

## SEPTEMBER 6, 2011 GEOPHYSICAL SOCIETY OF PITTSBURGH MEETING ANNOUNCEMENT

The first Geophysical Society of Pittsburgh meeting for the 2011 membership year is slated to take place this Tuesday September 6th. Dr. Mark Davies of ARKeX will be presenting a technical review of Gravity Gradiometry and its applications in the Appalachian basin. Dr. Davies is a geoscientist with worldwide experience in the interpretation of geophysical data. He has previously worked for ARK Geophysics, the Hawaiian Institute Geophysics and Planetology and acted as a consultant for a wide range of oil, gas and mining companies, advising them on their geophysical exploration challenges. His particular expertise is in the application of potential field data to exploration. Dr. Davies has also written and presented a series of television and radio programmes in the US and UK on geoscience topics. He has a PhD and a DEA in Applied Geophysics.

### ABSTRACT:

Is there a place for non seismic exploration in unconventional resource plays?

Mark A Davies, Phill Houghton, Ray Matella

The use of Gravity Gradiometry Imaging (GGI) in exploring unconventional, resource type plays is not common practice. Even though GGI has an increased uplift in sensitivity and therefore resolution over traditional gravity instrumentation, the subtle structural nuances that determine the economic viability of many resource plays cannot be imaged by potential field data alone. Potential Field technology has been largely limited to conventional structural plays where lateral density discontinuities, be that structural or stratigraphical, are significant. In recent years an improvement in instrument sensitivity and processing techniques (increasing data resolution), in conjunction with more sophisticated workflows and software, provides a greater degree of GGI integrated interpretation. Still, the technology falls short when contributing to the understanding of subtle faulting at the 'business end' of most unconventional resource play types.

This paper introduces a new workflow termed ShaleQube. ShaleQube combines GGI and geologically time dependant numerical modelling, to identify ranked zones of structural complexity. In particular the method calculates subtle deformation and faulting around larger complex structures, thus transforming what is a macro scale solution, into a new micro scale exploration tool for the interpreter's toolbox. This novel approach has been tested on an unconventional shale play within the Western Canadian Sedimentary Basin. This paper serves to introduce the ShaleQube concept, by reporting on the successes and failures of the Canadian project, while drawing parallels with a new Appalachian Basin acquisition program currently underway over the counties of Armstrong, Clarion, Cameron, Elk, Forrest, Jefferson, Clearfield and Indiana.

### PLACE:

Radisson Hotel - Greentree

101 Radisson Drive, Pittsburgh, PA 15220

412-922-8400

### AGENDA:

5:00 PM – Social Hour - *Special thanks goes to GeoKinetics for sponsoring this lectures social hour.*

6:00 PM – Dinner

Dining options for this meeting are:

- Parmesan Encrusted Stuffed Chicken Breast (or)
- Roast Sliced Herb Encrusted Pork Loin (or)
- Vegetarian Option-Tuscan Grilled Vegetable Stack

7:00 PM - Lecture

COST: \$35.00

\*Please have cash or cheques ready at the door for this first meeting. Please make checks payable to "Geophysical Society of Pittsburgh". A PayPal site will be set-up for future lectures. Please RSVP for this meeting along with the culinary desire of choice to Craig Eckert at [CEckert@egt.com](mailto:CEckert@egt.com) by August 30th.

We would also like to announce the launch of the Geophysical Society of Pittsburgh website later this week. Please check this out at: [www.thegsp.org](http://www.thegsp.org)  
Thanks to Brian Lipinski for putting this together.

Also attached is the GSP membership form for the 2011 year, please fill this out and have it ready for the first meeting.

Thanks,  
GSP Board.