries © Countryside Commission 1986

Contact address: Countryside Agency, John Dower House, Crescent Place, Cheltenham, Gloucestershire, GL50 3RA, Tel: 01242 521381, Fax: 01242 584270, Web page: www.countryside.gov.uk

The Coal Authority - Coal Licence Areas © The Coal Authority 2001.

Contact address: The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG, Tel: 01623 427162, Fax: 01623 638338