

# Quarterly Journal of Engineering Geology and Hydrogeology

The journal is abstracted and/or indexed in Current Contents, ASCA, Science Citation Index, Groundwater On-Line, Geological Abstracts, International Civil Engineering Abstracts, Petroleum Abstracts, Geotechnical Abstracts, GeoArchive, GeoRef and Geobase.

Advertising sales: Please contact DP Media, Suite 201, QC30, 30 Queen Charlotte Street, Bristol BS1 4HJ, UK (tel: +44(0)117 904 1283; fax: +44(0)117 904 0085; e-mail: [sales@dpmedia.co.uk](mailto:sales@dpmedia.co.uk))

## CONTENTS – Volume 42, Part 2, May 2009

<b>Predicting sinkholes by means of probabilistic models</b> J. P. Galve, F. Gutiérrez, A. Cendrero, J. Remondo, J. Bonachea, J. Guerrero & P. Lucha	139
<b>A correlation between friction angle and particle shape metrics in Quaternary coarse alluvia</b> A. Cheshomi, A. Fakher & C. J. F. P. Jones	145
<b>The expansive effects of concentrated pyritic zones within the Devonian Marcellus Shale Formation of North America</b> S. E. Hoover & D. Lehmann	157
<b>Understanding the recession of the Holderness Coast, east Yorkshire, UK: a new presentation of temporal and spatial patterns.</b> J. D. Quinn, L. K. Philip & W. Murphy	165
<b>A new laboratory rock test based on freeze–thaw using a steel chamber</b> A. Binal	179
<b>The use of electrical resistivity tomography in deriving local-scale models of recharge through superficial deposits</b> M. O. Cuthbert, R. Mackay, J. H. Tellam, R. D. Barker	199
<b>Stratigraphical influences on the limestone hydrogeology of the Wye catchment, Derbyshire</b> V. J. Banks, J. Gunn & D. J. Lowe	211
<b>Using transmissivity, specific capacity and borehole yield data to assess the productivity of Scottish aquifers</b> M. T. Graham, D. F. Ball, B. É. Ó Dochartaigh & A. M. MacDonald	227
<b>A parameter sensitivity analysis of two Chalk tracer tests</b> S. A. Mathias, A. P. Butler, T. C. Atkinson, S. Kachi & R. S. Ward	237
<b>Technical Note: Barometric water-level fluctuations and their measurement using vented and non-vented pressure transducers</b> M. Price	245
<b>Technical Note: Landslide-related ruptures of the Camisea pipeline system, Peru</b> E. M. Lee, J. M. E. Audibert, J. V. Hengesh & D. J. Nyman	251
<b>Discussion of ‘Some limitations in the interpretation of vertical stereo photographic images for a landslide investigation’, by A. B. Hart, J. S. Griffiths &amp; A. E. Mather, <i>Quarterly Journal of Engineering Geology &amp; Hydrogeology</i>, 42, 21–30</b> R. J. G. Edwards & J. S. Griffiths	261

*Quarterly Journal of Engineering Geology and Hydrogeology* (ISSN 1470-9236) is published in February, May, August and November by the Geological Society Publishing House for the Geological Society, London. The Geological Society, Burlington House, Piccadilly, London W1V 0JU.

**Subscription rates 2009 (volume 42, 4 parts).** All correspondence relating to trade subscriptions should be addressed to the Journal Subscriptions Department, Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, UK, BA1 3JN (tel 01225 445046; fax 01225 442836; e-mail: [sales@geolsoc.org.uk](mailto:sales@geolsoc.org.uk)). The subscription prices for 2009 to institutions and non-Fellows is: QJEGH Current £350 (UK), £398/\$796 (overseas); QJEGH Plus £388 (UK), £435/\$870 (overseas). More information about subscription options can be found at <http://www.geolsoc.org.uk/LyellCollection>.

Outside Europe, the Journal is dispatched by various forms of airspeeded delivery; Periodicals Postage paid at Rahway, NJ. POSTMASTER: send address corrections to the Quarterly Journal of Engineering Geology and Hydrogeology, c/o Mercury International, 365 Blair Road, Avenel, NJ 07001. Back numbers are normally dispatched by surface mail.

© 2009 The Geological Society of London. Except as otherwise permitted under the Copyright, Designs and Patents Acts, 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 9HE, UK. Enquiries concerning reproduction outside these terms should be sent to the Publishers at the Bath address. Users registered with the Copyright Clearance Center, 27 Congress Street, Salem, MA 01970, USA: the item-fee code for this journal is 1470-9236/09/\$15.00. The Geological Society makes no representation, express or implied, with regard to the accuracy of the information contained in this publication and cannot accept any legal responsibility for any errors or omissions that may be made. No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Inclusion of advertising in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

**Cover Photograph.** The photograph is of the River Leen, Nottingham (UK). The river is underlain by Permo-Triassic strata, comprising the Sherwood Sandstone and Cadeby Formation (Magnesian Limestone) aquifers. These aquifers in turn confine the Carboniferous Coal Measures at depth. Historic deep mining of the Coal Measures result in collapse around the abandoned working and subsidence of the overlying strata. This has resulted in tensional fractures within the overlying aquifers extending on occasion to the ground surface, as seen here in the bed of the river. The photograph illustrates surface water losses to aquifers that occur due to subsidence related fractures. Further details of similar fractures in stream beds are presented in Shepley *et al.* (2008) [QJEGH, 41(3)]. Photograph courtesy of John Newham, Environment Agency, © Environment Agency 2000.