



# ENVIRONMENTAL GEOSCIENCES

VOLUME 17 • NUMBER 1 • MARCH 2010

**DEG Executive Committee**  
 President, Michael A. Jacobs  
 President-Elect, Mary K. Harris  
 Vice President, Jeffrey G. Paine  
 Secretary-Treasurer, Douglas A. Carlson  
 Editor, James W. Castle  
 Past-President, Rebecca L. Dodge  
 Manager, Office of Divisions, Norma Newby

**DEG Advisory Board**  
 Chair, Jeffrey G. Paine  
 Eastern Section, Douglas E. Wyatt, Jr.  
 Gulf Coast Section, Michael D. Campbell  
 Mid-Continent Section, Charles A. Brewer  
 Pacific Section, E. Charlotte Sullivan  
 Rocky Mountain Section, Charles L. Peterson  
 Southwest Section, TBD  
 Member-at-Large, Steven P. Tischer  
 Member-at-Large, Peter M. Lloyd  
 Member-at-Large, Rob Maric  
 Member-at-Large, TBD

**Standing Committee Chairs**  
 Continuing Education, TBD  
 Environmental Geophysics, TBD  
 Environmental Health and Safety, TBD  
 Geohazards, TBD  
 Hydrogeology, Rob Maric  
 Membership, Mary K. Harris  
 Nominating, Rebecca L. Dodge  
 Publication, James W. Castle  
 Honors and Awards, Jeffrey G. Paine  
 Convention-Annual Meeting 2009 Denver,  
 Bruce Smith  
 Convention-Annual Meeting 2010 New Orleans,  
 Mark T. Winter, Vice Chair

**AAPG STAFF**

**Editorial**  
 AAPG Technical Publications Managing Editor,  
 Beverly Molyneux  
 AAPG Technical Publications Coordinator,  
 Paula M. Sillman  
 Phone: (918) 560-2625  
 (800) 364-2274 (U.S. and Canada)  
 Fax: (918) 560-2632  
 E-mail: degjournal@aapg.org

**Production**  
 Cover/Matt Randolph  
 Production/SPI Publisher Services  
 Glen Allen, Virginia  
 Printing/R R Donnelley Book Group  
 Menasha, Wisconsin

**Subscriptions**

Members	Nonmembers
Norma Newby	Pat Hein
Phone: (918) 584-2555	(918) 560-2677
Fax: (918) 560-2694	(918) 560-2652
nnewby@aapg.org	phein@aapg.org
Toll Free: (800) 364-2274 (U.S. and Canada)	

**Advertising**

Advertising Coordinator/Brenda Merideth  
 Phone: (918) 560-2647  
 (800) 288-7636 (U.S. and Canada)  
 Fax: (918) 560-2636  
 E-mail: bmer@aapg.org

♻️ Printed on recycled paper.

CONTENTS

<i>GIS spatial analysis of population exposure to fine particulate air pollution in Beijing, China</i> <b>Tao Tang, Wenji Zhao, Huili Gong, Xiaojuan Li, Ke Zang, Joel D. Bernosky, Wenhui Zhao, and Shanshan Li</b> .....	1
<i>Geological constraints on urban sustainability, Kinshasa City, Democratic Republic of Congo</i> <b>A. S. A. Lateef, Max Fernandez-Alonso, Luc Tack, and Damien Delvaux</b> .....	17
<i>Derivations of simple site-specific recharge-precipitation relationships: A case study from the Cuddalore Basin, India</i> <b>S. Mohan and Marykutty Abraham</b> .....	37
<i>Geochemical characterization, source, and fate of methane and hydrogen sulfide at the Belmont Learning Center, Los Angeles</i> <b>Isaac R. Kaplan and John E. Sepich</b> .....	45

REGULAR FEATURES

<b>Staff Editors</b> .....	ii
<b>President's Column</b> .....	iii
<b>Instructions to Authors</b> .....	iv
<b>Electronic Submission Guidelines</b> .....	36
<b>2010 Annual Convention Preview</b> .....	70
<b>DEG Membership Application</b> .....	76

ACKNOWLEDGMENTS—

The AAPG Division of Environmental Geosciences thanks  
**Isaac R. Kaplan, John E. Sepich,**  
 and **AAPG Foundation**  
 for financial support of this issue of *Environmental Geosciences*.

ON THE COVER

**Background:** Field survey point based GIS interpolation of particulate matter pollution in Beijing. *Image provided by Dr. Tao Tang, see related article on page 1. Top and Bottom Insets:* The Los Angeles City Oil Field, circa 1900. *Permission to use the image granted by Seaver Center for Western History Research, Los Angeles County Museum of Natural History (www.nhm.org), see related article on page 45. Middle Inset:* Savannah plain (c.1881): the birthplace of chaotic megacity (Kinshasa). *Image is property of the Royal Museum for Central Africa (HP.1957.80.38-1, collection RMCA Terruren). Permission to use the image has been granted by the Contemporary History Department of the Royal Museum for Central Africa, see related article on page 1.*

ERRATUM

Environmental Geosciences, v.16, n.4 (December 2009), "Characterization of the Helderberg Group as a geologic seal for CO<sub>2</sub> sequestration," by J. Eric Lewis, Ronald R. McDowell, Katharine Lee Avary, and Kristin M. Carter, p. 201, Acknowledgements should read:

Project supported by U.S. Department of Energy cooperative agreement DE-FC26-05NT42589, under supervision of the Midwest Regional Carbon Sequestration Project (MRCSP). Thanks to Richard Smosna for granting permission to modify one of his published figures for use in the paper. The authors wish to thank the reviewers Timothy R. Carr, Janet S. Roemmel and Erik Venteris for their constructive suggestions that helped improve the quality of the paper.