

Joint Session with SPE
Radisson Hotel – Greentree
16 January 2007

Emerging Shale Gas Plays in the Appalachian Basin

presented by

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Abstract

The enormous success of the Mississippian Age Barnett shale play (Fort Worth Basin, Texas) has fueled a new industry paradigm which now favors development of unconventional shale gas resources across several major basins in the United States. Key targets for independents and majors alike include the Mississippian Barnett, Fayetteville, Caney, Floyd and Devonian Woodford shale associated with the Fort Worth, Arkoma, Midland and Black Warrior Basins along the Ouachita Thrust Belt and the Devonian shale in the Appalachian, Michigan, and Illinois Basins.

The Appalachian Basin, the largest onshore basin in the United States, is experiencing a major resurgence in the exploration and development of shale gas plays. Industry interest has centered on: 1) the identification of new shale gas plays (Marcellus, Utica) and 2) applications of new horizontal drilling and completion technologies to existing shale gas plays (Huron).

The Appalachian Basin has been in the forefront of shale gas production. Long before the recent industry focus on shale gas and the exponential growth of the Barnett Shale play, shale gas was developed in the Appalachian Basin as early as 1821 along the Lake Erie shoreline in New York and Pennsylvania and was the site of a major field discovery in 1921. One of the largest US gas fields was developed

in the Lower Huron shale of Upper Devonian Age was discovered in 1921 in the Big Sandy area of Kentucky eventually expanding into a giant accumulation with projected ultimate recoveries in excess of 3 TCF. Shale gas development expanded from the Big Sandy play in the Appalachian Basin into the Michigan Basin and Illinois Basins resulting in the discovery of several major unconventional gas accumulations in the Antrim and New Albany shale intervals.

Recent shale gas exploration and development in the Appalachian Basin encompasses:

- 1) Conventional vertical well development in established producing areas such as the Big Sandy field and expansion areas of Kentucky and West Virginia.
- 2) The application of new drilling and completion technology (horizontal drilling, large scale fracs) to existing producing areas of the Big Sandy play in Kentucky and West Virginia.
- 3) Recognition of the Marcellus shale as a viable vertical and horizontal drilling target in Pennsylvania, New York and West Virginia.
- 4) Application of new drilling and completion technologies to test and produce the Marcellus shale in Kentucky and West Virginia.
- 5) Recognition of the Utica shale as a major source rock and potential shale gas play with limited production, testing or applications of new technology to date.

This presentation will briefly review the emergence of the Barnett and other shale plays in North America and provides examples of existing and emerging shale gas plays in the Appalachian Basin.

For reservations to this informative and entertaining evening, please complete the attached reservation form.

WHAT IS THE PAPG?

PAPG is a non-profit organization founded in 1984 to provide a forum for Petroleum Geologists in the Pittsburgh Area to meet socially and discuss technical topics relative to the exploration and development of reserves in the Northern and Central Appalachian Basin. PAPG is an affiliated association with AAPG (American Association of Petroleum Geologists) and has representation in the House of Delegates. Educational opportunities are provided via field trips, seminars and AAPG Sectional meetings, sponsored solely by PAPG or in conjunction with the PTTC (Petroleum Technology Transfer Council), PGS (Pittsburgh Geologic Society) and SPE (Society of Petroleum Engineers).

Although PAPG is predominately a geologic organization, numerous industry professionals including geophysicists, engineers, lawyers and landmen are among PAPG's members and find the interaction at meetings and educational opportunities beneficial to their professions. PAPG also encourages student membership and participation.

Meetings are typically held monthly from September through May in locations within 50 miles of downtown Pittsburgh. From time to time, meetings are held in conjunction with SPE and PGS.

NEWS AND EVENTS

Have information you want to share with the organization?

Please contact the secretary to add the information to the next newsletter.

PAPG 2006-2007 DUES

PAPG dues for the 2006-2007 season are now DUE!

The membership form is attached to this newsletter. Please fill the form out **completely** so that we can ensure that we have your latest contact information. We are planning to publish a membership directory this year and your updated information is crucial.

NOTICE OF JANUARY 2007 MEETING PITTSBURGH ASSOCIATION OF PETROLEUM GEOLOGISTS

DATE: Tuesday 16, January 2007

PLACE: Radisson Hotel - Greentree
101 Radisson Drive,
Pittsburgh, PA 15220
412-922-8400

TIME: 5:00 PM – Cash Bar
6:00 PM – Dinner
7:00 PM – Speaker

TOPIC: “Emerging Shale Gas Plays in the Appalachian Basin.”

SPEAKER: Bill Zagorski – Great Lakes Energy Partners L.L.C.

COST: \$25.00
\$10.00 students
(Checks payable to PAPG)

DINNER OPTIONS: Roast Pork Loin
or
Rotisserie Style Chicken

RESERVATIONS: Call, email, fax, or mail this reservation form to:

Barbara A. Purks
412-787-5403 (phone)
412-787-2906 (fax)
bpurks@pittsburgh.oilfield.slb.com

NAME(S) _____

COMPANY

DINNER CHOICE(S)

Mark your calendar now for these upcoming events:

February 6TH 2007 – 5:30PM Radisson, Green Tree

PAPG/SPE Joint Meeting

“Exploration for Greenbriar Limestone Targets, Lessons Learned”

Greg Wrightstone – Texas Keystone, Inc.

March 7TH 2007 – 5:30PM Radisson, Green Tree

PAPG/SPE Joint Meeting

“Tail-End Production, a Challenge to Sustainable Operating Strategy”

Wofram Kleinitz

CONTACT THE PAPG

PAPG Officers:

President: **Pat Imbrogno** -- Wind City Management LLC.
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Vice President: **Roy Lynch** -- Dominion Exploration&Prod., Inc.
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Email: eober@texaskeystone.com

AAPG Delegate: **Doug Patchen** – Petroleum Technology Transfer Council
Phone: 304-293-2867 ext 5443
Email: doug.patchen@mail.wvu.edu

SPONSORS

PAPG wishes to thank those companies and individuals who have contributed to the PAPG 2006-2007 season:

- ABARTA Oil & Gas Co., Inc. -
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- Great Lakes Energy Partners, LLC. -
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Sponsor Information

If you or your company would like to sponsor the PAPG and help support the continuation of our Meetings, Field Trips, and other events, we ask that you send a donation to the PAPG. Any contribution of \$100.00 or more by any group or individual will be recognized in the monthly newsletter, and at scheduled monthly meetings.

We ask that you show your support for the PAPG by a contribution and your continuing attendance at the monthly meetings.

We appreciate your continued support.

Contributions may be sent to:

PAPG
PO BOX 16352
GREENTREE PA 15242-0352

APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL

PLEASE INDICATE YOUR MEMBERSHIP STATUS BY CHECKING THE APPROPRIATE BOX:

PROFESSIONAL - RENEWAL

STUDENT - RENEWAL

PROFESSIONAL – NEW MEMBERSHIP

STUDENT - NEW MEMBERSHIP

The **PITTSBURGH ASSOCIATION OF PETROLEUM GEOLOGISTS** membership year runs from JUNE 1 through MAY 31. Monthly meetings are usually held the second Thursday of the month from September through November and January through May.

Professional Dues are \$25.00 per year

Student Dues are \$10.00 per year

NEW APPLICATION: If you have never been a member of PAPG, please fill out the remainder of the form, obtain the signatures of two members to sponsor you, and mail check, payable to PAPG, to the address below.

RENEWAL: Please fill out the mailing address/directory information below if your contact information has changed and submit dues, payable to PAPG, to the address below.

Mail completed form and dues payment (checks only) to:

Dave Boyer
Texas Keystone, Inc.
560 Epsilon Drive
Pittsburgh, PA 15238

MAILING ADDRESS / DIRECTORY INFORMATION – PLEASE COMPLETE ALL INFORMATION

NAME _____ DATE _____

COMPANY / UNIVERSITY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

JOB TITLE: _____

EMAIL: _____ **Please fill this in – help us save those mailing costs!**

PHONE: () _____ - _____

FAX: () _____ - _____

WOULD YOU BE INTERESTED IN PAPG PARTICIPATION?: Officer Speaker

**WOULD YOU LIKE YOUR CONTACT INFORMATION PLACED
IN THE MEMBERSHIP DIRECTORY (available to members only?)** Yes No

TWO SPONSORS REQUIRED for NEW MEMBERS

Name _____ Date _____

Name _____ Date _____