

Tight-Gas Sandstone Reservoirs: the 200-Year Path from Unconventional to Conventional Gas Resource and Beyond

James L. Coleman, Jr.
AAPG Distinguished Lecturer
Director of the Eastern Energy Resources Science Center
US Geological Survey, Reston, VA

*Note: AGS meetings will be at the BP Energy Center for 2010-2011.
Please check the website (www.alaskageology.org) and issues of the AGS newsletter for updates.
This promotes the JOINT LUNCHEON of the Alaska Geological Society and the,
Geophysical Society of Alaska to be held Thursday, February 17th, at the BP Energy Center.*

The evolution of tight-gas sandstones from unconventional to conventional gas reservoirs in the United States began with hydrocarbon exploration and production from the Appalachian Basin during the first half of the 19th century, when brines were the preferred product, and petroleum was the unconventional and generally undesired product. During the next 100 years, rapid development of petroleum extraction and delivery technology fed an increase in petroleum demand, such that low flow-rate reservoirs were uneconomic and unable to meet the national need. These low-flow rate reservoirs were rejected in favor of high flow-rate reservoirs in California, the Midcontinent, and the Gulf Coast. Even then, vast amounts of natural gas were flared off or vented, because no market existed for much of this produced gas.

With each successful discovery from these areas, the U.S. natural gas supply progressively exceeded demand and pipeline deliverability throughout the first half of the 20th century. In response to the "energy crisis" of the 1970's, the Federal government removed price controls on interstate natural gas in 1978 and created new tax incentives in 1980 to help offset the cost of drilling and producing unconventional gas reservoirs, including tight-gas sandstones. These decisions helped spawn a new industry and prompted

AGS Luncheon

Date & Time: February 17th, 11:30 am – 1:00 pm

Program: AAPG Distinguished Lecturer

Speaker: James Coleman, Jr.

Place: BP Energy Center

Reservations: Please make your reservation before noon Tuesday Feb. 15th, 2011.

Cost: Seminar only, no meal: Free

Reserve a box lunch: \$15

Reserve a hot lunch: \$20

Lunch with no reservation:
On an "as-available" basis only

E-mail reservations: vp@alaskageology.org
Or phone (907) 269-8673
(Ken Helmold, AGS VP)

For more information: visit the AGS website:

www.alaskageology.org

geoscientists to examine the geological conditions that created and preserved large volumes of natural gas in low-permeability reservoirs.

Tight-gas sandstone reservoirs exist in a wide variety of settings, ranging from simple one-well accumulations to complex montages of multilayered

sand bodies requiring thousands of wells to develop. They may have a reasonably well-defined geologic limit or appear to have no spatial association with any easily discernible mappable geologic phenomena. Understanding the true nature and future potential of yet-to-be-developed, tight-gas sandstone reservoirs is essential for the nation to supply its annual need for gas for the 21st century.

About the Author

Jim Coleman is the Director of the Eastern Energy Resources Science Center, U. S. Geological Survey (USGS), which conducts research and resource assessments on fossil fuel resources and examines the effects of their presence and use on human health and the environment. At the USGS, he has continued his research on unconventional gas systems and oil and gas resource assessments in the Appalachian, Gulf of Mexico, and Arkoma-Ouachita Basins. Before joining the USGS in 2003, Jim worked for 25 years with Amoco and BP on a variety of international and domestic oil and gas exploration and production and produced water management projects.

Jim has published articles on unconventional gas reservoirs, oil and gas resource assessments, basin and petroleum system evolution, deep water sandstone deposition and reservoir development, thrust- and fold-belt structural geology and petroleum accumulations, and carbonate sedimentology. His work comparing the American Petroleum Industry with the American Whale Oil Industry was recognized with the best presentation award for his talk at the Energy Minerals Division session at the 1994 Denver AAPG annual meeting. He received an M.S. in geology from Mississippi State University in 1978. He lives in Sterling, Virginia, with his wife Jane.

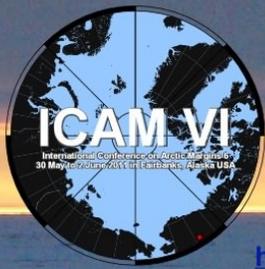
From the President's Desk

Are you a member of the Pacific Section of the AAPG? You may think that you are, but if you have not sent in a membership application and paid your \$12/year dues, then you are not. AGS is an affiliated society of both the AAPG and the PSAAPG, but being a member of both AGS and AAPG does not make you a member of PSAAPG. Why do I bring this up? Well, in looking through the PSAAPG membership list, which exceeds 700 members, I was surprised to find that only ten members have Alaska addresses. There should probably be more of us in this organization.

If you are a petroleum geoscientist working on or in Alaska, you should consider joining PSAAPG in addition to AGS. PSAAPG is fully aligned with the goals and mission of the AAPG, and it can and does advocate on issues important to oil and gas activities within our state. Its stated purpose is *"to provide for discussion of subjects and problems coming within the scope of the profession and to advance the science of geology and the professional well-being of our members. PSAAPG, by such intercourse, will promote the advancement and aims of the American Association of Petroleum Geologists as set forth in its Constitution, By-laws and Code of Ethics"*. In contrast, the purpose of AGS is *"to promote interest in and understanding of the geology of Alaska, and to provide a forum and a common organization for those individuals interested in geology and the related earth sciences. The Society is organized exclusively for charitable, educational, and scientific purposes"*. AGS attempts to serve the entire geoscience community in Alaska through our speaker program, our publications, our scholarships, and our community outreach activities. The majority of our members are probably associated in some way with oil and gas activities in Alaska, but we are not a petroleum industry advocacy organization.

The 2011 PSAAPG Annual Meeting will be held at the Anchorage Sheraton Hotel May 8-11, and AGS is the hosting society. Please take the time to learn more about PSAAPG while attending this conference. And if you are submitting an abstract you'd better hurry. The deadline is February 11. For all of the meeting details, and to learn more about PSAAPG and to join, please go to <http://psaapg.org>.

Tom

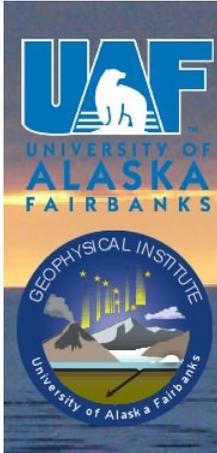


ICAM VI

The Sixth International Conference on Arctic Margins
Fairbanks, Alaska, USA; 31 May - 2 June 2011

<http://www.gi.alaska.edu/icam6/>

<http://www.gi.alaska.edu/icam6/>



*Deadlines: March 30: Abstract
Deadline*

*Rolling abstract acceptance within
one week of submission*

*April 30: Last day for online
registration*

*Venue: Davis Concert Hall, University
of Alaska Fairbanks campus*

*Travel: Symposium is timed with
direct flights from/to Europe*

Scientific sessions:

- Hydrocarbon potential and gas hydrates;
- Science issues relating to UNCLOS Article 76;
- Geodynamic significance of arctic magmatism;
- Vertical motions in the Arctic, tectonic and glacial;
- Geology and palaeogeography of the arctic continental margins;
- Evolution of the Arctic Ocean basins, including plate reconstructions, magmatism, and sedimentology;
- Modern arctic environments, including geological, climatic, and oceanographic processes; and
- Recent advances in arctic research technology

Contact the organizers: ICAM6@gi.alas

The Alaska Geological Society

LUNCHEON SCHEDULE 2010 - 2011

Updates on the web at:

<http://www.alaskageology.org>

September 2010	Thurs., Sept. 16 th , David Scholl, USGS, Earthquake and Tsunami Hazards of the Aleutians
October 2010	Thursday, Oct. 21 st , Peter Haeussler, USGS Neo-tectonics of Cook Inlet
November 2010	Thursday, Nov. 18 th , Joann Welton, EXXON, Evaluating siliciclastic reservoir quality
December 2010	Thursday, Dec. 9 th – Alison Till, USGS, Reconstruction of Arctic Alaska
January 2011	Thursday, Jan. 20 th – Chris Waythomas, USGS AVO, Eruption of Kasatochi
February 2011	Thursday, Feb. 17 th , James Coleman, USGS, Tight-Gas Sandstone Reservoirs (AAPG Distinguished Lecturer)
March 2011	Thursday, March 17 th – Lisa Wirth, UAF Alaska Satellite Facility
April 2011	Thursday, April 21 st , Erik Hulm, BP Alaska, Heavy Oil of Alaska
May 2011	Thursday, May 19 th – Robert Swenson, DGGs, Energy development in Alaska

If you would like to volunteer a talk or would like to suggest a speaker, please contact Ken Helmold at 269-8673



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The success of our locally-hosted upcoming Pacific Section AAPG – Western Region SPE meeting is dependant on securing volunteers in three key areas:

- Oral session chairs
- Poster session chairs
- Oral & poster session judges

Please contact one of the technical session chairs below to volunteer your time!

Oral Session Chair:

Sandy Phillips 907.564.4587 sandra.phillips@bp.com

Poster Session Chair:

Steve Wright 907.263.7865 sswr@chevron.com

Judging Coordinator:

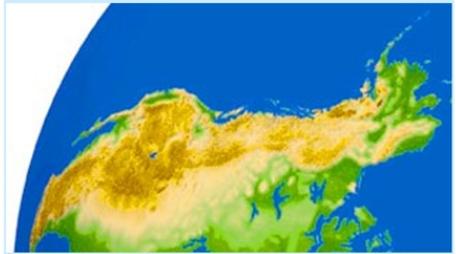
Pete Barker 907.248.7114 pbarker@gci.net

Abstracts for all sessions due by February 11th

Abstract Submission Website:

<http://aapg2011ps.abstractcentral.com>

Arctic to the Cordillera: Unlocking the Potential



Pacific section AAPG & Western Region SPE

Technical Sessions: May 9-11, 2011 Anchorage, Alaska

Conference Co-hosting Organizations
Pacific Section American Association of
Petroleum Geologists & Western Region of the
Society of Petroleum Engineers

Supporting Organizations
Pacific Section – Society of Sedimentary Geology
Pacific Coast Section – Society of Exploration
Geophysicists



Local Hosting Society
Alaska Geological Society



Community Education Corner – Science Fair

By Jana DaSilva Lage

The Alaska Science and Engineering Fair will be held at Begich Middle School on March 19, 2011. Every year, Alaska Geological Society members judge student projects in the Earth, Planetary and Environmental Science categories and present a notice of award to the students who have the best projects in High, Middle and Elementary School. The students receive a \$25 gift card to Borders and are invited to attend a luncheon meeting. This year, I will have a little scientist in the fair. To have an unbiased opinion I need to have volunteers to judge or help judge for AGS. If you would like to judge or have any questions, please contact me at jldasilva5@hotmail.com or 980-9368.

Meeting Information

The **American Geological Institute** provides a comprehensive list of national and international geoscience meetings at: <http://calendar.agiweb.org>

Local Meetings:

American Water Resources Association—Alaska Section

<http://www.awra.org/state/alaska/index.html>

Alaska Geological Society

<http://www.alaskageology.org>

Lunch meetings are held monthly September through May in Anchorage. For more information, contact Jim Clough, 451-5030.

Alaska Miners Association

<http://www.alaskaminers.org/>

The Anchorage branch of the AMA holds weekly meetings at 7 AM every Friday at the Denny's on Northern Lights and Denali. They hold regular luncheon meetings in association with SME. For more information, contact the AMA office at 563-9229.

American Institute of Professional Geologists

<http://www.aipg.org>

AIPG holds regular quarterly evening Section meetings in Anchorage and Fairbanks. For more information contact Mark Lockwood, President, at Shannon & Wilson, Inc., in Fairbanks, 907-458-3142.

Chugach Gem & Mineral Society

<http://www.chugachgms.org>

CG&MS holds all meetings at the First United Methodist Church on 9th Avenue. Contact their hotline at 566-3403 for information on regular monthly business meetings, monthly potlucks, and guidebook sales, including the new Alaska Rockhound Guidebook.

Geophysical Society of Alaska

<http://gsa.seg.org/>

Luncheon meetings are held monthly September through May at the ConocoPhillips Tower. For more information, contact Phil Rorison, 265-6321

Society of Petroleum Engineers

<http://alaska.spe.org/>

UAS Environmental Science Program

<http://www.uas.alaska.edu/envs>

National Association of Geology Teachers (NAGT)

<http://www.nagt>

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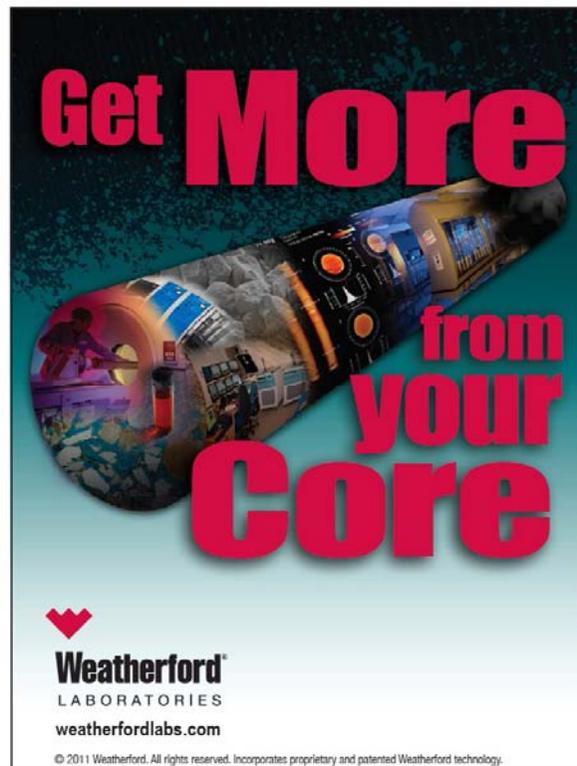
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The Alaska Geological Society, Inc.
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On the web at: <http://www.alaskageology.org>

The Alaska Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related Earth Sciences.

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MEMBERSHIP INFORMATION

AGS annual memberships expire November 1. The annual membership fee is \$20/year. You may download a membership application from the AGS website and return it at a luncheon meeting, or mail it to the address above.

Contact membership coordinator Greg Wilson with changes or updates (e-mail: gregory.c.wilson@conocophillips.com; phone: 907-263-4690)

All AGS publications are now available for on-line purchase on our website. Check to see the complete catalogue.

<http://www.alaskageology.org/publications>

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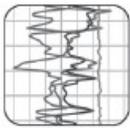
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2010 - 2011 Alaska Geological Society Board

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