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# “INDUCED SEISMICITY: POTENTIAL FROM INJECTION/SWD OPERATIONS AND FROM HYDRAULIC FRACTURING”



**September 22, 2012; 8:00 am – 12:00 pm**

**Cleveland Renaissance Hotel, Cleveland OH**

Sponsored by

**Petroleum Technology Transfer Council**

Hosted by

**The Ohio Geological Society & the Eastern Section, AAPG**

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## **COURSE DESCRIPTION**

Earthquakes in south central Oklahoma actually shook houses and caused damage, something essentially unheard of in that area. Earthquakes in Ohio occurred near a disposal well. Considering media attention, the public is certainly concerned, as is industry. This workshop will address just what we know, what we don't know and the studies and work in progress to get better answers. Industry itself needs to develop a full understanding of the issue, then how to best convey that understanding to a rightly concerned public. Seismicity concerns over hydro fracturing the Utica and Marcellus shales will be addressed. Information from the National Research Council Committee's report on Induced Seismicity Potential in Energy Technologies will be discussed in the workshop.

## **INSTRUCTORS**

### **Don Clarke**

Geological Consultant, Long Beach, CA for Tidelands Oil Production Company, Signal Hill Petroleum, Vintage and Terralog. Mr. Clarke also is a Petroleum Geology instructor at the University of Southern California. He earned a B.S. in Geology from California State University, and attended graduate programs at CSUN, CSU Long Beach and CSU Los Angeles. He has been an active member of AAPG since 1986, with more than 60 published papers and abstracts, as well as three geological guidebooks. He is on the National Research Council Committee on Induced Seismicity Potential in Energy Technologies, for The National Academies of Science.

### **Dr. Fred Aminzadeh**

A Research professor at the University of Southern California's Center for Integrated Smart Oil Fields (CiSoft), he also is associated with USC Energy Institute and served as president of the Society of Exploration Geophysicists in 2007-2008. Aminzadeh previously worked for Unocal with both technical and management responsibilities. Before joining USC he was the president and CEO of dGB Earth Sciences USA (dgbes.com) and was an adjunct professor of Geosciences Department at Rice University. He has a Ph. D. from University of Southern California. His thesis dealt with the analysis of layered earth media. He is a fellow of IEEE, member of Russian Academy of Science, a member of Azerbaijan Oil academy, and National Research Council's Committee on Seismology. He has served as a member of DOE's Unconventional Resources Technology Advisory Committee, was the chairman of the SEG

Research Committee and chairman of the advisory board of Western Standard Energy Corp (WSEG.com). He has three patents and an extensive list of publications in diverse areas including eleven books such as those on Reservoir Characterization, Petroleum Geology of South Caspian Basin, 3-D Seismic Modeling Advances in Seismic Data Processing, Geophysics for Engineers, and Petroleum Industry Applications of Pattern Recognition and Soft Computing. He is the Founder of the Induced Seismicity Consortium.

### **Greg Wrightstone**

Director of Geology for Texas Keystone, Inc (Pittsburgh, PA). He is a past president of the Eastern Section of AAPG, and three times past president of the Pittsburgh Association of Petroleum Geologists.

### **Dr. Jeff Daniels**

The Ohio State University, co-Director of Subsurface Energy Resource Center; Professor in the School of Earth Sciences, The Ohio State University, with interests in subsurface imaging, imaging software, geologic carbon sequestration site integrity and 3D interpretation of ground penetrating radar data. Director of collaborative Research on NSF Project on Adaptive Fusion of Stochastic Information for Subsurface Imaging of Fractured Vadose Zones

## **LOCATION**

This course will be held in a meeting room at the Cleveland Renaissance Hotel. The room will be set in a standard arrangement with chairs and tables, all facing the front. A video projector, screen and lectern will be provided. **Please plan to bring your own computer and cable.** If other materials are needed, please let us know as far in advance as possible (contact John Thomas, 330.526.0223, [jthomas@fo-fm.com](mailto:jthomas@fo-fm.com)).

The Ohio Geological Society is the organization managing this ES AAPG meeting. General Chairmen are Pete MacKenzie ([pete@mackex.com](mailto:pete@mackex.com)) and Steve Zody ([zodyoil@sssnet.com](mailto:zodyoil@sssnet.com)). John Thomas (330-526-0223, [jthomas@fo-fm.com](mailto:jthomas@fo-fm.com)) and Ira Sasowsky (330-972-5389; [ids@uakron.edu](mailto:ids@uakron.edu)) are coordinating the scheduling of short courses.

## **REGISTRATION**

Pre-registration is recommended to prevent a pre-mature cancelation of the workshop. To register, go to: <http://www.esaapg2012.org/presentations/short-courses>