

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 Jonathan Knight, Century One Publishing Limited, Alban Row 27–31 Verulam Road, St. Albans, AL3 4DG, UK (tel: 01727 893894; direct line: 01727 739193; e-mail: jonathan@centurypublishing.ltd.uk)

CONTENTS – Volume 50, Part 1, February 2017

Editorial 2017 Eddie Bromhead	1
QJEGH 50th Anniversary Review Paper	
Technical note: Terrain evaluation in Engineering Geology J. S. Griffiths	3
The Fifteenth Glossop Lecture	
Introduction to the Fifteenth Glossop Lecture Ian Duncan	12
Terrain and geohazard challenges for remote region onshore pipelines: risk management, Geoteams and Ground Models Michael Sweeney	13
Research article	
A case study assessing thermal activity at a significant geotourism locality of Ema coal tailing dumps in the mining landscape of Ostrava, Czech Republic Marian Marschalko, Petra Zástěrová, Işık Yılmaz, Petr Jelínek, Jan Růžička, Kateřina Růžičková, & Robert Duda	53
Determination of RVE size based on the 3D fracture persistence Shengyuan Song, Fengyue Sun, Jianping Chen, Wen Zhang, Xudong Han & Xudong Zhang	60
Engineering challenges for sustainable road access in the Himalayas G. J. Hearn & N. M. Shakya	69
Technical note	
Measurement and numerical analysis of water-conducting fractured zone in solid backfill mining under an aquifer: a case study in China Meng Li, Jixiong Zhang, Xuejie Deng, Feng Ju & Baiyi Li	81
Magnetic susceptibility measurements of seafloor massive sulphide mini-core samples for deep-sea mining applications Giovanni Spagnoli, Andreas Hördt, Marion Jegen, Christopher Virgil, Christian Rolf & Sven Petersen	88

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 2017 (volume 50, 4 parts). More information about subscription options can be found at <http://www.geolsoc.org.uk/LyellCollection>. 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). The subscription prices for 2017 to institutions and non-Fellows is: UK, £510 + VAT (online only), £612 + VAT (online + print); EU, £571 + VAT (online only), £686 + VAT (online + print); Rest of World, £571 (online only), £686 (online + print). More information about subscription prices can be found at <http://www.geolsoc.org.uk/lcaccess>.

Outside Europe, the Journal is dispatched by various forms of airspeeded delivery. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156–15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. US Postmaster: send address corrections to the Quarterly Journal of Engineering Geology and Hydrogeology, Air Business Ltd, c/o Worldnet Shipping Inc., 156–15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Back numbers are normally dispatched by surface mail.

© The Geological Society of London 2017. No reproduction, copy or transmission of all or part of this publication may be made without the prior written permission of the publisher. In the UK, users may clear copying permissions and make payment to The Copyright Licensing Agency Ltd, Saffron House, 6–10 Kirby Street, London EC1N 8TS, UK, and in the USA to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Other countries may have a local reproduction rights agency for such payments. Full information on the Society's permissions policy can be found at www.geolsoc.org.uk/permissions

Publishing disclaimer: www.geolsoc.org.uk/pub_ethics

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. Final completion of the Tunnel de Chabrières, Alpes de Haute Provence, France, 2014. Tunnel with rock fall shelter through steeply dipping limestones with further rock bolts and rock catch nets protecting the tunnel portal. Part of the ongoing rock slope stability improvements to the D4085.

Photograph by: D. Giles, University of Portsmouth.